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BOARD  
MEETING**

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From: The Secretary

Subject: **Austria—Financial System Stability Assessment**

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**\*Unless an objection from the authorities is received prior to the conclusion of the Board's consideration, the document will be published.**





# AUSTRIA

## FINANCIAL SYSTEM STABILITY ASSESSMENT

January 9, 2019

### KEY ISSUES

**Context:** Growth in Austria has been strong, but the outlook has moderated, and financial vulnerabilities are building up. Structural vulnerabilities include a large and tiered banking system, complex ownership structures and financial interlinkages, and a focus on Central, Eastern, and South Eastern Europe (CESEE) markets. Banks are exposed to cyclical risks from volatility in the CESEE, and rising vulnerabilities in the housing market. The solvency coverage ratio of insurance firms is high, but the sector suffers from low growth, low interest rates, and future profitability risk.

**Findings:** The FSAP analysis suggests that banks are, in aggregate, resilient to severe macrofinancial shocks, although most banks would make use of capital conservation buffers. Mutual financial cooperation arrangements among banks act as a shock absorber for idiosyncratic shocks, but high financial interlinkages may fuel loss propagation in a systemic event. While a robust regulatory framework and prudential policy actions have lowered financial stability risks, challenges include data and regulatory gaps, resource constraints, high interconnectedness, and exposure to cross-border and money-laundering risks.

**Policies:** Authorities should enhance monitoring and oversight related to contagion/spillover risks. This would include enhancing the stress testing framework to consider second round effects and contagion, improving data collection on foreign exposures, nonfinancial corporates and real estate, and strengthening supervision of related party, group-wide, and money-laundering risks. Supervisors should be able to take timely action and correct unsustainable risk taking, including unsustainable lending and business models. Authorities need to ensure efficient information sharing arrangements and pledge adequate resources to stability and supervision given the complexity of the financial system. Authorities should continue efforts to ensure that resolution strategies are effective to contain spillover risks, expand the scope of their annual contingency testing program to include amplification channels, and support funding in resolution.

- The team was led by Fabiana Melo (Mission Chief) and Laura Valderrama (Deputy Mission Chief), and included Carolina Claver, Lucyna Gornicka, Izabela Karpowicz, John Laker, Dimitrios Laliotis, Sohaib Shahid, David Scott, Nobuyasu Sugimoto, Jose Tuya, and Spyros Zarkos. The team was supported from IMF headquarters by Anastasiia Morozova and Xiaodan Ding.
- The mission met with various senior Austrian officials, including the Governor and Vice-Governor of the Austrian National Bank (OeNB), the Executive Board members of the Financial Markets Authority (FMA), as well as senior management and staff at the Federal Ministry of Finance (BMF), OeNB, FMA, Ministry of Digital and Economic Affairs, Financial Market Stability Board (FMSB) and Austrian Fiscal Council, Ministry of Justice, and other government authorities. The mission also met banks, insurance companies, auditors, academics, market analysts, and Fintech firms. The team also had meetings with the ESRB and the ECB. The team would like to thank all counterparts for their excellent cooperation and fruitful discussions.
- FSAPs assess the stability of the financial system as a whole and not that of individual institutions. They are intended to help countries identify key sources of systemic risk in the financial sector and implement policies to enhance its resilience to shocks and contagion. Certain categories of risk affecting financial institutions, such as operational or legal risk, or risk related to fraud, are not covered in FSAPs.
- Austria is deemed by the Fund to have a systemically important financial sector according to Mandatory Financial Stability Assessments Under the Financial Sector Assessment Program—Update (11/18/2013), and the stability assessment under this FSAP is part of bilateral surveillance under Article IV of the Fund’s Articles of Agreement.
- This report was prepared by Fabiana Melo and Laura Valderrama with team contributions.

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This report is based on the work of the Financial Sector Assessment Program (FSAP) mission that visited Austria in May and September 2019. The FSAP findings were discussed with the authorities in September 2019.

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## Glossary

AML	Anti-Money Laundering
AMLD	EU Anti-Money-Laundering Directive
ARNIE	Applied Risk Network and Impact Assessment Engine
AuM	Assets under Management
BaSAG	Bank Recovery and Resolution Act
BMF	Federal Ministry of Finance
BRRD	European Union Bank Recovery and Resolution Directive (2014/59/EU)
BWG	Banking Act
CCyB	Countercyclical Capital Buffer
CDD	Customer Due Diligence
CESEE	Central, Eastern, and South Eastern Europe
CET1	Common Equity Tier 1
CFT	Combating the Financing of Terrorism
CoMap	Contagion Mapping
CRD	EU Capital Requirements Directive IV (2013/36/EU)
CRR	EU Capital Requirements Regulation (2013/575/EU)
DGS	Deposit Guarantee Scheme
DSTI	Debt-Service-to-Income
DTI	Debt-to-Income
EBA	European Banking Authority
ECB	European Central Bank
EGB	Erste Group Bank AG
ELA	Emergency Liquidity Assistance
FATF	Financial Action Task Force
FMA	Financial Market Authority
FMSB	Financial Market Stability Board
FSAP	Financial Sector Assessment Program
FX	Foreign Exchange
GFM	Global Macrofinancial Model
G-SIB	Globally Systemically Important Bank
IPS	Institutional Protection Scheme
LCR	Liquidity Coverage Ratio
LGD	Loss Given Default
LSI	Less Significant Institution
LTG	Long-Term Guarantees
LTV	Loan-to-Value
MPE	Multiple Point of Entry
MREL	Minimum Requirement for own funds and Eligible Liabilities
NFC	Nonfinancial Corporation
NII	Net Interest Income
NIM	Net Interest Margin
NPL	Nonperforming Loans

NSFR	Net Stable Funding Ratio
OeNB	Austrian National Bank
O-SII	Other Systemically Important Institutions
RBI	Raiffeisen Bank International AG
RLB	Regional Landesbanken
SCR	Solvency Capital Requirement
SI	Significant Institution
SPE	Single Point of Entry
SRB	Single Resolution Board
SRM	Single Resolution Mechanism
SSM	Single Supervisory Mechanism
SyRB	Systemic Risk Buffer
VA	Virtual Asset
VB	Volksbanken Banking Segment
VASP	Virtual Asset Service Provider
WEO	World Economic Outlook



## EXECUTIVE SUMMARY

**The Austrian authorities have proactively addressed financial stability risks since the previous FSAP.** The macroprudential policy framework has been enhanced by the setup of the Financial Market Stability Board (FMSB) in 2014. The FMSB has broadened the policy toolkit, issuing guidance on “sustainable lending in real estate financing” and addressing structural systemic risks by activating Systemic Risk Buffer (SyRB) and Other Systemically Important Institutions (O-SII) buffers. The national transposition and implementation of EU directives and regulations has helped to address some of the recommendations of the previous FSAP, and the Financial Markets Authority (FMA) has issued minimum standards to contain risks in central, southeastern and eastern Europe (CESEE). The crisis management and resolution framework is comprehensive, although some challenges remain. A unified, ex ante-funded full-scale guarantee deposit scheme (DGS) was launched in 2019, supplemented by the DGS of the savings sector, which was one of the key recommendations of the 2013 FSAP. Significant progress has been made in aligning Austria’s anti-money-laundering/combating the financing of terrorism (AML/CFT) framework with the Financial Action Task Force (FATF) standards.

**However, the financial system faces challenges.** Structural vulnerabilities include a large banking system, with almost 600 banks at unconsolidated level, complex ownership structures and financial interlinkages—where banks with tiered corporate structures and layers of mutual cooperation arrangements account for half of the assets—and a focus on CESEE markets, which generate 42 percent of the profits. Mutual cooperation arrangements among banks, including institutional protection schemes (IPS), cross-guarantee schemes, and liquidity associations, act as a shock absorber for idiosyncratic shocks, but high financial interlinkages may fuel loss propagation in a systemic event. Concerns over the adequacy of AML controls on foreign branches and subsidiaries may expose Austrian banks to operational and reputational risks. Banks are exposed to volatility in the CESEE and rising vulnerabilities in the housing market. The coverage ratio of insurance firms is high, but the sector suffers from low growth, low interest rates, future profitability risk, and increasing legal, reputational and conduct risks.

**The FSAP analysis suggest that banks are, in aggregate, resilient to severe macrofinancial shocks.** Bank capital buffers are sizeable relative to immediate threats. Capital ratios after macroeconomic shocks and market risks would still be comfortably above minimum requirements, although most banks would make use of capital conservation buffers. In the credit cooperative sector, the ownership structure seems to be a source of strength under baseline conditions but an amplifier of shocks under stress; high interconnectedness generates contagion effects from hypothetical bank defaults in the network analysis. Regarding liquidity, the banking system is resilient to sizeable withdrawals of funding given its strong counterbalancing capacity and sizable deposit funding base. The liquidity cooperation scheme ensures pooling of liquidity among members, contributing to financial stability.

**While a robust regulatory framework and timely policy actions—including the 2012 sustainability guidance and the introduction of macroprudential tools—have lowered financial stability risks, there is scope for improvement.** Although there are benefits from Austrian financial institutions' foreign business in CESEE and financial cooperation arrangements, these also raise some risks. Authorities should strengthen the related party transaction framework. This is particularly relevant given the size of the spillovers identified in the stress test analysis of the cooperative sector. They should also establish ex-ante approval requirement for Less Significant Institutions (LSI) investment in nonfinancial undertakings and phase-out the role of state commissioners in supervisory boards. Authorities should enhance the monitoring of financial linkages; and ensure that the size and design of buffers and supervisory actions are adequate to mitigate financial stability risks, including those derived from mortgage lending and foreign exposures. Supervisors should be able to take timely action and correct unsustainable risk taking and business models also based on qualitative assessments of the deficiencies, strengthen the role of banks' supervisory boards, and clearly communicate with insurance firms on strategic risks.

**Authorities need to collect better and more granular data regarding real estate and nonfinancial corporate (NFC) sectors and CESEE exposures, ensure efficient information sharing arrangements, and pledge adequate resources given the complexity of the Austrian financial system.** For risks to be identified, data reporting should be available at a sufficiently granular level to ensure timely supervisory action. In particular, standards for and monitoring of intra-group transactions need enhancement. The authorities should continue efforts to close data gaps, including in the real estate and NFC sectors, and improve coverage and granularity of CESEE data. The authorities should ensure adequate resources to further advance the stress testing and macroprudential frameworks. For insurers, adequate resources are also needed for the continuous improvement of the Solvency II regime, market conduct supervision and recovery and resolution framework. The vulnerability of the financial system to money laundering risks calls for additional efforts on group-wide supervision and better integration between prudential and AML supervisors. The implementation of the recent modifications to FATF recommendations regarding virtual assets/virtual asset service providers (VA/VASPs) will bring challenges in training and availability of resources.

**Recovery and resolution planning are well advanced, but the size and complexity of the banking system create challenges for the implementation of the preferred resolution strategy.** Authorities should continue efforts to ensure that the multiple point-of-entry (MPE) resolution approach for the two international banks is effective to contain spillover risks from CESEE; strengthen collaboration with home supervisors of institutions under single point-of-entry (SPE) resolution to ensure that system-wide risks are contained; and continue to develop a recovery and resolution regime for insurance firms. The authorities should expand the scope of their annual contingency testing program to include situations where system-wide crisis is derived from foreign risk and subject to domestic amplification mechanisms, and support funding in resolution. For the non-systemic banks, the bankruptcy regime should provide for purchase and assumption transactions.

**Table 1. Austria: FSAP Key Recommendations**

<b>Recommendations</b>	<b>Time*</b>
<b><i>Financial Sector Oversight</i></b>	
Review legislation to clarify and narrow the BMF's role in oversight of the FMA and remove industry participation in its Supervisory Board (BMF; ¶39).	MT
Make the OeNB the chair of FMSB and increase its voting representation (BMF; ¶34).	NT
Strengthen related party risk framework and establish ex-ante approval for LSI significant investments in non-financial undertakings (FMA/BMF; ¶42).	NT
Phase-out the role of state commissioners in supervisory boards (BMF/FMA; ¶41).	MT
Enhance internal guidelines for supervisory action based on qualitative factors (FMA; ¶40).	I
Stress-test insurance segments / business lines with material future profitability and follow-up with appropriate actions, such as capital add-on (BMF/FMA; ¶44).	NT
Review resources for the maintenance of Solvency II, insurance market conduct supervision and potential recovery and resolution framework, and AML supervision for all entities, including VASPs (FMA; ¶43, ¶45).	NT
Revise AML/CFT risk scoring reflecting cross-border risks, increase onsite inspections of low risk banks, branches and subsidiaries and improve non-EU/EEA information exchange (FMA; ¶46).	NT
Monitor the effectiveness of the FMSB's sustainable lending guidance and prepare regulatory actions, such as binding macroprudential limits, if the risk profile does not improve (FMSB; ¶37).	NT
Enhance oversight of inward spillover risks from the inverse ownership structure of the Raiffeisen sector (OeNB/FMA; ¶38).	NT
<b><i>Financial Stability Analysis</i></b>	
Close data gaps, including in the real estate and NFC sectors, and improve coverage and granularity of CESEE data (OeNB; ¶35).	MT
Enhance stress testing framework to consider second round effects, dynamic balance sheets, and contagion/spillover effects (OeNB; ¶31).	MT
Ensure resources and organizational structure are adequate to meet stress testing framework objectives (OeNB; ¶31).	NT
<b><i>Financial Crisis Management and Safety Nets</i></b>	
Explicitly provide for purchase and assumption transactions in the bankruptcy regime. (BMF; ¶52)	NT
Seek legislation for standing authority to implement stabilization measures, support funding in resolution, and explore mechanisms for prepositioning BMF to support borrowing by DGSs (BMF; ¶53, 54).	I
Consider cross-border spillovers in national crisis contingency plans (FMA/BMF; ¶51).	NT
Enhance insurance crisis preparedness, introducing pre-emptive recovery planning for eligible insurers (BMF/FMA; ¶56).	NT
* I-Immediate" is within one year; "NT-near-term" is 1–3 years; "MT-medium-term" is 3–5 years.	

## BACKGROUND

### A. Macrofinancial Setting

**1. Growth in Austria and the CESEE has been strong, but the outlook has moderated.** The output gap is positive, and the medium-term outlook indicates gradual growth convergence towards potential. Austrian banks' foreign business continues to focus on CESEE countries, which have shown strong economic expansion—although activity has softened in 2019 (Table 3 and Figure 5).

**2. The financial sector has benefited from the favorable macrofinancial environment, but late-cycle risks are building.** Annual growth of lending to households was 4.2 percent in 2019Q1, supported by solid income growth and low interest rates. Although NFC loan growth, especially to real estate and construction services, has been strong, it is expected to moderate given lower credit demand due to a slowdown in investment growth. Cyclical risks in the CESEE region and potential spillover risks are high, as the economies are in the late stages of their business cycle.

**3. House prices have become overvalued in recent years, but there are mitigating factors to the vulnerability to real estate.** House prices are estimated to be overvalued by around 10-15 percent nationally, and by over 20 percent in Vienna (Figure 9). The high growth in real estate transaction volumes (13.3 percent in 2018) is suggestive of real estate market overheating. Yet, a range of built-in mitigating factors in the housing market could soften the impact of shocks on the real economy. These include a large and regulated rental market in Vienna and other urban areas, moderate household leverage, low ownership ratios (55 percent), and alternative arrangements for housing finance.<sup>1</sup>

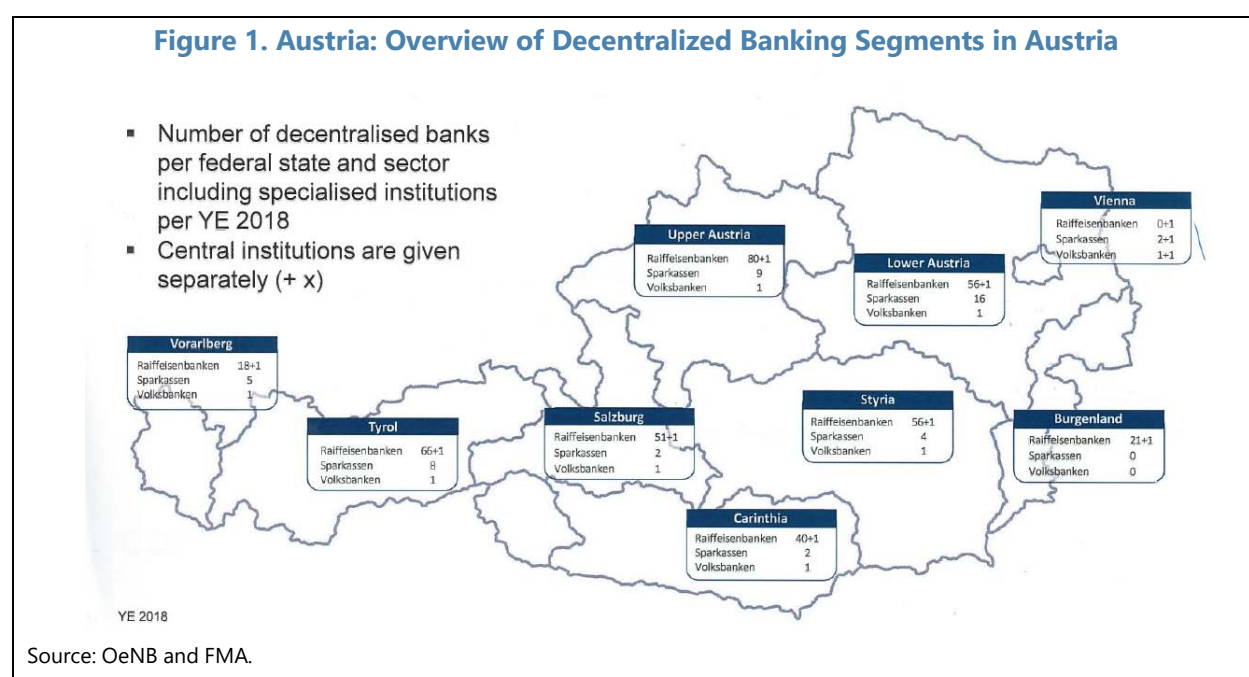
### B. Financial Sector Structure and Performance

**4. Financial system is dominated by a large, concentrated, and diverse banking sector.** The banking sector represents around 250 percent of GDP and about 75 percent of total financial system assets. Mutual funds, insurance firms, and pension funds account for 14 percent, 10 percent, and 2 percent of financial system assets, respectively. FinTech business, concentrated in Vienna, represents only 0.25 per mil of GDP<sup>2</sup> with about 100 firms operating with different business models. There are almost 600 banks. While their total number fell by 32 in 2018—driven mainly by consolidation in the credit cooperative sector—total assets grew by 3.9 percent. There are seven significant Austrian institutions (SIs) under the Single Supervisory Mechanism (SSM) representing 60 percent of total system assets. The banking sector is diverse and concentrated, with the top 3 banks representing 50 percent of the market. Authorities favor proportionality in regulation and supervision to sustain the diversity of the banking system.

<sup>1</sup> Alternative arrangements for housing finance include regional mortgage banks, contract savings banks, and housing construction banks. Housing subsidies are also important as alternative sources of finance.

<sup>2</sup> Given the lack of macrofinancial significance, Fintech was out of the scope of the FSAP.

**5. The structure of ownership, control, and financial linkages in the banking system is complex** (Figure 1). There are three “decentralized segments”.<sup>3</sup> Together, the 49 Sparkassen have created a banking group (Erste Group Bank AG (EGB), which is internationally active and the largest Austrian bank), an IPS, thus forming a cross-guarantee scheme ex lege according to CRR, and a DGS to provide mutual resilience. In the three-tiered Raiffeisen segment, RBI (3<sup>rd</sup> tier) is the “central institution” for the eight regional Landesbanken (RLB) (2<sup>nd</sup> tier), which in turn play a similar role for the primary banks (1<sup>st</sup> tier) (Figure 2). RBI is a listed bank, with foreign subsidiaries in CESEE and Russia, and is majority owned (58 percent) by the RLBs which, in turn, are owned by the 386 primary banks (“inverse ownership”). In the Raiffeisen segment, the IPS system is based on two levels, the national IPS and six regional IPSs.<sup>4</sup> The two-tiered Volksbanken (VB) segment features eight regional banks, including the “central institution” VB Wien and a specialized bank. The VB segment has formed a liability association with unlimited cross-guaranteed schemes. In all segments, each “central institution” provides services to lower-tier members, such as liquidity management.



**6. Austrian banks’ foreign business continues to focus on CESEE countries.** The CESEE region represented 24 percent of exposures in 2018<sup>5</sup> and over 42 percent of consolidated banking net profits. Austrian banks’ CESEE activities are concentrated in countries belonging to the EU, with the highest exposures in Czech Republic and Slovakia, accounting for half of total CESEE exposure.

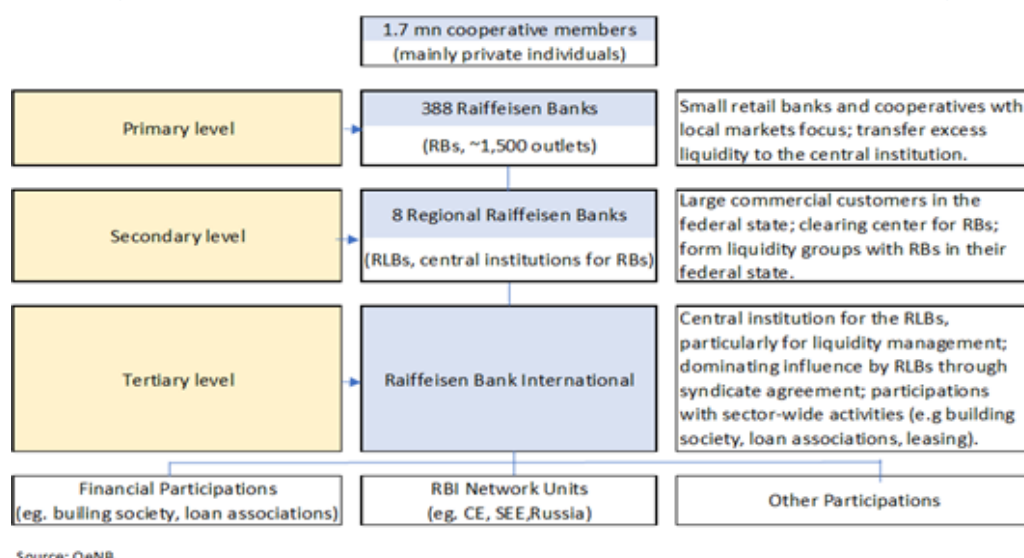
<sup>3</sup> These banks operate as separate entities but are part of liquidity associations, have cross-equity participations, and are subject to contractual support mechanisms to provide mutual support. Financial support is subject to the conditions determined by a centralized Risk Council.

<sup>4</sup> The other two RLBs and their primary banks form a non-contractual solidarity association.

<sup>5</sup> There was an on-off decline in 2016 due to the transfer of UniCredit Bank Austria AG’s CESEE operations to its Italian parent UniCredit S.p.A.

While aggregate exposure to Russia represents 7 percent of CESEE assets, it is significant for the Raiffeisen segment.

**Figure 2. Austria: Example of Support Mechanism – Raiffeisen Segment <sup>1</sup>**



<sup>1/</sup> The Raiffeisen group (RBG) is the largest Austrian sector with over EUR 300 billion (30 percent total assets). The three-tiered structure includes 386 primary banks (RB), eight regional Landesbanken (RLB), and an internationally active bank (RBI). All RBs and their RLB are members of solidarity associations in each federal state to provide solvency support. In addition, participating members in six regional IPS (L-IPS) and a federal IPS (B-IPS) have contractual obligations to support each member and contribute to a customer protection scheme (RKO) in addition to the national DGS. RBI is the 'central institution' for the RLBs and provides liquidity management services. It holds participations with sector-wide activities in Austria (Poso, RBSK, RWBB) and is active in Central and Eastern Europe (Tochter Osterr., Tochter Ausland).

**7. Austrian banks have strengthened their capital levels and credit quality has improved** (Figure 6). Austrian banks have raised their capital levels from 11.6 percent common equity Tier 1 (CET1) in 2013 to 15.4 percent in 2018, supported by strong profits. However, the increase has subsided in the last two years, partly due to higher dividend payouts (as documented in Article IV reports). Despite recent improvement, banks' operating profits are dampened by a structurally high cost-to-income ratio (CTI), at around 65 percent in 2018, with Austrian SIs posting CTIs slightly below the euro area (EA) average. Credit quality has improved significantly. Nonperforming loans (NPLs) shrank from 8.6 percent in 2013 to 2.6 percent in 2018. The increase in credit quality was especially pronounced among subsidiaries in CESEE (NPLs declined from 14.0 percent in 2013 to 3.2 percent in 2018). Customer deposits at around 40 percent of liabilities underpin banking system stability.

**8. While in 2018 Austrian subsidiaries in CESEE saw above average profitability, performance has likely peaked.** Profitability increased given a favorable cycle driving down loan-loss provisions at historically low levels. Net interest margin (NIM) has been declining but remains considerably higher than in Austria. Austrian subsidiaries' CTI ratios are lower than at the consolidated level (51 percent) but have been on the rise during the last decade. After the 2012



sustainability guidance<sup>6</sup>, the reliance on local funding has improved considerably, and the share of intragroup liquidity transfers from Austrian parent banks declined from 15 percent of subsidiaries' assets in 2011 to below 9 percent in 2018.<sup>7</sup>

**9. In recent years, the life insurance sector has suffered from low growth, driven primarily by weaknesses in the domestic market.** Premiums in the life segment have steadily decreased (-17 percent in 2014–18) with little new production in the domestic market. Profitability remains under pressure due to low investment returns and increased interest-related provisions. The industry is coping with the challenges through large scale mergers domestically, expansion of cross-border business, and portfolio rebalancing towards less liquid assets. The non-life and health segments are growing steadily (by 4 and 18 percent in 2014–18, respectively). While the coverage ratio of Solvency Capital Requirement (SCR) is higher than the European average<sup>8</sup>, health insurers are exposed to future profitability risk from long-term business.

## C. Key Vulnerabilities and Risks

**10. Structural vulnerabilities include a large and interconnected banking sector, high level of CESEE exposures across banks and insurers, and low domestic structural profitability.** Stress in individual institutions or in Austrian foreign subsidiaries can potentially spread into the domestic financial system due to significant equity participation and collaboration arrangements. Concerns over AML controls expose Austrian banks to operational and reputational risks.<sup>9</sup> As noted in Article IV consultations, structural profitability in domestic operations is on the lower end of the peers' average.

**11. Austrian banks remain exposed to risks from exposures to the CESEE and investors' concerns on fiscal challenges in Italy.** The CESEE region is vulnerable to financial market volatility, capital outflows, and FX swings. Although the stock of foreign currency loans has declined, it is still high and susceptible to home currency depreciation.<sup>10</sup> Despite some successful refocusing of exposures across the region by major Austrian banks, subsidiaries' real estate exposures—especially in Czech Republic and Slovakia—have increased against rising vulnerabilities in real estate markets. While direct exposures to Italy are manageable, at 1.3 percent of foreign claims, worries about sovereign risk could lead to funding pressures from (i) a downgrade in the rating of the Austrian SI

<sup>6</sup> The 2012 sustainability guidance main tools included an increase in banks' capital requirements, the strengthening of the local stable funding base of foreign subsidiaries, and the preparation of recovery and resolution plans. These supervisory measures complemented the 2009 bank stability package which provided capital, liquidity, and guarantees to Austrian banks.

<sup>7</sup> Loan-to-local stable funding ratio has remained stable at around 75 percent, well below the early-warning threshold of 110 percent.

<sup>8</sup> The SCR coverage ratio was around 285 percent in 2018 compared to the European average of 243 percent.

<sup>9</sup> An anonymous complaint filed in March 2019 about potential AML activity by RBI led to a 13 percent share price fall. Equity prices recovered, and no subsequent action took place given lack of evidence.

<sup>10</sup> Following the 2010 FMA Guiding principles, Austrian bank subsidiaries have refrained from granting loans in FX, except in Euro to unhedged households and SMEs in the CESEE.

with an Italian parent; (ii) market contagion through funding markets from common exposures to the CESEE; or (iii) a rise in cross-border intra-group banking flows.<sup>11</sup>

**12. Some risks are building up in real estate, and growing exposure by the financial sector may indicate potential systemic risk.** Household debt—at 87 percent of disposable income—is lower than the EA average, the share of variable-rate mortgages in new loans has declined from 83 percent to 44 percent over the last four years, and FX mortgage loans have continued to decline. Nevertheless, a significant share of new mortgages shows high loan-to-value (LTV) and debt-service-to-income (DSTI) ratios. In parallel, real estate exposures have increased across the financial sector. Housing loans in total assets of banks doubled from 8 percent in 2008 to 16 percent in 2018. The rapid increase in corporate loans by domestic banks has been driven by construction and real estate-related activities, which accounted for half of corporate loans in 2019Q1. The Austrian insurance sector allocates about 8 percent of their total assets to real estate—the highest in the EU. Within the asset management industry, the number of real estate investment funds has doubled in recent years (Figure 9).

## FINANCIAL SECTOR RESILIENCE

### A. Stress Testing Approach

**13. The FSAP team performed a macroprudential stress test in collaboration with the Austrian National Bank (OeNB), considering domestic sectoral linkages and cross-border exposures.** In total, 440 banks were included in the exercise, accounting for over 95 percent of banking system's total assets. The stress test was conducted using regulatory and supervisory data as of end-2018 and included a top-down solvency exercise; a top-down liquidity stress test exercise; and a network exercise.<sup>12</sup> For the solvency stress test, OeNB's permanent stress testing infrastructure (ARNIE) was used with inputs estimated based on FSAP team's satellite models.

### B. Solvency

**14. To assess banks' resilience to severe macrofinancial conditions, the team calibrated two scenarios over a three-year horizon (Annex I).**<sup>13</sup> The baseline scenario is aligned with April 2019 WEO projections. The adverse scenario includes four key sources of systemic risk (Table 2): (i) a sharp weakening in the global outlook resulting in a prolonged growth slowdown in Austria; (ii) a sharp rise in risk premia leading to an increase in lending rates and triggering asset repricing; (iii) a balance sheet recession in CESEE countries amplified by large FX moves; and, (iv) a sharp correction in real estate prices in Austria, resulting in higher impairment charges from lower recovery values upon default. In terms of severity, the adverse scenario implies a deviation of Austrian real GDP growth from its baseline of 6.9 percent by 2021, with a 2.3 standard deviation move in two-year cumulative

<sup>11</sup> The Austrian SI accounts for 10 percent of system assets. Mitigating factors include strong solvency and liquidity positions, and a systemic risk buffer at 2 percent to the banks' vulnerability to systemic events.

<sup>12</sup> See Annex IV for details.

<sup>13</sup> The scenario includes Austrian, global, and CESEE macroeconomic variables across 18 jurisdictions.



real GDP growth rate, and a 20 percent peak-to-trough decline in real estate prices. Output shocks in the CESEE region range between 8.1 and 13.6 percent deviation from baseline by 2021.<sup>14</sup>

**15. The FSAP solvency stress test results were compared against OeNB's results applying team's scenarios to the OeNB's satellite models and toolkit.** The OeNB and FSAP teams collaborated on various aspects, including validation of the FSAP team's results, and both teams' projections are in the same order of magnitude across risk categories.<sup>15</sup>

**16. Banks appear resilient to severe macrofinancial shocks, with most banks meeting the hurdle rates at the end of the stress testing horizon** (Figure 10).

- In the baseline, the system's aggregate CET1 ratio would increase by 2.3 percentage points by 2021 due to banks' revenue-generating capacity.
- In the adverse scenario, the aggregate CET1 ratio would decline by 4.4 percentage points to 11.1 percent in 2021. Five small banks (out of a total of 440) would breach capital requirements, albeit the aggregate capital shortfall is small.<sup>16</sup>
- Credit impairments and lower net interest income (NII) are the key contributors to capital depletion. Credit losses stand at 4.9 percentage points of CET1 under the adverse scenario compared to a 1.0 percentage point decline in the baseline.<sup>17</sup> The NII in the adverse scenario is also lower on average by almost 15 percent for the horizon.
- Stressed non-interest income, net trading income, and market risk losses have a small impact on CET1 depletion. Deteriorating credit quality would drive an increase in risk-weighted assets (RWA) contributing to an additional charge of 0.7 percentage points.
- The negative impact is only partially mitigated by reduced dividend distributions (since loss-making banks do not pay dividends) and lower tax expenses because of projected losses.

**17. While there is broad consistency of impact across O-SII and non-O-SII banks, results suggest heterogeneity in the drivers of capital depletion** (Figures 11 and 12). O-SII banks are relatively more exposed to market risk given their larger fair-value portfolios, and to interest-income shocks given their wider footprint and higher starting NIM (Figure 11). For the smaller banks belonging to the non-O-SII group, equity participation valuation is what drives the difference between the two scenarios. In the baseline, the positive valuation of participations is the main

<sup>14</sup> Under the adverse scenario, GDP contracts by 2.5 percent over the first two years of stress (-0.4 and -2.1 percent in 2019, 2020, respectively). This is more severe than the financial crisis (-2.0 percent GDP over 2009-10) and the 2018 EA FSAP scenario for Austria (-2.0 percent over 2018-19).

<sup>15</sup> OeNB's 2019 Financial Stability Report 38 (December) shows results of the 2019 OeNB system stress test using IMF FSAP scenarios.

<sup>16</sup> Total shortfall under the adverse scenario is approximately EUR 5 million or 0.01 percent of the system CET1 capital.

<sup>17</sup> The 3-year cumulative mortgage loss rate in Austria reaches 1.4 percent. In the CESEE region, the 3-year cumulative corporate PD reaches 17 percent in most countries with Russia and Ukraine reaching values up to 30 percent PD.

contributor to capital generation. Nevertheless, the same factor contributes to the negative result in the adverse scenario, with a negative contribution of 1.9 percentage points against a positive contribution of 1.8 percentage points in the baseline. The reason is that in the Raiffeisen sector the smaller lower-tier entities own the larger higher-tier entities (“inverse ownership”). This scheme enables smaller regional banks to benefit from the net revenue stemming from CESEE region operations of the central entity but acts as a significant amplifier of inward spillovers in a downturn.<sup>18</sup>

**18. The IPS structure acts as a shock absorber for idiosyncratic shocks but may result in inward spillovers in case of a systemic event.** The OeNB’s team conducted an exploratory analysis of the resilience of the two layered IPS structures (regional and federal IPSs).<sup>19</sup> The adverse scenario was used as the base case and additional losses of gradually increasing severity were introduced to the central institution of the Raiffeisen structure. Entities with capital shortfalls were identified and the capital buffers of the IPSs were measured against projected shortfalls and a range of support measures.<sup>20</sup> The results shared with the FSAP team suggest that IPSs are effective in containing risks originating from the smaller institutions of the tiered cooperative structure. However, strong equity linkages between members create vulnerabilities when the stress occurs at a central institution. In the case of idiosyncratic shocks, the presence of an IPS provides additional capital and liquidity buffers that would enhance financial system resilience.

**19. The impact of a low-for-long interest rate environment could lead to a decline in margins, challenging banks’ ability to generate profits.** The analysis assumes a gradual decrease of the 10-year sovereign yield by 80 basis points from end-2018 to September 2019 and unchanged rates after that through 2021. For non-EU CESEE currencies, the scenario assumes constant interest rates at their end-2018 level over the entire three-year horizon. Results suggest system-wide NII would decline by 5 percentage points on average until end-2021.

**20. An additional sensitivity test suggests that concentration risk is contained** (Figure 14).<sup>21</sup> Results suggest that no bank defaults are triggered from losses on the largest exposure and capital losses would be moderate (2 percent of RWAs) upon the default of three largest on aggregate exposures. Results are highly sensitive to the network structure of the cooperative sector. Performing the test on gross exposures, 5 percent of aggregate capital would be depleted following the default of the largest counterparty, although the system’s CET1 ratio would remain above the regulatory minimum even after the default of the ten largest exposures. Results are conservative as the simulation does not include the support provided by the IPS structure.

<sup>18</sup> Inward spillover refers to contagion risks in the tiered structure of the cooperative sector from upper tier banks to lower tier banks.

<sup>19</sup> The approach is relatively complex and of exploratory nature, since it requires the initiation of repetitive runs for the entire banking system in an operating mode that resembles reverse stress-testing.

<sup>20</sup> The sequencing of support measures considers the presence of overlapping regional and federal IPSs and replicates contractual obligations.

<sup>21</sup> The test used the large exposure dataset before credit risk mitigations by net of exemptions. Exposures to the central bank, the central government, regional governments, and within IPSs, are excluded. All exposures were subject to an LGD of 50 percent.

## C. Liquidity

**21. Top-down quasi-LCR and cash flow-based tests covered the entire banking system.** The team conducted a Basel III quasi-LCR test over a period of 30 days (by aggregate currency position and by significant currency), and a cash flow-based liquidity test over a three-month period. Both tests considered a set of scenarios reflecting a systemic liquidity stress episode. After each scenario, liquidity conditions for all banks were simulated, and the relevant liquidity metrics calculated. An exploratory analysis of the current NSFR proxy was also conducted. The NSFR stress tests conducted were exploratory, given that compliance with NSFR will only come into force in 2021. The system-wide coverage of banks also enabled the evaluation of additional liquidity protection offered by contractual liquidity support commitments of the two-layered IPS scheme in the Raiffeisen sector.

**22. The banking system is resilient to sizeable withdrawals of funding** (Figure 15). The asset-weighted average LCR stands at 164.7 percent under Basel-prescribed assumptions. When additional funding outflows are considered, the average LCR continues above the 100 percent threshold. Under the severe scenario which includes a market price shock, the average LCR declines to 104.3 percent. By significant currency, the EUR LCR declines from 145.8 percent to 96.9 percent under the severe scenario. The system-wide USD LCR average, at 56.6 percent, decreases to 44.1 percent in the severe scenario. However, USD is not a significant currency for the overall Austrian banking system and the overall size of USD outflows remains manageable at 6.1 billion. There appears to be ample space for banks to accommodate outflows, given the stable deposit-based funding structure, solid buffers in security holdings, and significant short-term inflows.

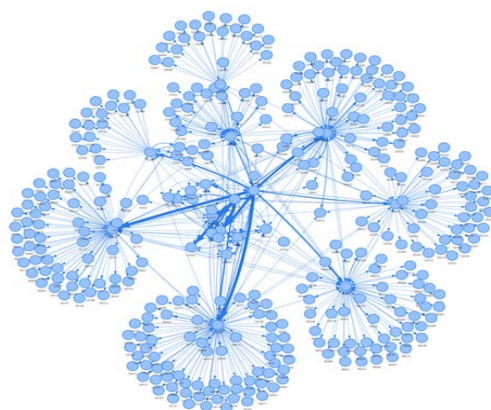
**23. These results are supported by findings over longer periods.** The cash-flow-based tests over a three-month horizon identified small liquidity shortfalls for some small banks under severely adverse conditions. However, even in the extreme case, the combined shortfall of EUR 1.5 billion is manageable given OeNB's ability to provide liquidity either through standard facilities or extraordinary measures. The aggregate net liquidity position of the banking system—measured as counterbalancing capacity minus net outflows relative to system assets—remains positive across scenarios. It declines from the initial 21 percent of system assets to 8.8 percent in the most adverse scenario. The asset-weighted aggregate NSFR proxy stands at 122 percent and declines to 112 percent under stress. Only a small proportion of the system (2.2 percent of system assets) has an NSFR below 100 percent, this share increases to over 28 percent of system assets under stress.

**24. The IPS structure enhances the system's resilience to liquidity risks.** The cash flow-based tests show that, in the severely adverse scenario, some regional IPSs have a net liquidity shortfall. However, the additional liquidity buffers at the federal IPS layer are enough to support all liquidity needs of the regional IPSs. To analyze the role of the Raiffeisen IPS scheme in managing liquidity risks, the cash flow-based test was repeated in a scenario that assumes no additional IPS liquidity protection. Under this scenario, individual Raiffeisen banks withdraw contributions from the IPS and all contractual obligations to support other institutions in the Raiffeisen system are assumed to be terminated. In this scenario, banks can only rely on their own liquidity buffers. The results show that in the absence of IPS support, the combined liquidity shortfall increases to EUR 1.7 billion (compared to 1.5 billion with support arrangements in place) but remains small relative to the size of the system.

## D. Contagion

**25. The banking system is concentrated in clusters of many small banks around a few important nodes (Figure 3), and the network analysis assessed whether a bank's outright default might cause material losses to the entire banking system.** The analysis included a credit shock simulation whereby a credit counterparty default erodes the lender's capital buffers, and a funding shock simulation whereby the default of a funding counterparty induces a liquidity shortfall and triggers losses through fire sales.

**Figure 3. Austria: Austrian Banking System Network**



Source: OeNB on Austria's central credit registry data.

The edges are shown for interbank exposures above EUR 25 million on a consolidated level. Therefore, intragroup exposures in the savings sector are netted out.

**26. The analysis reveals the potential cascade effects induced from banks' hypothetical defaults** (Figure 16).<sup>22</sup> Results are very sensitive to the treatment of exposures in the cooperative sector. When the network structure is based on gross exposures (including related-party exposures in the cooperative sector), both contagion and vulnerability index strongly increase.<sup>23</sup> The maximum contagion index from O-SIIs rises from 1.2 percent to 41 percent capital depletion, with the median impact increasing from 0.5 percent to 1.1 percent. The analysis was re-run using large exposure data and bank-specific calibrated parameters using the CoMap methodology.<sup>24</sup> The median contagion index from Austrian O-SII banks to the system is estimated at 0.8 percent with a wide distribution, ranging between 0.5 and 2.1 percent at the 10<sup>th</sup> and 90<sup>th</sup> percentile, respectively. The effects are highly skewed pointing at the central role played by the central institution in the tiered banking structures.

**27. Outward and inward spillovers between Austrian banks' and foreign banks in the EA and the CESEE appear manageable** (Figure 17). The FSAP team examined interbank cross-border

<sup>22</sup> The analysis is based on Austria's central credit registry, which covers credit instruments with an exposure above EUR 350,000. The registry does not identify liquidity reserves kept by the nodes at the central entity which are not subject to counterparty credit risk, limiting the ability to generate accurate LGD estimates across exposure types.

<sup>23</sup> The contagion index shows the percent of total capital impairment in the system due to the failure of each bank. The vulnerability index is the average percent capital impairment for a bank due to the failure of other banks.

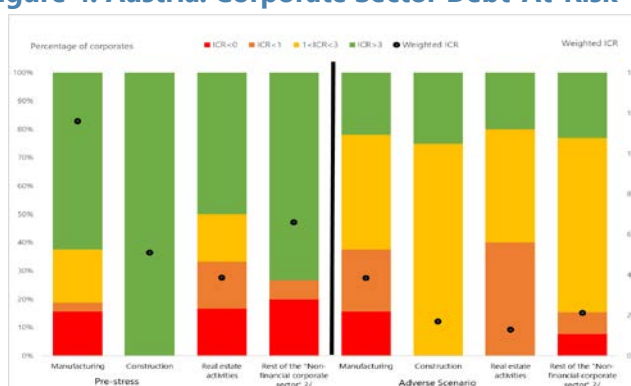
<sup>24</sup> The analysis was based on Covi, G., Gorpe, Z., and Kok, C. (2019), "CoMap: mapping contagion in the euro area banking sector", ECB Working Paper No. 2224.

contagion of Austrian banks using CoMap. Results suggest that the median contagion from Austrian O-SIs to the EA is low at 0.12 percent capital depletion whereas outward spillovers to the CESEE are limited to a few Austrian banks. Inward spillovers to Austrian banks from defaulting banks in the EA and CESEE are negligible.

## E. Corporate Sector Risk

**28. The debt servicing capacity of the Austrian corporate sector has improved, although the real estate and construction sectors are most exposed to financial risks** (Figure 8). Austrian corporates' debt-to-equity ratio has remained higher than the EA average, but the debt-to-income ratio stands below the EA average. The low interest rate environment, a high share of NFC variable-rate loans, and robust operating profits have contributed to improved debt servicing capacity. FX loans continued to fall and currently stand at only 2 percent. At the same time, the high share of variable-rate loans exposes the sector to interest rate shocks. An interest coverage ratio (ICR)-based test was conducted to assess the affordability risk of Austrian firms.<sup>25</sup> The dispersion in ICRs across the 57 listed Austrian NFCs suggests that certain leveraged sectors are more vulnerable to shocks than others.<sup>26</sup> Under an adverse scenario, the real estate and construction sectors appear more vulnerable. This is reflected in a much lower post-shocked weighted ICR of the real estate and construction sectors compared to other sectors (Figure 4). These vulnerabilities can adversely affect the banking sector, as almost half of banks' loans to NFCs in 2021Q1 went to real estate and construction.

**Figure 4. Austria: Corporate Sector Debt-At-Risk <sup>1/</sup>**



Source: Orbis and IMF Staff calculations. 1/ Data as of 2017Q4; 2/ Sectors included in the "Rest of the Nonfinancial corporate sector" are mining and quarrying; electricity, gas, steam, and air conditioning supply; wholesale and retail trade; transportation and storage; information and communication; professional activities; and administrative activities.

## F. Exploratory Analysis: Solvency Risk and Macroprudential Policy

**29. The FSAP used a semi-structural model to project losses on banks' mortgage portfolios and to analyze the potential mitigating role of different macroprudential policies.** The model was modified to incorporate Austria-specific characteristics and used to simulate mortgage default

<sup>25</sup> The lower the ICR, the higher the corporate's debt burden and the greater the probability of bankruptcy or default. A lower ICR means less earnings are available to meet interest payments.

<sup>26</sup> The importance of the stock market in corporate finance is limited. This analysis is based on publicly listed Austrian companies.

rates and losses in the stress test scenarios. The drivers of borrowers' debt servicing capacity included changes in i) house prices, ii) income, iii) unemployment rate, and iv) mortgage interest rates. The results suggest that losses on mortgage portfolios would remain relatively moderate in the adverse stress scenario, although would increase more than threefold compared to the baseline.

**30. The use of macroprudential borrower-based limits could reduce the losses on mortgage portfolios in the adverse scenario.** To study the impact of macroprudential borrower-based limits, the portfolio of mortgages was simulated for eight quarters into the future, before the adverse stress scenario was triggered. It was assumed that during this time the macroprudential limits would push the LTV, DTI, and DSTIs of new mortgages towards safer levels in terms of affordability, while some of outstanding loans would mature. In this counterfactual scenario, banks' losses on mortgage portfolios decline by 35 percent if a combination of LTV-DSTI limits of 80 and 40 percent, respectively, with a speed-limit of 10 percent were introduced. The losses are around 25 percent smaller if the speed-limit is increased to 20 percent instead. Results confirm that the credit quality of the most recent loan vintages is the key driver of total mortgage portfolio losses, which is also broadly consistent with the observed worsening in the portfolio risk profiles in recent years.

## G. Key Findings and Recommendations

**31. Given the substantial footprint and complexity of the banking system, the stress testing function should be further strengthened.** Stress testing is fundamental in assessing, evaluating, and informing the authorities on the impact of policy decisions on the financial system. Stress tests are resource-intensive, requiring specialized staff, systems and IT infrastructure, and authorities should ensure that resources and organizational structure are adequate. Stress testing should be further strengthened to fully integrate sensitivity, contagion, and interconnectedness analysis tools. The existing framework should be further developed to capture second round effects, behavioral elements, dynamic balance sheet stress tests, and separation of the prudential and accounting layers. Finally, it is key to increase the level of modelling granularity to fully capture the diversity of risks facing the banking system (for example, by geographical breakdown).

## FINANCIAL SYSTEM OVERSIGHT

**32. Austria's financial oversight is characterized by a shared responsibility both within the framework of the SSM, and among the FMA, OeNB and Federal Ministry of Finance (BMF).** Responsibilities for banking sector oversight are shared between the integrated financial supervisory authority —the FMA —and the OeNB. With the establishment of the SSM, supervision of the seven SIs is directly exercised by the ECB, which also has a role in oversight of supervision of LSIs.<sup>27</sup> The FMA is responsible for the supervision of the insurance and securities markets sectors<sup>28</sup> while the OeNB is responsible for the oversight of payment systems. The BMF is responsible for the development and definition of the legislative framework, which is then adopted by the Austrian

<sup>27</sup> The SSM supervisory framework was covered in detail in the Euro Area FSAP (see [Euro Area: Financial Stability Assessment](#)).

<sup>28</sup> Independent insurance agents and brokers are overseen by the Federal Ministry of Digital and Economic Affairs.



Parliament. The government proposed, in May 2019, a reform of the supervisory framework for banking, which has been officially put on hold because the change in government (Box 1).

**33. The FMSB plays a central role in terms of macroprudential oversight, benefitting from the support of OeNB's work.** The FMSB was established in 2014 to strengthen the cooperation in macroprudential supervision and to safeguard financial stability. The FMSB meets four times a year, and its members are the OeNB, the FMA, the Fiscal Advisory Council and the BMF, the latter also chairing the proceedings. The FMSB discusses facts relevant to financial market stability, and issues expert opinions, policy action recommendations and warnings about financial stability risks. The FMA is designated by law as the competent authority for applying macroprudential instruments, and it implements FMSB recommendations on a comply-or-explain basis. The OeNB is tasked with performing analysis for systemic risk identification, preparing preliminary recommendations to be voted by the FMSB, and providing the secretariat for the FMSB.

## A. Macroprudential Policy Framework and Tools

**34. The institutional framework for macroprudential policy is sound but could be strengthened to ensure effective and timely action.** The framework encourages cooperation and coordination across different institutions. To benefit from OeNB's operational independence and the synergies offered by its role in monitoring and analyzing financial stability risks, the FMSB could be chaired by the OeNB, and its representation in the FMSB should be increased.<sup>29</sup> Adequate resources are needed to implement responsibilities related to European policy coordination.

**35. The systemic risk monitoring framework is advanced but could be enhanced in some areas, including by closing data gaps.** The analysis of real estate-related risks could be deepened and a more systematic analysis of interlinkages between different financial sector segments through common exposures is desirable. Several ongoing initiatives by the OeNB and FMA will increase the granularity of corporate and household lending data. However, data gaps remain. Authorities are encouraged to collect CRE data, gather detailed data on residential real estate exposures, enhance the granularity of CESEE exposures, and broaden the collection of NFC indicators, including on credit quality, profitability, debt and firm characteristics.

**36. The expected weakening of credit demand and still negative credit-to-GDP gap justify the current countercyclical capital buffer (CCyB) of 0 percent** (Figure 9). In terms of sectoral developments, growth of domestic bank credit to NFCs has picked up considerably over the last couple of years, driven primarily by real estate activities. If the strong credit growth in the NFC sector continues and credit in the real estate picks up, increasing the CCyB should be considered. Going forward, the planned introduction of *sectoral* macroprudential capital buffers to the European macroprudential framework may help address sector-specific risks stemming from credit growth.

<sup>29</sup> Currently OeNB and FMA are represented by two out of six voting FMSB members. The BMF, which also chairs the FMSB, has two representatives, and two members come from the Fiscal Advisory Council, which does not have a financial stability mandate.

**37. Given the build-up of risks in residential real estate, authorities should be prepared to introduce binding borrower-based limits.** The authorities took steps to contain deterioration in risk profiles of new mortgages, such as the September 2018 guidance on sustainable lending standards. However, a considerable share of new mortgages still does not comply with the recommended DSTI limit or the minimum down-payment. Considering increasing overvaluation pressures and continued low interest rates, the introduction of hard limits could help ensure that mortgage lending risk remains contained. For example, a combination of limits on maximum LTV and DSTI ratios, along with speed limits<sup>30</sup>, would allow the FMSB to better control the volume of loans with high indebtedness indicators, while allowing banks some flexibility in granting loans to customers.<sup>31</sup>

**38. The authorities use a sophisticated framework based on complementarities between the O-SII and SyRB buffers to address risks from structural vulnerabilities, and the framework could be further expanded to reflect inward contagion.** The identification of institutions subject to the O-SII buffer is based on EBA guidelines, but in 2018 the buffer was extended to the unconsolidated level. As of January 2019, seven banks were subject to an O-SII buffer (ranging from 0.5 to 2 percent of RWA) at the consolidated level, and seven also at the unconsolidated level. The SyRB buffer consists of i) the systemic vulnerability buffer of up to 1 percent of RWA, capturing vulnerabilities related to an institution's interconnectedness; and ii) the systemic cluster risk buffer of up to 1 percent of RWA, capturing risks related to concentration of exposures in the CESEE region. As of January 2019, 13 banks were subject to a SyRB buffer at the consolidated level, and 7 also at unconsolidated level. Nevertheless, inward contagion risks may warrant enhanced monitoring capacity and oversight by authorities, given the significant implications for financial stability.

## B. Banking

**39. The implementation of EU-level regulations and guidance has enhanced the regulatory and supervisory framework since the last FSAP, but some areas still require attention.** The Banking Act (BWG) was amended to incorporate EBA Guidelines on internal governance and suitability of members of the management body and key function holders. FMA's regulation on credit risk management issued in 2013 reflects key EU Directives. The new Bank Recovery and Resolution Act (BaSAG) and the Deposit Guarantee Schemes and Investor Compensation Act (ESAEG) also improved the early intervention powers of the FMA. Nevertheless, as noted in the 2013 FSAP, FMA's operational independence might be endangered due to the presence of industry representatives on the Supervisory Board, the BMF's role in approving FMA regulations—including for macroprudential oversight—the BMF's very broad right to gather information from the FMA, and inadequate legal protection for supervisors (see Annex III).

**40. A detailed framework for early intervention and application of supervisory measures has been established, but most triggers are quantitative and based on risks and violations that**

<sup>30</sup> A speed limit of 10 percent means that 10 percent of new mortgage flows do not have to comply with the macroprudential limit.

<sup>31</sup> Supervisors would need to monitor the aggregate credit quality of the portfolio to address potential leakages across risk buckets.



**have already materialized.** BWG establishes that FMA may impose supervisory measures when there is evidence that a bank will breach Capital Requirements Regulation (CRR) or Capital Requirements Directive (CRD) within 12 months. To facilitate this determination, it is recommended that more structured internal guidance is developed to aid supervisory staff in making decisions based on qualitative factors before impacts on the bank's performance materialize.

**41. The legacy role of State Commissioners is not compatible with international standards and needs to be reconsidered.** As a legacy of the time when the BMF was directly involved in banking, commissioners are full-time employees of the BMF, serve in more than one board, and can veto supervisory board decisions. Based on international corporate governance standards, the role of the supervisory board has become more intrusive and technical and requires a greater interaction between the supervisors and the board.

**42. The regulatory framework for related-party risk and significant investments needs enhancement, which is particularly important in the highly interconnected Austrian financial system.** There is no requirement that transactions with related parties should not be undertaken on market terms, the FMA does not have the power to set aggregate limits or require collateralization for such exposures, and standards or regulations for intra-group transactions have not been adopted. In addition, there is no requirement for ex-ante approval or notification of investment by LSIs in nonfinancial undertakings. Transactions with sister banks, affiliated nonfinancial companies and group members should be monitored to ensure they are priced on market values, performed in a safe and sound manner, and to avoid shifting of problem assets between entities. Risks from entities in the wider group, foreign or domestic, and including nonfinancial entities, need to be considered, and investments which present obstacles for consolidated supervision should not be allowed.

## C. Insurance

**43. The FMA has implemented Solvency II with enhanced data quality and analytical capacity, but maintenance requires adequate resources.** Implementation of Solvency II was relatively smooth, and all insurers met capital requirements without relying on transitional and Long-Term Guarantees (LTG) Measures in 2017. New risk management and reporting requirements helped FMA and insurers to monitor risks more closely and accurately. FMA has made significant efforts to improve data quality and analytical capacities and has established stress testing as a yearly practice. Nevertheless, Solvency II needs ongoing validation and scrutiny by supervisors, which require resources with skills and expertise. Without proper and ongoing monitoring, there is a significant risk of manipulation and delay of regulatory actions. In addition, asset allocation is shifting to less liquid assets, which makes reliable valuation more difficult. The FMA and the OeNB jointly validate internal models for market risk. This close cooperation and adequate resources are key to ensure the reliability of models.

### Box 1. Institutional Reforms in Banking Oversight

In November 2018, the government announced the intention of consolidating banking supervision within the FMA. The stated aims of the reforms were to improve the efficiency of the supervisory system, reduce duplication, speed up decision making, establish clear points of contact for financial market participants, and strengthen “service orientation”. Draft legislation released in April 2019 kept the main thrust of the reforms, but government changes have caused the reforms to be put on hold.

The FMA would assume responsibility for on-site inspections and off-site analysis from the OeNB and would become the sole point of contact on day-to-day supervision, the FMA would have sole “ownership” of content of the supervisory reporting but the OeNB would retain responsibility for data collection, processing and quality assurance.

The FMA’s Supervisory Board would be reduced from the ten members to six and would take on responsibilities for strategic planning and establishing priorities for supervision. Two of the members would be appointed by the OeNB, and the other four by the BMF, two of whom would be independent experts with no current affiliation with regulated entities. The two-person Executive Board would be reduced to one member, with termination of the OeNB appointee.

The FMA would also establish a Financial Market Advisory Board, composed of experts from relevant ministries, industry, academia, the stock exchange and the OeNB, to advise on matters related to financial markets, and draw up proposals on supervisory topics. The Board would be able to seek opinions and make its proposals public, including on priorities for regulation.

The reforms would increase the dependence of the FMA on government funding. Currently, the OeNB’s costs for prudential supervision are largely borne by the OeNB itself; the FMA’s costs are largely covered by supervisory levies. Since there is no intention to increase these levies, the increased costs incurred by the FMA from the absorption of OeNB responsibilities would need to be funded by the government budget. The FMA and the OeNB would be required to implement cost-efficiency programs, and the reforms included an increase in the OeNB’s profit distribution to the government from 90 to 95 percent to help cover costs.

The OeNB would retain some involvement in supervision since the governor would continue as a member of the Governing Council of the ECB, and an OeNB representative would remain as a non-voting member on the ECB’s Supervisory Board. The OeNB’s responsibilities for financial market stability would be unchanged. The number of OeNB representatives on the FMSB would increase from one to two.

**44. The prolonged low interest rate environment challenges the insurance sector.** The duration gap between asset and liabilities is one of the highest among the European peers. The average guaranteed rates remain high, while the investment returns continue to be declining. In addition, Solvency II allows insurers to recognize expected profits in future premiums as part of their own funds, and these make up a substantial part of the own funds of the two largest insurance groups. The reliance on future profitability to meet capital requirements challenges the entities’ business models over the medium term, especially that of composite insurers.<sup>32</sup> It is recommended that the FMA conducts more targeted stress testing on the segments/business lines for which future profitability is material. Moreover, supervisors should clearly communicate to higher risk insurers

<sup>32</sup> The average share of expected profits in future premiums relative to own funds is about 12 percent, which is close to the European average. While the largest Austrian insurance group’ reliance on future profits reaches over 40 percent, this is not deemed to be systemic given the small size of the insurance sector.

their concerns regarding major strategic issues such as business model shifts. Objective actions should be required, such as capital add-ons or other measures to address medium-term uncertainty.

## D. AML/CFT

**45. Significant progress has been made since the 2016 AML/CFT Mutual Evaluation to align Austria's framework with the FATF standards, including recent standards on VA/VASPs.** Several initiatives, such as amendments to the Financial Markets Anti-Money Laundering (FM AML Act) and sectoral laws covering DNFBPs, have led to significant enhancements of the legal and regulatory framework. A Register of Beneficial Owner of Companies, other Legal entities and Trusts was created in 2017 (BORA Act) in implementation of the 4<sup>th</sup> EU Anti-Money-Laundering Directive (AMLD). In July 2019 the BORA was amended to transpose the 5<sup>th</sup> AMLD. These initiatives resulted in upgrades of technical compliance ratings by the FATF in the two follow-up reports. The FM AML Act has recently been amended to assign the FMA the responsibility over the registration and monitoring of VA/VASPs. The law defines VA/VASPs following the FATF definition, but effective implementation will need continuing efforts.

**46. The authorities have demonstrated strong commitment to strengthening banking AML/CFT supervision and addressing cross-border related risks, but there is room for improvement.** The FMA has adopted a risk-based approach to AML/CFT supervision and has developed an offsite risk rating tool to classify financial institutions in terms of ML/TF risk, which forms the basis for its supervisory strategies and resource allocation. Authorities should consider revising the approach to onsite activities to ensure that even lower risk banks are subject to onsite inspections on a more regular basis. In addition, the authorities should continue to place greater focus on monitoring cross-border risks, and effectively implementing the Customer Due Diligence (CDD) obligations to ensure that financial integrity risks are properly mitigated. In addition, a review of the National Risk Assessment should help developing additional measures to mitigate ML/TF risks, including from exposures to CESEE countries.

**47. The current legal and regulatory framework generally allows for cross-border cooperation with EU/EEA countries, but legal obstacles hinder information exchange with some third countries.** The information sharing with authorities in third countries is only allowed if they are subject to or have agreed to an equivalent level of professional secrecy to the respective European legal acts (EBA assessment of equivalence). Given this limitation, the authorities should ensure and closely monitor that strong AML/CFT controls are applied at the group level and in case of concerns, apply remedial actions. Rules on confidentiality, professional secrecy, data protection and information exchange should be analyzed on a case-by-case basis.

# CRISIS MANAGEMENT AND FINANCIAL SAFETY NETS

## A. Institutional Framework

**48. While institutional arrangements for crisis management are generally sound, improvements can be made.** Although supervisory and resolution functions are operationally separated within the FMA, decision making is unified, and the authorities should consider separating

them to avoid potential or perceived conflicts of interest and provide an effective backstop for timely action. It is recommended that an interagency body should be mandated to ensure that each authority has contingency plans and a regular testing program, that the individual plans dovetail into a coherent national plan, and that interagency tests are regularly conducted.

## B. Recovery, Resolution, and Financial Stability

**49. For resolution purposes, eleven Austrian banking groups are under the remit of the Single Resolution Board (SRB) and the others are under the FMA.** The FMA, supported by the OeNB, has grouped the banks under their remit into three categories for resolution planning purposes. The first category consists of 16 banks for which “fully-fledged” resolution plans are prepared. The second category, which needs to have “proportionate” resolution plans, has “deposit-focused” banks for which the use of bankruptcy may be credible and feasible in the case of idiosyncratic problems but likely not in a time of broader financial instability or system-wide events. The third category of banks consists of 404 “harmonized” banks for which use of bankruptcy proceedings is deemed credible and feasible without putting in jeopardy resolution. In the third category the resolution strategy is use of bankruptcy proceedings.

**50. The envisioned MPE approach to bail-in for two Austrian groups would mitigate inward spillovers from risks in the CEESE region, but implementation is still underway.** For these groups, bail-in under an MPE approach involving multiple resolution groups has been deemed more appropriate.<sup>33</sup> The MPE resolution approach would in principle allow the subsidiaries to absorb losses, mitigating contagion into Austria, but the effectiveness of the mechanism depends on the subsidiaries being able to issue Minimum Requirement for own funds and Eligible Liabilities (MREL) into the local market. Given less-developed capital markets in some jurisdictions, there may be limited capacity to issue MREL-eligible debt, and the small size of some banks makes issuing into international markets not feasible. The FMA and SRB recognize this constraint and are considering assisting national resolution authorities by providing a transitional period during which required MREL could be held by a group entity in Austria, with an agreed phase-out during which internally issued-MREL would be replaced by MREL instruments issued to third parties.

**51. Regarding institutions under SPE, close collaboration is needed with the home supervisors and European authorities to ensure system-wide risks are contained and financial stability preserved.** Authorities must think through in advance how they would deal with a situation where capital or liquidity is directed to a parent bank. The financial crisis contingency plan should include this situation. Eventually the national plan should address how the authorities would interact with the European authorities in the case of a system-wide crisis involving other EA jurisdictions to ensure financial stability and protect the Austrian economy.

**52. Overall, recovery and resolution planning are well advanced but additional flexibility could be provided in the bankruptcy regime.** For the non-systemic banks, authorities should

<sup>33</sup> In simplest terms, should losses in the subsidiary impair its viability, it would be put into resolution and recapitalized via bail-in within the jurisdiction. Losses would be passed to the parent only to the extent of the parent’s equity investment and any write-down or write-off of bailed-in debt of the subsidiary that the parent held. Other loss absorption and/or sources of recapitalization funds would come from other creditors.

consider amending the bankruptcy regime to explicitly provide the ability to transfer a non-systemic bank's covered deposits and its sound assets to an acquirer.

**53. As noted in the EA FSAP, ensuring that a bank in resolution can maintain enough liquidity is another key challenge.** The OeNB's Emergency Liquidity Framework (ELA) framework could be enhanced by formulating a policy on lending to a bank prior to and within resolution, and by expanding the types of assets eligible as collateral—which could be adjusted if required once the EA framework for liquidity in resolution is completed. The BMF should take steps to be able to support funding in resolution without requiring additional legislation at the time of need.

## C. Deposit Protection

**54. Deposit guarantee arrangements are sound and have suitable funding, but steps can be taken to strengthen deposit protection arrangements and their integration with the overall crisis management and safety net regime.** There are two DGSs. The Einlagensicherung Austria GmbH is the so-called “uniform DGS” for Austrian banks that are not members of the second DGS, the Sparkassen-Haftungs GmbH. The DGSs have the right to access the funds of the other DGS (including contingent contributions) should the available resources of the fund and the contingent contributions from its members prove insufficient in amount. As a last resort both schemes can borrow, and the BMF may guarantee such borrowing, though no *ex ante* guarantee is in place and the BMF would need to table legislation to provide for it. The DGSs do not have the power to finance the transfer of assets and liabilities in the context of bankruptcy proceedings. The BMF should secure *ex ante* standing authority to provide a guarantee for the borrowing of either DGS in case of last resort.<sup>34</sup>

## D. Insurance Resolution

**55. Austria's ongoing discussions on an insurance resolution framework are a welcome step, and going forward, FMA's powers should be substantially reinforced.** The team supports the formal adoption of the overarching principle that losses must be first borne by shareholders and other creditors, before they affect policyholders' and beneficiaries' claims. FMA restructuring powers should be extended to all kinds of insurance and all types of creditors. It should also be given the power to mandate a portfolio transfer. A strong resolution framework, building on the existing Deckungsstock<sup>35</sup>, should be supported by a combination of different funding arrangements that provide adequate private ex-ante resources for resolution purposes and benefit from the credible support of provisions for public funding.

**56. In the short-term, requesting pre-emptive and proportional recovery plans from selected insurers is strongly recommended.** This requirement should be imposed on selected

<sup>34</sup> Alternatively, the BMF could be provided the power to lend directly to the schemes.

<sup>35</sup> The Deckungsstock is an internal pool of funds insurers must hold in a specific register monitored by a trustee. The assets may only be used for the benefit of policyholders and beneficiaries in case of bankruptcy or runoff.

insurers based on microprudential and macroprudential considerations, with proportional requirements regarding content and granularity, preparation timeframe, and periodicity of updates.

Table 2. Austria: FSAP Risk Assessment Matrix

Nature (Source) of Main Threats	Overall Level of Concern	
	Likelihood of Realization of Threat in the Next 1–3 Years (high, medium or low)	Expected Impact on Financial Stability if Threat is Realized <i>Risk assessment: high, medium, or low</i> <i>Supervisory assessment: amplifying (A), neutral (N), or mitigating (M)</i>
1. Contagion from CESEE countries (Regional)	<p><b>Medium</b></p> <ul style="list-style-type: none"> <li>CESEE countries are subject to boom-bust cycles. They are vulnerable to a deterioration in investor sentiment, asset volatility, capital outflows, FX swings, and geopolitical risk.</li> <li>Some countries are exposed to a sharp decline in commodity prices and waves of international sanctions.</li> <li>Concerns over the adequacy of AML controls on foreign branches and subsidiaries within CESEE countries exposes Austrian banks to operational and reputational risk.</li> </ul>	<p><b>Risk Assessment: High</b></p> <ul style="list-style-type: none"> <li>Austrian banks' exposure to the CESEE region reached 24 percent in 2018. Foreign currency loans represent 25 percent of exposures (80 percent EUR, 10 percent in CHF, 9 percent in USD). Austrian banks source 42 percent of profits from CESEE.</li> <li>A sharp slowdown in CESEE countries, and FX depreciation would lead to higher NPLs and lower profitability.</li> <li>Breaches of AML obligations can lead to fines and sanctions increasing operational risk expenses, lower equity market valuations, and a spike in funding costs.</li> </ul> <p><b>Supervisory assessment: Neutral</b></p> <ul style="list-style-type: none"> <li>Banking sector oversight: Weak requirements on transactions with related parties, major acquisition, and financial integrity add risks from CESEE exposures. <b>(A)</b></li> <li>Macroprudential: SyRB for CESEE cluster risk increases capital resilience. <b>(M)</b></li> <li>Crisis management: MPE for two large international banks reduces the potential to spread contagion. <b>(M)</b></li> </ul>
2. Sharp rise in risk premia (Global)	<p><b>High</b></p> <ul style="list-style-type: none"> <li>An abrupt deterioration in market sentiment (e.g., prompted by policy surprises, renewed stresses in emerging markets, or a disorderly Brexit) could trigger risk-off events such as recognition of underpriced risk.</li> <li>Higher risk premia would cause higher debt service and refinancing risks; stress on leveraged firms, households, and vulnerable sovereigns; disruptive corrections to stretched asset valuations; and capital account pressures—all depressing growth.</li> </ul>	<p><b>Risk Assessment: Medium</b></p> <ul style="list-style-type: none"> <li>Higher interest rates would increase borrowers' income gearing and refinancing risks particularly for high-leveraged firms and households. The effect would be larger for borrowers with variable-rate loans: 80 percent (44 percent) of new loans for corporates (households).</li> <li>Significant asset price changes would impact the fair valuation of banks' financial investments.</li> </ul> <p><b>Supervisory assessment: Neutral</b></p> <ul style="list-style-type: none"> <li>Banking sector oversight: Oversight of NPLs and foreborne exposures has strengthened but a look-back approach to default risk could hinder timely supervisory action. <b>(A)</b></li> <li>Macroprudential: the timely activation of the CCyB would help increase bank resilience through the cycle. <b>(M)</b></li> <li>Crisis management: Banks' recovery plans are mature and tested. <b>(M)</b></li> </ul>
3. A sudden correction in the Austrian real estate market (Domestic)	<p><b>Medium</b></p> <ul style="list-style-type: none"> <li>Real estate prices have increased rapidly in Austria over the last 5–6 years and are estimated to be overvalued by around 10–15 percent.</li> <li>The share of foreign currency housing loans is high compared to Austria's peers.</li> <li>There have also been signs of easing in banks' lending standards in household loans with an increase in high risk mortgages (high LTV and DTI ratios).</li> </ul>	<p><b>Risk Assessment: Medium</b></p> <ul style="list-style-type: none"> <li>A drop in real estate prices, would result in higher impairment charges for banks, caused by defaults or delayed loan repayments by highly leveraged households and construction firms.</li> <li>Lower house prices could depress domestic demand through reduced consumption, hitting banks' profits further.</li> <li>The impact is lessened by the low exposure of Austrian banks to housing loans in Austria at 16 percent of assets.</li> </ul>

Table 2. Austria: FSAP Risk Assessment Matrix (concluded)

		<p><b>Supervisory assessment: Mitigating</b></p> <ul style="list-style-type: none"> <li>Banking sector oversight: FMA minimum standards of the granting of FX and RPV loans (2013), revised in 2017, helped decrease default risk in mortgage loans. (M)</li> <li>Macroprudential: 2018 FMA's guidance on sustainable lending standards in real estate financing has strengthened bank supervisory dialogue to prevent a deterioration in underwriting standards. (M)</li> <li>Crisis management: A synchronized decline in regional real estate prices could spread contagion through the DGS system. (A)</li> </ul>
4. Weaker-than-expected global growth (Global)	<p><b>Medium</b></p> <ul style="list-style-type: none"> <li>Idiosyncratic factors in the U.S., Europe, China, and stressed emerging markets feed off each other to result in a synchronized and prolonged growth slowdown: <ul style="list-style-type: none"> <li>U.S.: Confidence wanes against a backdrop of a long expansion with stretched asset valuations, rising leverage, and policy uncertainty, leading to weaker investment and a more abrupt closure of the output gap.</li> <li>Europe: Weak foreign demand, Brexit, or concerns about some high-debt countries makes some EA businesses delay investment, while faltering confidence reduces private consumption. Inflation expectations drift lower, and the region enters a prolonged period of anemic growth and low inflation.</li> <li>China: In the near term, further escalation in trade tensions not only reduce external demand, disrupt supply chains, and depresses confidence and investment, but potentially also trigger tighter financial conditions, a sharp downturn in the property market, renewed PPI deflation, and a drop in commodity prices. In the medium term, weaker external demand, the potential reversal of globalization, and the increasing role of the state could weigh on growth prospects. Moreover, excessive policy easing—reversing progress in deleveraging and rebalancing—increases risks over time of a disruptive adjustment or a marked growth slowdown.</li> <li>Large stressed emerging economies: Policy missteps, idiosyncratic shocks, and/or contagion prevent expected stabilization or recovery in stressed economies from materializing, generating negative spillovers and reducing global growth.</li> </ul> </li> </ul>	<p><b>Risk Assessment: Low</b></p> <ul style="list-style-type: none"> <li>A widening in Italian spreads would depress asset valuations of Italian government bonds, even though Austrian banks' exposure to Italy is limited (1.3 percent of total foreign claims). Another channel of contagion is through funding markets as the third largest Austrian banks is a subsidiary of an Italian G-SIB. Adverse developments in Italy could lead to financial distress through higher funding costs.</li> <li>Austria is a very open economy, with exports comprising more than 50 percent of GDP. Therefore, any retreat from cross-border integration, trade dispute or a deepening of geopolitical uncertainties, can pose material downside risks to Austrian output. A balance-sheet recession in Austria would depress disposable income, increase affordability risk (particularly for export-driven corporates), and lead to higher default rates.</li> <li>Persistent low interest rates would erode bank margins and become a major threat for life insurance companies, given their rate-sensitive products and investments.</li> </ul> <p><b>Supervisory assessment: Amplifying</b></p> <ul style="list-style-type: none"> <li>Insurance sector oversight: Implementation of risk rating and stress testing methodologies need clear steer. (A)</li> <li>Macroprudential: SyRB for systemic vulnerability and O-SII buffer increase capital resilience. (M)</li> <li>Crisis management: A unified, single resolution process for a major Austrian bank with an Italian parent (SPE) could lead to a downgrade in its credit profile. (A)</li> <li>Banking sector oversight: A weak framework for country risk and transfer risk could add losses from events in foreign countries. (A)</li> </ul>



**Table 3. Austria: Selected Economic Indicators, 2017–2025**  
(Annual percent change, unless otherwise indicated)

	2017	2018	2019	2020	2021	2022	2023	2024	2025
	Projections								
NATIONAL ACCOUNTS									
Real GDP (expenditure)	2.5	2.4	1.5	1.6	1.6	1.6	1.6	1.6	1.6
Domestic demand	2.1	1.7	1.3	1.6	2.0	1.8	2.0	1.7	1.6
Consumption	1.3	1.1	0.7	2.2	2.2	1.9	2.1	1.7	1.6
Private	1.4	1.1	0.5	2.6	2.6	1.7	2.4	1.8	1.5
Public	1.1	0.9	1.1	1.2	1.2	2.4	1.3	1.6	1.8
Gross fixed capital formation	4.0	3.9	1.1	1.8	1.6	1.5	1.7	1.6	1.5
Private	4.1	4.4	1.1	1.7	1.8	1.5	1.7	1.7	1.5
Public	2.7	0.8	1.0	2.1	0.5	1.7	1.5	1.4	1.8
GNFS exports	5.0	5.9	3.1	1.6	2.0	1.6	2.0	1.6	3.0
GNFS imports	5.0	4.6	1.9	2.5	2.9	2.0	2.8	1.8	3.0
Contribution to GDP (percentage points)									
Final domestic demand	1.9	1.7	0.7	2.0	1.9	1.7	1.9	1.6	1.5
Net exports	0.2	0.9	0.8	-0.4	-0.4	-0.1	-0.4	-0.1	0.1
Inventories and statistical discrepancy	0.4	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Investment (% GDP)	24.8	25.1	25.5	25.2	25.1	25.1	25.1	25.2	25.2
Public	3.9	3.7	3.7	3.9	3.8	3.8	3.8	3.8	3.8
Private	20.9	21.4	21.9	21.3	21.3	21.3	21.3	21.4	21.3
Gross national savings (% GDP)	26.3	27.4	27.7	27.4	27.3	27.3	27.0	27.1	32.5
Public	3.2	3.9	3.9	3.9	3.8	4.0	4.3	4.3	5.2
Private	23.1	23.6	23.8	23.5	23.4	23.4	22.8	22.8	27.3
Potential output	1.5	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.6
Output gap (% potential GDP)	0.1	0.9	0.6	0.6	0.4	0.2	0.1	0.0	0.0
LABOR MARKET									
Labor force	0.4	1.1	1.0	0.9	0.8	0.8	0.7	0.5	0.4
Employment	0.9	1.4	1.1	0.9	0.8	0.8	0.7	0.5	0.4
Wages (hourly)	3.4	3.5	2.4	2.3	2.4	2.5	2.7	2.9	3.0
Unemployment rate (% labor force)									
EU harmonized rate	5.5	4.9	4.7	4.7	4.7	4.7	4.7	4.7	4.7
National definition	8.5	7.7	7.6	7.5	7.5	7.5	7.5	7.5	7.5
PRICES									
Consumer prices (avg)	2.2	2.1	1.6	1.8	1.9	2.0	2.0	2.0	2.0
Consumer prices (eop)	2.3	1.7	1.6	1.9	1.9	2.0	2.0	2.0	2.0
Core CPI (eop)	2.2	1.5	1.5	1.7	1.8	2.0	2.0	2.0	2.0
GDP deflator	1.1	1.8	1.8	1.5	2.1	2.0	2.0	2.0	2.2
MACRO-FINANCIAL									
Broad money	4.5	5.2	3.4	3.7	3.8	3.5	3.6	3.6	3.9
Credit to the private sector	3.9	3.9	3.4	2.1	2.5	2.5	2.5	2.5	2.8
Corporations	5.3	3.9	3.4	1.2	1.5	1.5	1.6	1.6	1.9
Households	2.5	3.9	3.4	2.9	3.4	3.3	3.3	3.4	3.6
GENERAL GOVERNMENT FINANCES (% GDP)									
Revenue	48.2	48.8	48.5	48.4	48.3	48.4	48.6	48.7	48.8
Expenditure	48.9	48.6	48.2	48.4	48.3	48.2	48.2	48.2	48.3
Net lending/borrowing	-0.7	0.2	0.2	0.0	0.0	0.2	0.4	0.5	0.5
Structural balance	-0.7	-0.3	-0.3	-0.4	-0.2	0.1	0.4	0.5	0.5
Structural primary balance	1.1	1.3	1.2	1.0	1.0	1.1	1.3	1.3	1.2
Gross debt	78.4	74.0	70.5	68.1	65.4	62.7	60.0	57.3	54.7
BALANCE OF PAYMENTS									
Current account (% GDP)	1.6	2.3	2.2	2.2	2.1	2.2	1.9	1.9	1.9
Export volume (goods and services)	5.0	5.9	3.1	1.6	2.0	1.6	2.0	1.6	3.0
Import volume (goods and services)	5.0	4.6	1.9	2.5	2.9	2.0	2.8	1.8	3.0
Int'l investment position, net (% GDP)	2.8	3.7	7.4	9.3	11.0	12.8	14.2	15.5	16.8
MEMORANDUM ITEMS									
Nominal GDP (bn €)	370	386	399	411	426	442	457	474	492
Population (million)	8.8	8.9	9.0	9.0	9.1	9.1	9.2	9.2	9.3
GDP per capita (\$)	47,440	51,293	49,893	50,940	53,055	55,170	57,362	59,779	62,475
US\$/€ (rate; annual avg)	1.13	1.18	1.12	...	...	...	...	...	...
Real effective exchange rate	0.3	0.5	-2.3	-0.3	0.0	0.0	0.0	0.0	0.0

Sources: Authorities' data and IMF staff estimates and projections.

**Table 4. Austria: Financial Soundness Indicators for the Banking Sector, 2013–2018**

(Percent)

	2013	2014	2015	2016	2017	2018
<b>Capital adequacy</b>						
Regulatory capital to risk-weighted assets 1/	18.0	16.3	16.5	18.0	18.8	18.4
Regulatory Tier I capital to risk-weighted assets 1/	13.7	12.3	13.2	14.5	15.6	15.6
Capital to assets (percent) 2/	8.0	6.8	7.4	7.3	7.5	7.7
Large exposures to capital 2/	52.6	70.5	59.2	60.7	51.2	55.6
Nonperforming loans net of loan-loss provisions to capital 2/ 4/	5.8	13.8	13.2	11.2	10.9	8.0
<b>Asset quality</b>						
Nonperforming loans to total gross loans 2/ 4/	2.9	3.5	3.4	2.7	2.4	1.9
Sectoral distribution of loans to total loans 3/						
Residents	70.2	70.0	73.5	74.7	76.3	75.9
Deposit-takers	22.6	20.2	19.8	19.0	18.0	17.8
Central bank	1.7	1.6	3.1	3.0	5.5	6.2
Other financial corporations	2.7	3.0	3.1	3.0	2.3	2.1
General government	3.9	4.3	4.5	4.5	3.9	3.8
Nonfinancial corporations	19.8	20.0	20.7	21.5	22.4	22.4
Other domestic sectors	19.6	20.8	22.4	23.7	24.1	23.6
Nonresidents	29.8	30.0	26.5	25.3	23.7	24.1
Geographical distribution of loans to total loans 2,3/						
Domestic economy	70.2	70.0	73.5	74.7	76.3	75.9
Advanced economies	14.6	16.4	14.5	15.1	13.5	14.0
Emerging market and developing countries	15.2	13.7	12.0	10.2	10.3	10.0
Africa	0.1	0.1	0.2	0.2	0.2	0.3
Of which: Sub-Sahara Africa	0.1	0.1	0.1	0.2	0.2	0.3
Central and Eastern Europe	12.3	10.7	9.6	8.2	8.5	8.4
Commonwealth of Independent States and Mongolia	2.1	2.0	1.5	0.8	0.7	0.5
Developing Asia, including China	0.5	0.5	0.5	0.5	0.5	0.4
Middle East	0.1	0.1	0.1	0.2	0.2	0.2
Western Hemisphere	0.1	0.2	0.2	0.2	0.2	0.2
<b>Earnings and profitability 1/</b>						
Return on assets	0.1	-0.2	0.5	0.5	0.8	0.8
Return on equity	1.2	-3.2	7.2	7.0	10.0	9.9
Net interest income to gross income	65.7	58.7	58.8	59.0	59.1	61.1
Noninterest expenses as a percentage of gross income	96.5	77.3	69.6	74.8	67.0	68.3
<b>Liquidity 2/</b>						
Liquid assets to total assets	24.5	22.8	24.8	25.4	23.7	24.4
Liquid assets to short-term liabilities	68.9	67.0	68.5	67.2	65.7	68.2
Net open position in foreign exchange to capital	0.2	0.7	0.2	1.0	0.1	0.7
<b>Other FSIs 2/</b>						
Trading income as a percentage of gross income	2.6	1.8	2.5	1.7	1.7	1.5
Personnel expenses as a percentage of noninterest expenses	50.7	53.1	50.2	49.9	46.9	48.1
Spread between reference lending and deposit rates (basis points)	181.0	196.0	193.0	190.0	179.0	177.0
Foreign currency-denominated loans to total loans	18.8	18.8	15.5	13.8	11.2	11.2
Foreign currency-denominated liabilities to total liabilities	10.0	9.9	7.5	6.6	6.5	6.8

Sources: IMF FSI.

1/ Domestically controlled, cross-border and cross sector consolidation basis.

2/ Domestic consolidation basis.

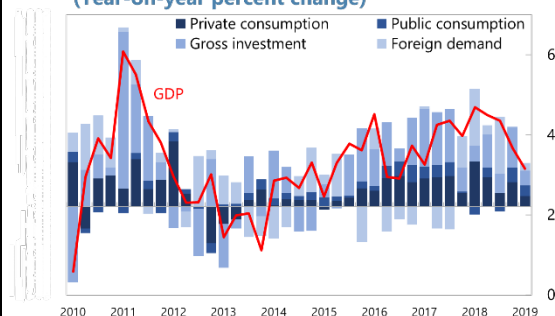
3/ Total loans include loans to financial institutions.

4/ Starting in 2014, NPLs are reported on a borrower rather than single loan basis, which results in a break in the series.

**Figure 5. Austria: Real Sector Developments**

The strong GDP growth of recent years has started to decline...

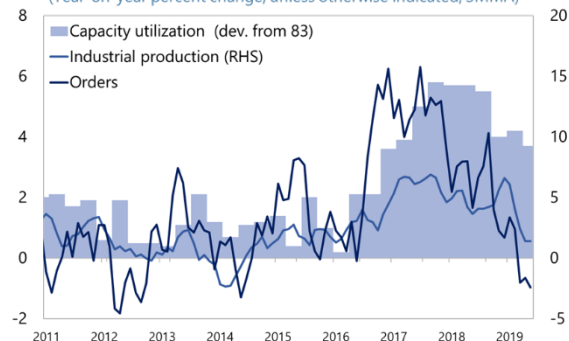
### Contribution to Real GDP (Year-on-year percent change)



...with production indicators also on the decline

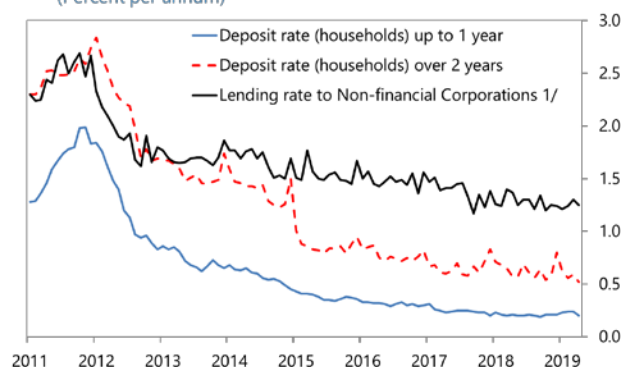
### Production

(Year-on-year percent change, unless otherwise indicated; 3MMA)



Interest rates remains low with new loans to NFCs at 1.3 percent...

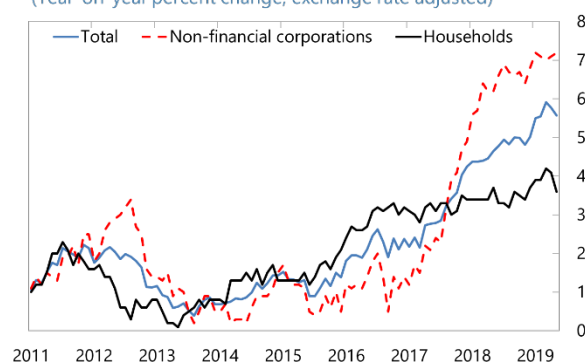
### Interest Rates (Percent per annum)



...which have supported corporate lending -with one third of credit expansion in real estate activities. Corporate debt at 94 percent of GDP is below the EA average of 105 percent.

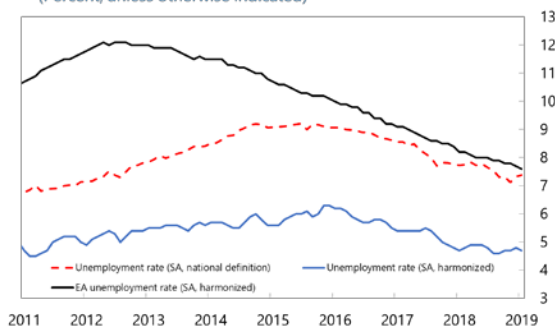
### Credit to the Private Sector

(Year-on-year percent change, exchange rate adjusted)



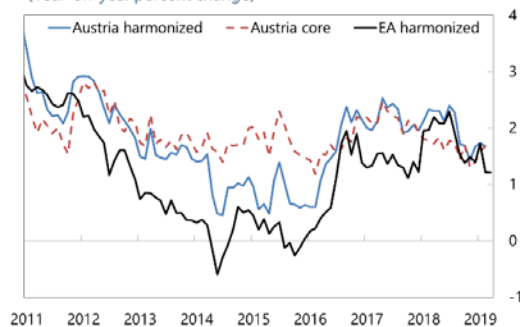
Unemployment continues to decline...

### Labor Market (Percent, unless otherwise indicated)



...but inflation has softened

### Consumer Price Index (Year-on-year percent change)

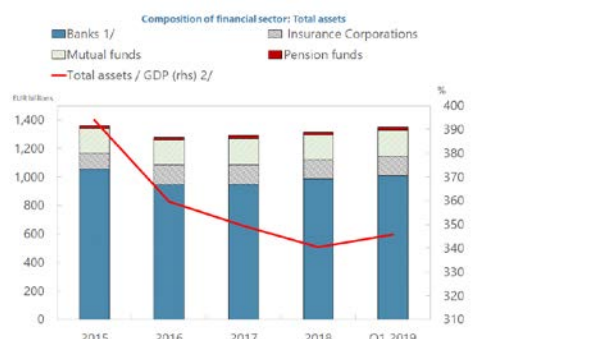


1/New loans to nonfinancial corporations over EUR 1 million with rate fixation up to 1 yr (% p.a.)

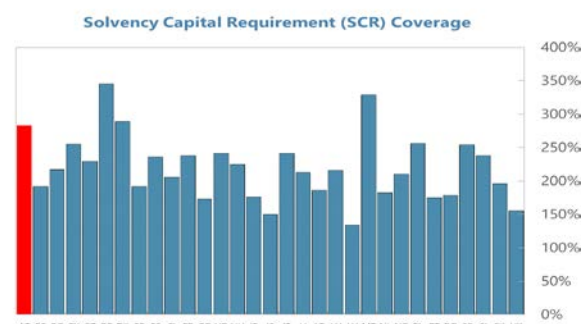
Source: Haver, Oesterreichische Nationalbank (OeNB); and IMF staff estimates.

**Figure 6. Austria: Overview of the Financial System**

While total financial assets as a share of GDP has declined since 2015 to over 340 percent of GDP, the financial system continues to be dominated by a large banking sector...

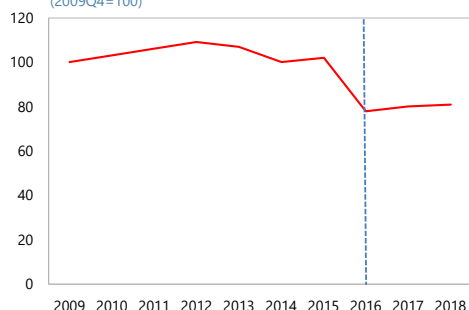


The latest solvency ratio suggests Austrian insurance entities may be relatively more resilient than other European countries at solo level...



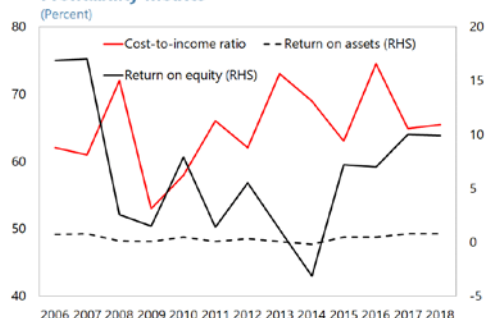
CESEE exposures have declined in 2016 due to the restructuring of Bank Austria UniCredit.

**CESEE Exposures since 2009**  
(2009Q4=100)



Profitability has recently risen but costs remain elevated at 65 percent of income and some banks have limited earnings power on a through-the-cycle view...

**Profitability Metrics**



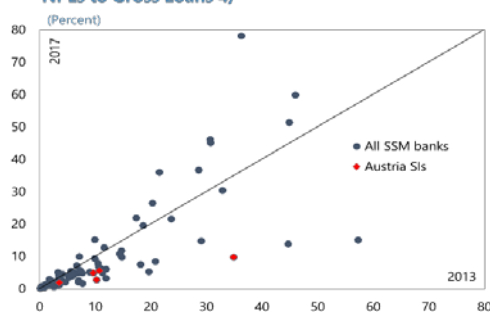
In 2013–2018, the CET1 ratio increased from 11.6 to 15.4, while the leverage ratio stands at 6.5 percent, well above the SSM 5.2 percent.

**Euro Area SSM Banks: Tier 1 Capital Ratio 3/**  
(Percent)



NPLs have declined from 8.6 percent at end 2013 to 2.6 percent in 2018, led by Austrian banks' CESEE subsidiaries...

**NPLs to Gross Loans 4/**  
(Percent)



1/ Per Austrian Banking Act, the term "credit institution" refers to an institution authorised to carry out banking transactions on the basis of Article 4 or Article 103 no. 5 of this federal act, or on the basis of special provisions under Austrian federal law. Therefore, the terms "credit institution" and "bank" are used interchangeably.

2/ GDP for year 2019 based on actual data for Q1 2019 and on WEO projections for Q2-Q4 2019.

3/ Austria SIs include the six significant institutions supervised by the SSM (Raiffeisen Bank International, BAWAG Group, Erste Group Bank, Raiffeisenbankengruppe, Volksbank, and Sberbank Europe AG), excluding the Austrian systemic subsidiary of EA SI.

4/ Data was not available for Volksbank for 2013.

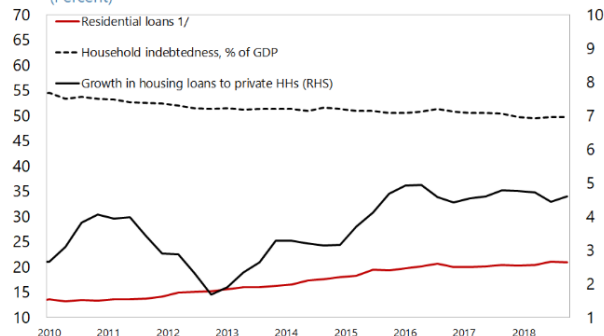
Sources: OeNB, Bloomberg; SNL; Haver; IMF, Financial Soundness Indicators; and IMF staff estimates.

**Figure 7. Austria: Vulnerability Indicators – Household Sector**

*Housing loans have continued to grow despite broadly stable household leverage...*

**Residential Loans and Household debt**

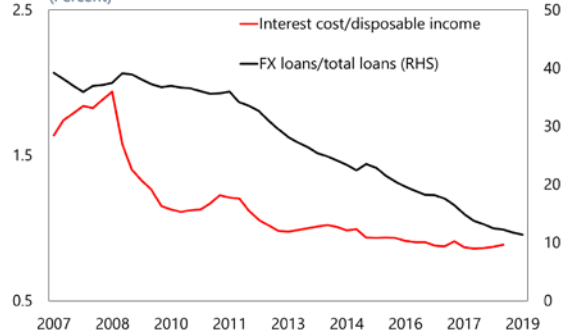
(Percent)



*...and debt service as well as risk indicators have declined*

**Households' Debt Service**

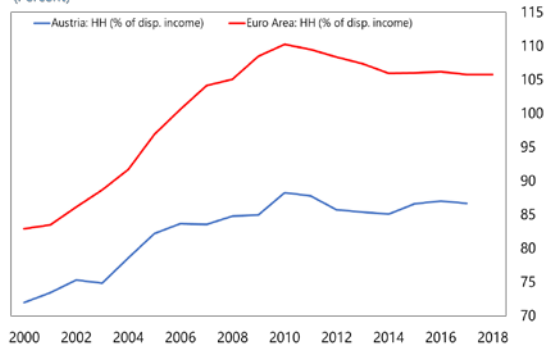
(Percent)



*Household debt levels remain below those of EA peers...*

**Household Debt**

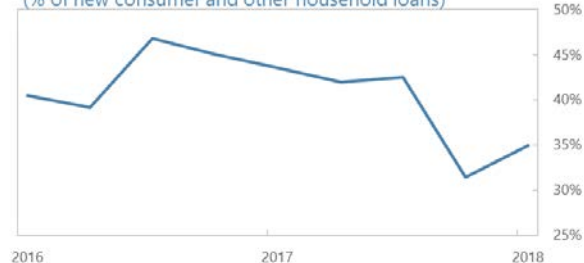
(Percent)



*...and variable- rate loans are on the decline*

**Variable rate loans**

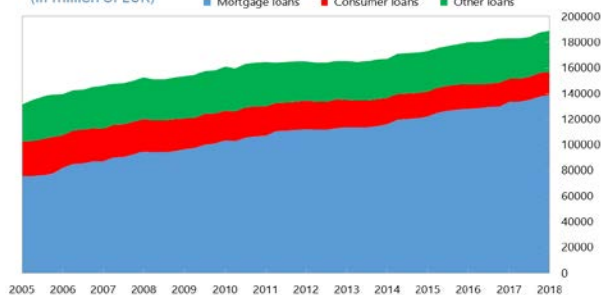
(% of new consumer and other household loans)



*...and mortgage loans continue to be the largest share of household debt*

**Household debt by type**

(in million of EUR)



*...and the share of FX loans continues to fall.*

**Foreign currency denominated loans**

(% of total loans)



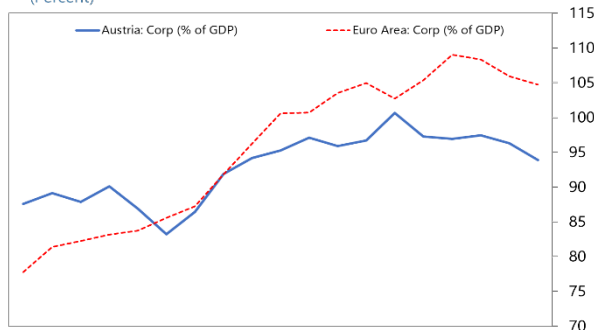
1/ Residential real estate loans as % of total loans

Source: Haver, OeNB, IMF staff calculations

**Figure 8. Austria: Vulnerability Indicators—Nonfinancial Corporate Sector**

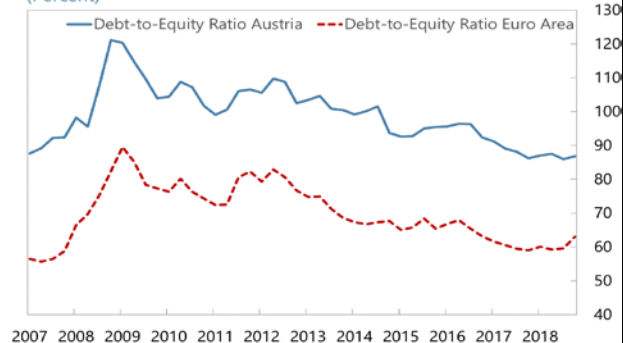
Since the global financial crisis, Austria's corporate debt as a share of GDP has been lower than the EA...

#### Corporate Debt (Percent)



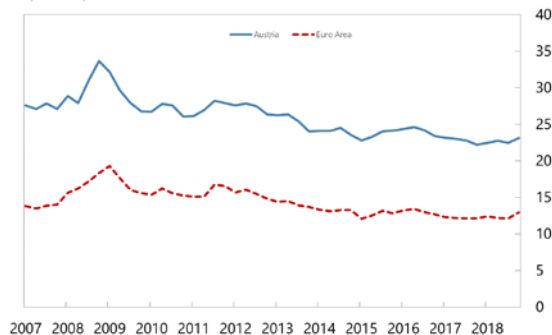
...while the debt to equity ratio remains consistently higher than the EA showing reliance on debt funding.

#### Debt-to-Equity Ratio (Percent)



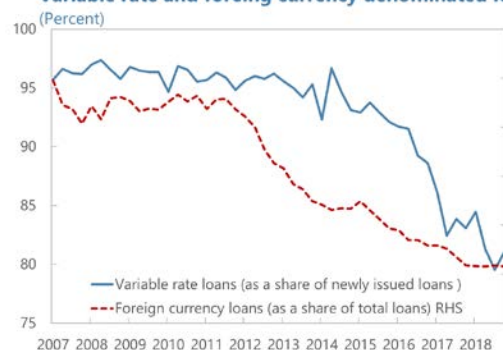
At the same time profitability has been higher than the EA average...

#### Profitability (Gross operating surplus to equity) (Percent)



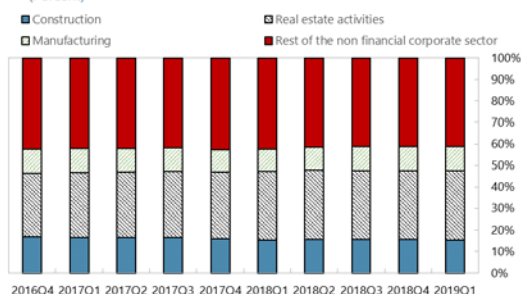
...while variable and FX loans have continued to decline

#### Variable rate and foreign currency denominated loans (Percent)



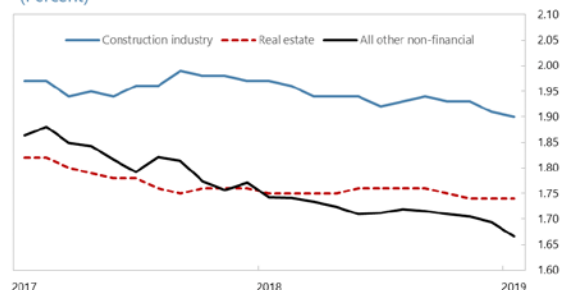
Real estate and construction sector related activities are responsible for about half of the loans to NFCs...

#### Share of bank loans to the non-financial corporate sector (Percent)



...and the real estate and construction sectors are being charged a higher rate than the NFC sector on average...

#### Interest rate on loans (Percent)



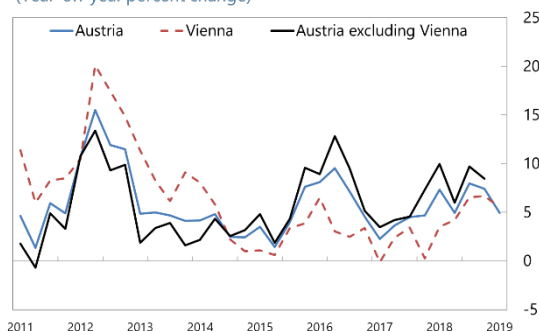
Source: Haver, OeNB, IMF staff calculations

**Figure 9. Austria: Real Estate Market Developments**

*House price growth remains elevated...*

#### House Prices

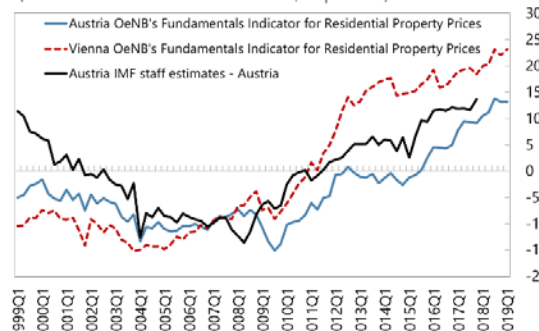
(Year-on-year percent change)



*...and have become moderately overvalued in recent years.*

#### Indicators for House price Valuation

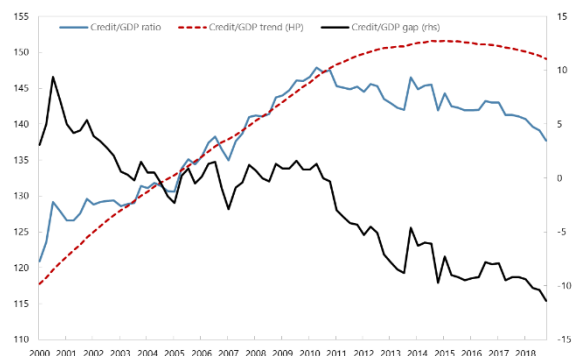
(Deviation from fundamental value, in percent)



Sources: OeNB, IMF staff calculations.

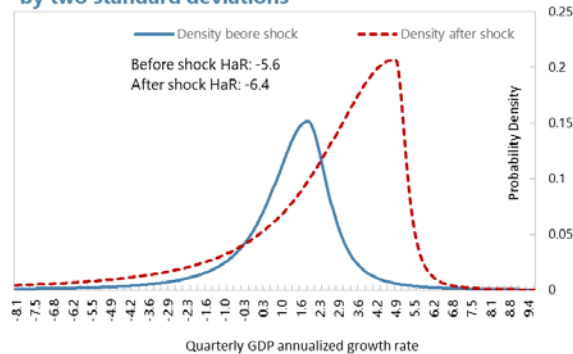
*While the credit-to-GDP remains below its long-term trend...*

#### Credit to GDP



*...further loosening of financial conditions is a source of systemic risk by increasing downside risks to a sharp house price correction.*

#### Scenario Test: Loosening of financial conditions by two standard deviations



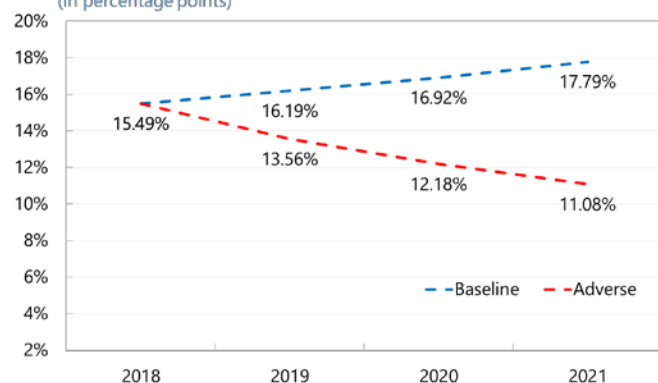


**Figure 10. Austria: Solvency Stress Test Results - System Wide Averages**

The aggregate CET1 ratio increases by 2.3 ppt in the baseline but decreases by 4.4 ppt in the adverse scenario.

### Solvency Stress Test: CET1 Capital - Baseline and Adverse (Total System)

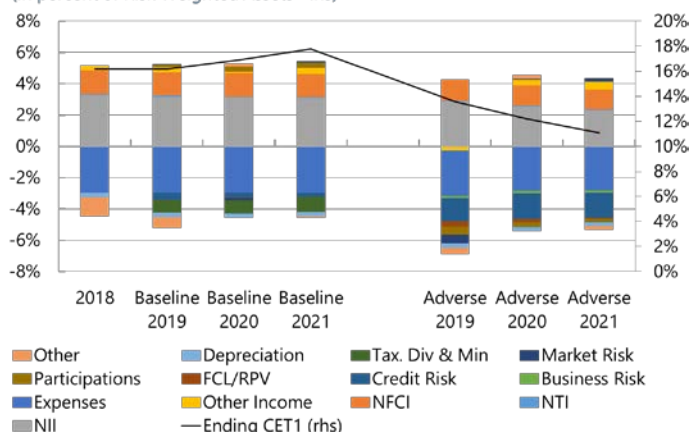
(In percentage points)



Credit impairments and lower NII are the major drivers of capital depletion in the adverse scenario.

### Contribution to CET1 Capital - 2018-2021 (Total System)

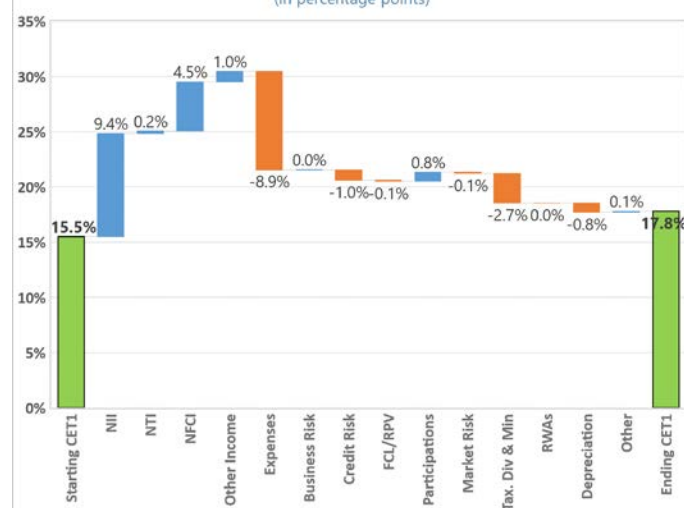
(In percent of Risk Weighted Assets - lhs)



The system has a moderate capital generation capacity, with the participation channel contributing 0.8 percentage points.

### Stress Test Impact Attribution to CET1 - Baseline Scenario

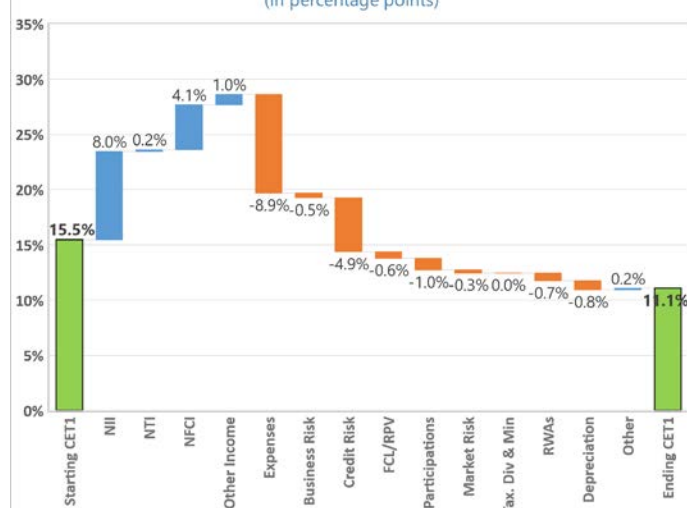
(in percentage points)



Credit losses account for an additional -3.9 percentage points compared to the baseline and RWA increase of -0.7 percentage point.

### Stress Test Impact Attribution to CET1 - Adverse Scenario

(in percentage points)



Source: OeNB; IMF staff calculations

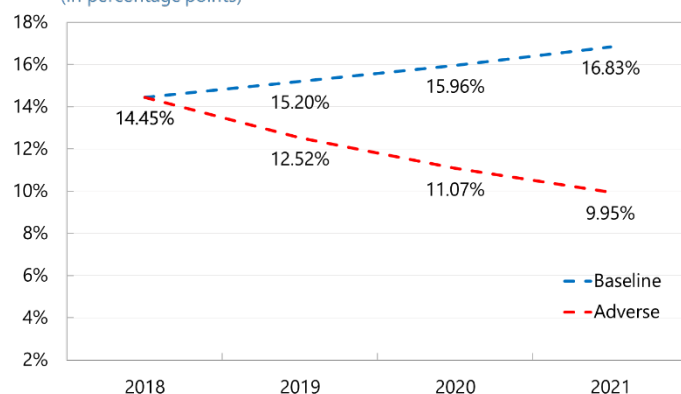


**Figure 11. Austria: Solvency Stress Test Results—OSIs**

In the adverse scenario, the ending capital ratio is lower than the starting point by 4.5 ppt.

### Solvency Stress Test: CET1 Capital - Baseline and Adverse (O-SII)

(In percentage points)

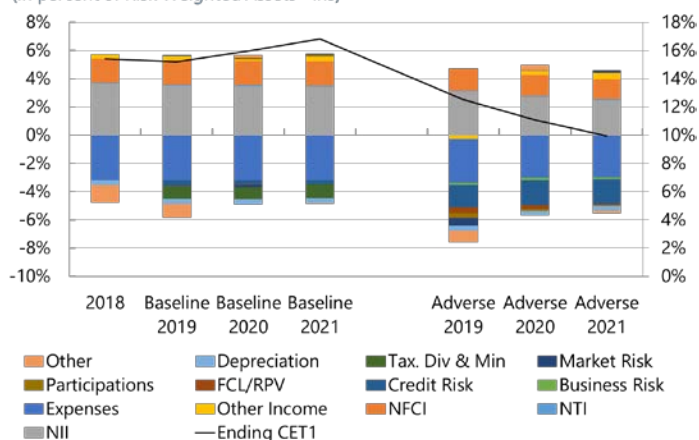


Profitability is better for OSIs though driven mainly by higher margins in the CESE...

Credit losses are the main drivers of capital depletion in the adverse scenario.

### Contribution to CET1 Capital - 2018-2021 (O-SII)

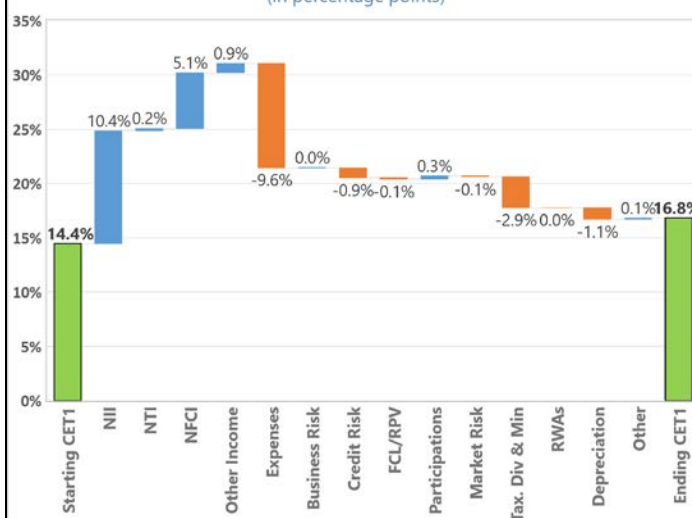
(In percent of Risk Weighted Assets - lhs)



...with higher credit losses due to the higher risk levels.

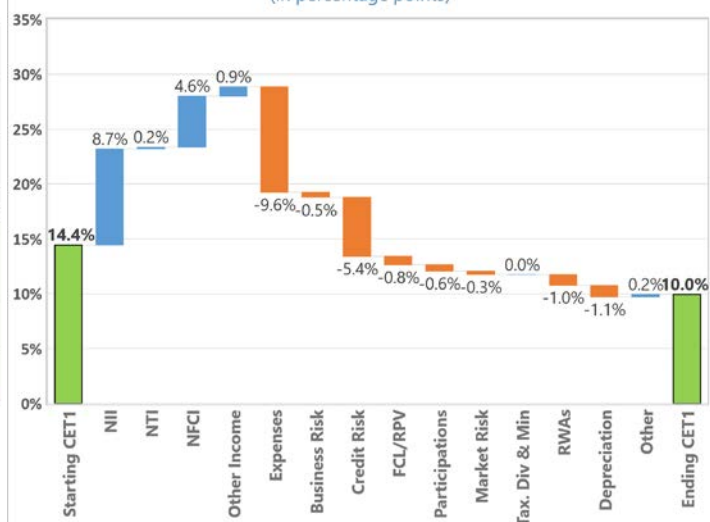
### Stress Test Impact Attribution to CET1 - Baseline Scenario

(in percentage points)



### Stress Test Impact Attribution to CET1 - Adverse Scenario

(in percentage points)

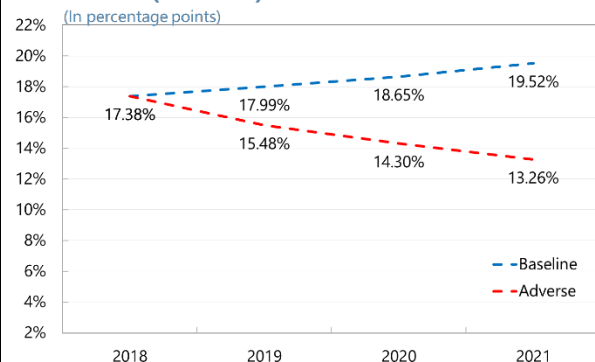


Source: OeNB, IMF staff calculations

**Figure 12. Austria: Solvency Stress Test Results—Non-OSIs**

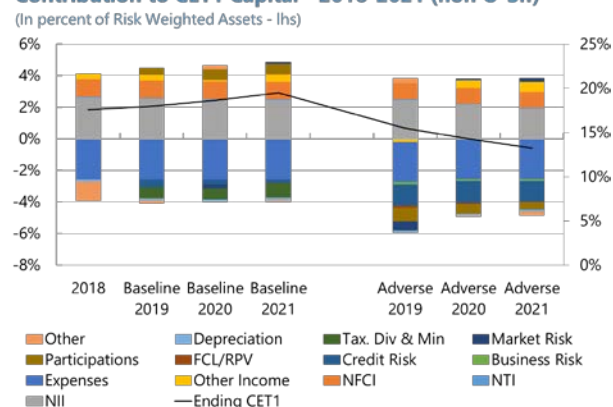
In the adverse scenario, the ending capital ratio is lower than the starting point by 4.1 ppt.

**Solvency Stress Test: CET1 Capital - Baseline and Adverse (non O-SII)**



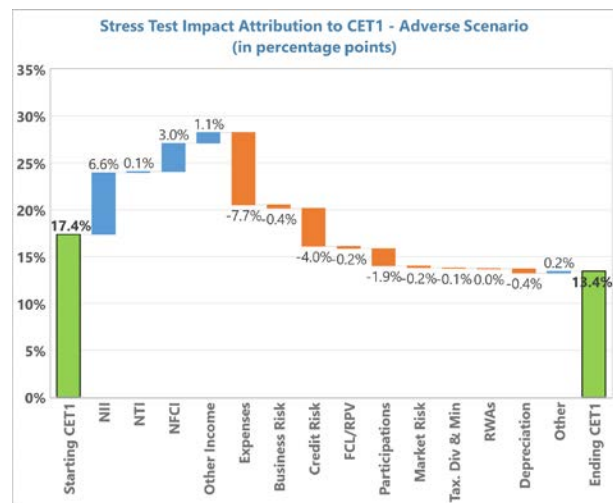
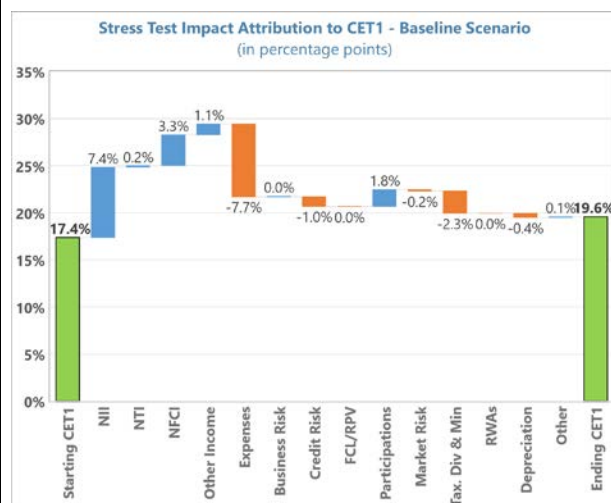
Non-OSIs are hit by lower NII and non-interest income compared to the system.

**Contribution to CET1 Capital - 2018-2021 (non O-SII)**



The positive result in the baseline can be partially attributed to the participation channel.

Non-OSIs remain more vulnerable in a downturn due to the reversal of the participation effect.

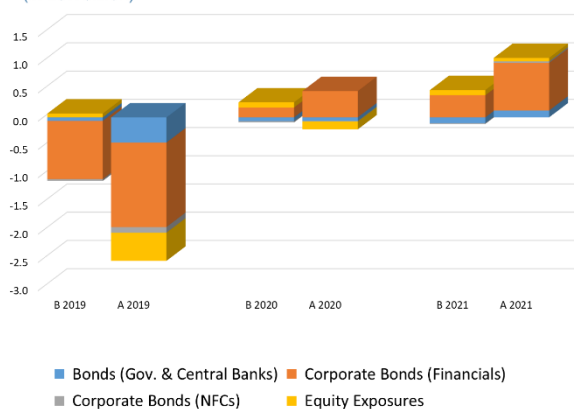


Source: OeNB, IMF staff calculations

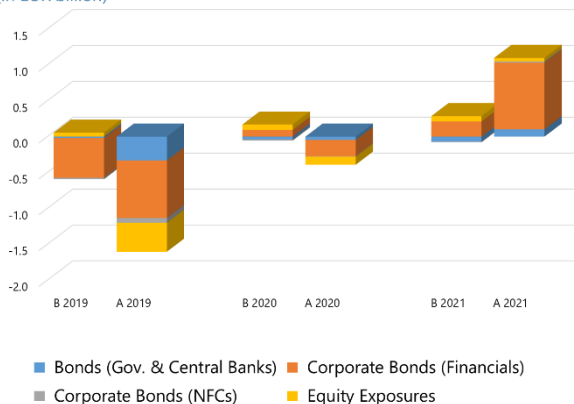
**Figure 13. Austria: Solvency Stress Test Results—Market Risk and NII Impact**

System-wide market risk impact is not material.

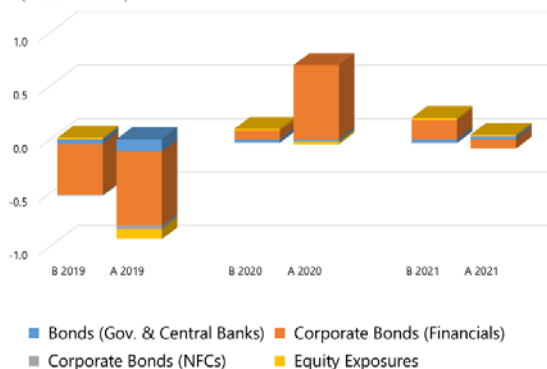
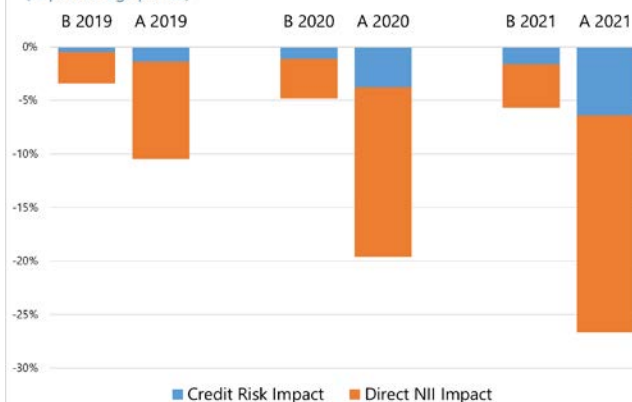
NII is lower than the 2018 starting point in the adverse scenario.

**System-wide: Market Risk Impact by Asset Class**  
(in EUR billion)

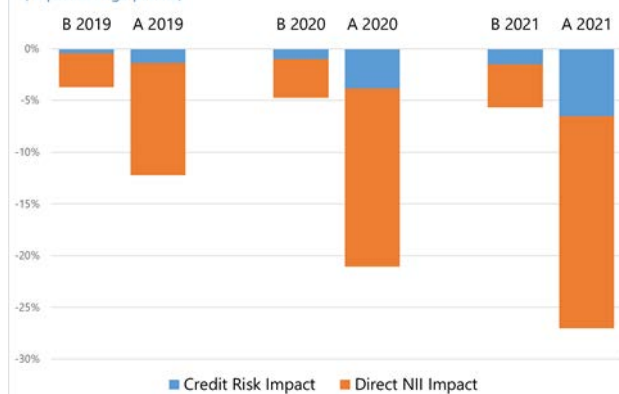
Most of the impact can be attributed to O-SIIs due to their larger portfolios.

**O-SII Banks: Market Risk Impact by Asset Class**  
(in EUR billion)

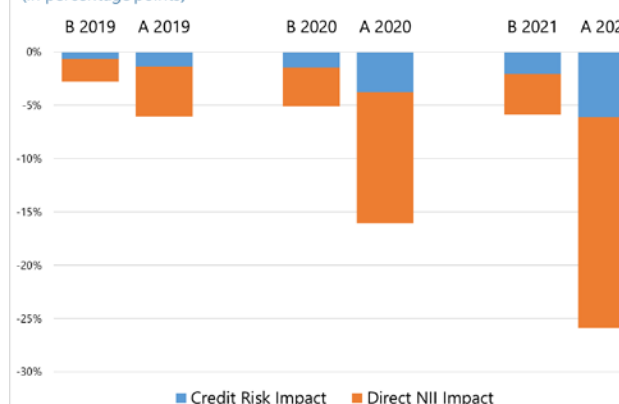
Non-O-SII fair value portfolios have significant concentration in financials.

**Non O-SII Banks: Market Risk Impact by Asset Class**  
(in EUR billion)**NII change vs 2018 (System wide)**  
(in percentage points)

O-SIIs witness a more intense pattern due to the interest rate exposure to the CESEE countries.

**NII change vs 2018 (O-SII)**  
(in percentage points)

The impact is relatively mild compared to the Non-O-SIIs.

**NII change vs 2018 (Non O-SII)**  
(in percentage points)

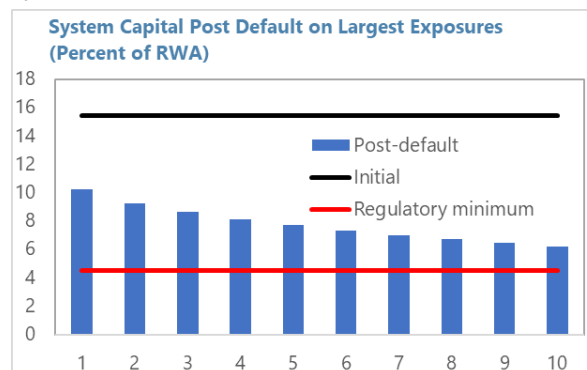
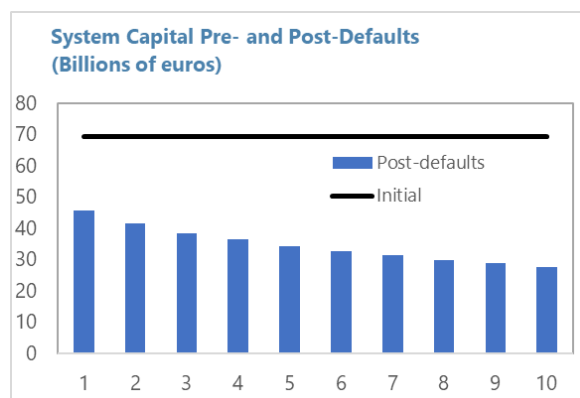
Source: OeNB; IMF staff calculations

**Figure 14. Austria: Concentration Risk <sup>1/</sup>**

System capital is severely depleted, particularly in small banking institutions...

...though, on aggregate, system-wide capital remains above the regulatory minimum

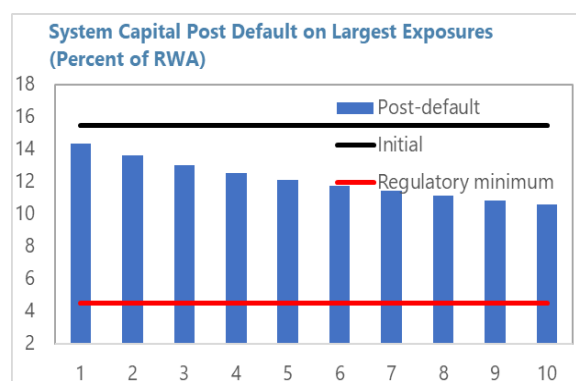
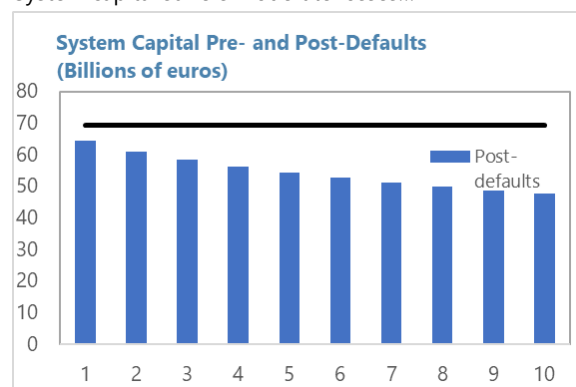
*Gross original exposures*



*Gross original exposures net of exemptions and credit risk mitigation*

System capital suffers moderate losses...

...and remains comfortably above the minimum.



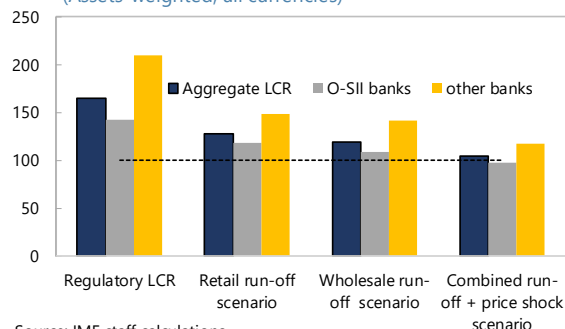
Source OeNB and IMF staff calculations based on Large Exposure Data. Exposures to central banks, sovereigns, and sub-sovereigns are excluded.

1/ The X-axis denotes the number of largest exposures that is defaulted in the simulation. The analysis assumes loss given default of 50 percent. A default is triggered when capital falls below 4.5 percent CET1 regulatory minimum.

**Figure 15. Austria: Liquidity Stress Tests Results**

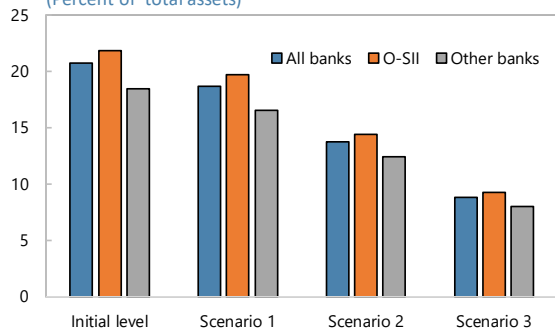
The aggregate LCR stress tests suggest the banking system is resilient to sizable liquidity shocks.

### Liquidity Coverage Ratio by Scenario (Assets-weighted, all currencies)



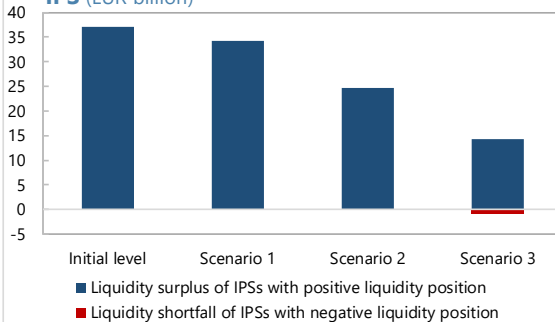
The cash-flow stress tests also point to ample liquidity buffers...

### Net Liquidity Position by Scenario (Percent of total assets)



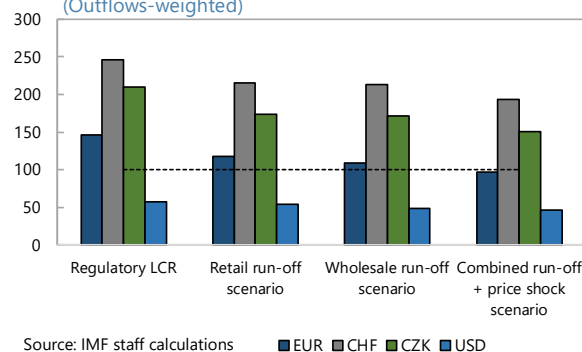
The Raiffeisen IPS scheme can satisfy its members liquidity needs also in the most adverse scenario.

### Net Liquidity Position by Scenario Raiffeisen IPS (EUR billion)



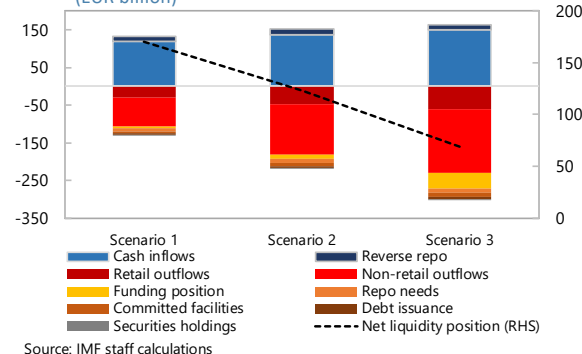
USD LCR is below the 100 percent threshold, but dollar outflows are small relative to system's liquidity buffers.

### Currency-Specific LCR by Scenario (Outflows-weighted)



...with non-retail funding the key driver of total outflows in the scenarios considered.

### Net Liquidity Position and Its Drivers (EUR billion)



The NSFR remains high under stressed conditions, thanks to the stable funding structure of the banking system.

### Net Stable Funding Ratio

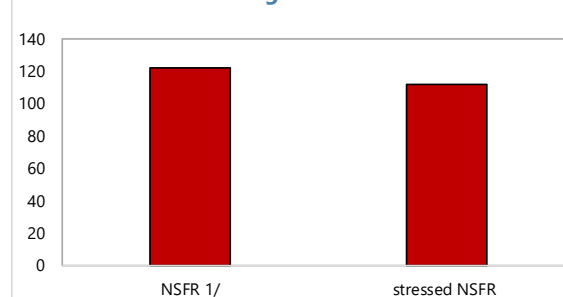
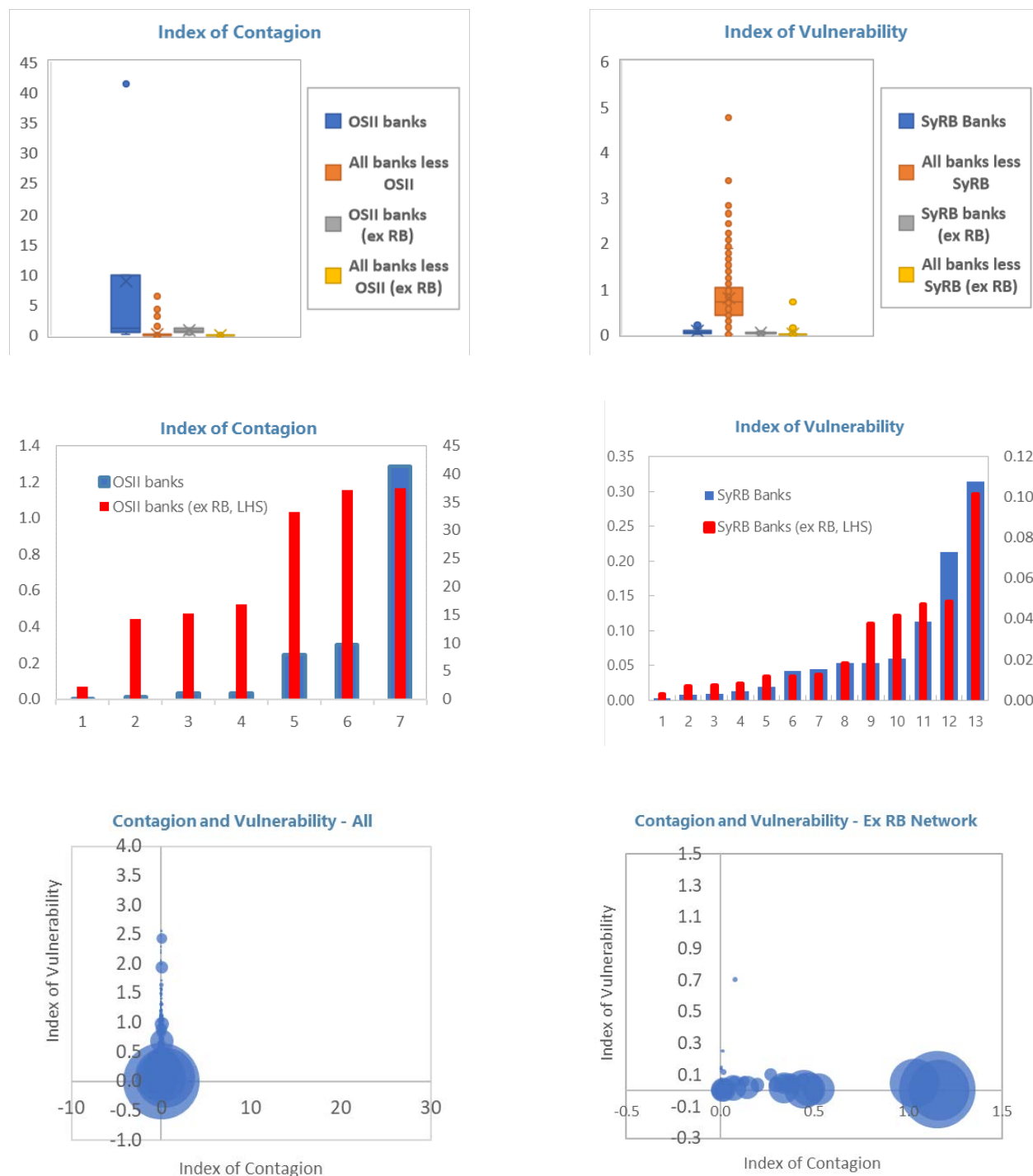


Figure 16. Austria: Domestic Contagion Analysis



Source OeNB and IMF staff calculations based on Austrian credit registry data. The data was consolidated in line with the stress test.

Note: The Index of Contagion shows the percent of total capital impairment in the system due to the failure of each bank. The Index of Vulnerability is the average percent capital impairment for a bank due to the failure of other banks. "Ex-RB" in panels denotes results calculated based on exposures net of bilateral exposures in the Raiffeisen network. The acronym "RB" denotes exposures among IPS members in the Raiffeisen sector."

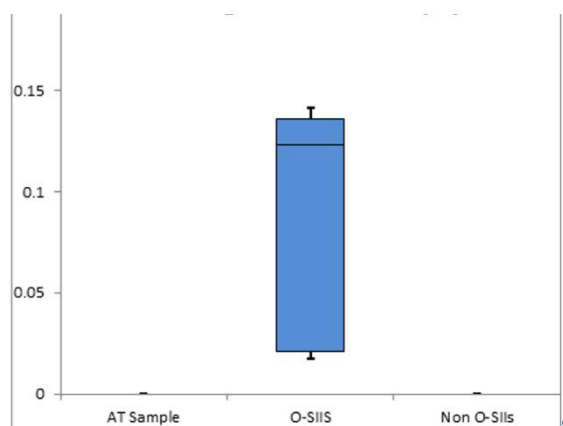
**Figure 17. Austria: Cross-Border Contagion Analysis**

*The median contagion from Austrian O-SIs to the EA is low at 0.12 percent capital depletion.*

*Inward spillovers to Austrian banks from the EA are negligible.*

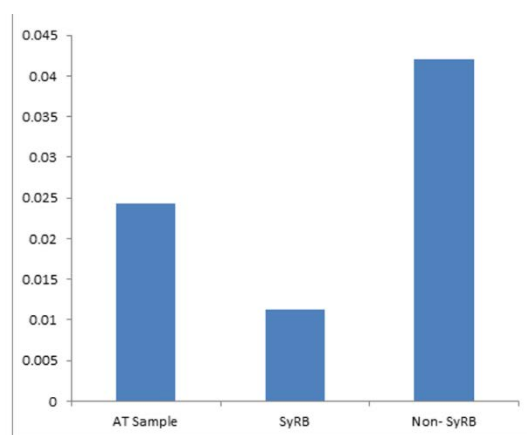
#### Index of Contagion to the EA

(In percent)



#### Index of Vulnerability to the EA

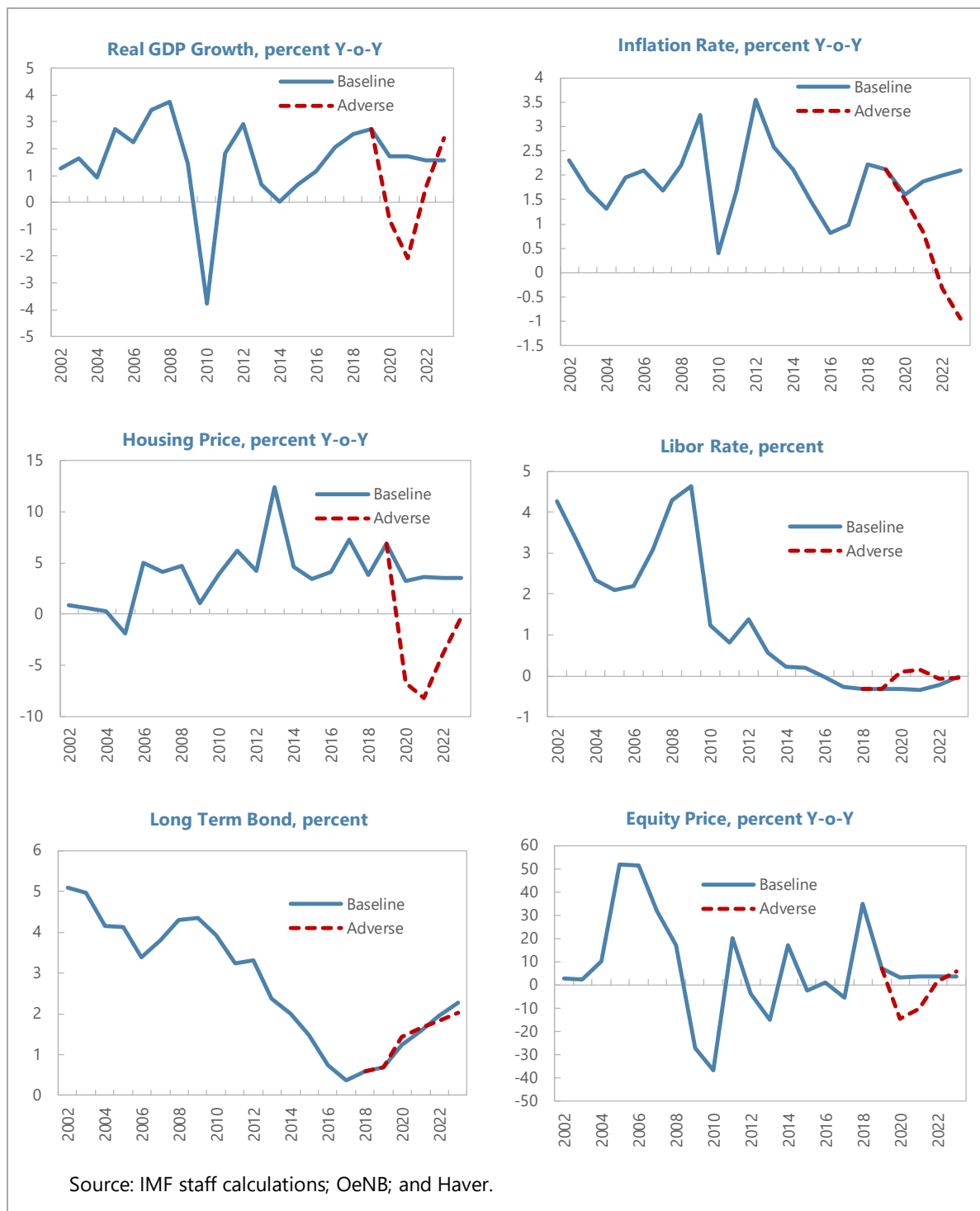
(In percent)



Source: ECB and IMF staff calculations. The analysis is based on large exposure data using Covi, G., Gorpe, Z., and Kok, C. (2019), "CoMap: mapping contagion in the euro area banking sector", ECB Working Paper No. 2224.

Note: The Index of Contagion shows the percent of total capital impairment in the system due to the failure of each bank. The Index of Vulnerability is the average percent capital impairment for a bank due to the failure of other banks.

## Annex I. Stress Test—Macroeconomic Scenario for Austria





## Annex II. Major Financial Sector Developments since the 2013

### Austria FSAP

Month	Year	Action
2014	August	Implementation of the Single Resolution Mechanism, as part of the Banking Union.
	September	Establishment of the Financial Market Stability Board (FMSB).
	November	Implementation of the Single Supervisory Mechanism (which currently supervises seven Austrian banks), as part of the Banking Union.
2015	January	Austrian Act on Bank Recovery and Resolution (BaSAG) enters into force (implementing BRRD).
	August	An Act on a Deposit Guarantee Schemes and Investor Compensation (ESAEG) is implemented (implementing DDGS).
2016	January	Introduction of the Systemic Risk Buffer (SyRB) which involved a regular evaluation of macroprudential capital buffers.
	September	Transfer of UniCredit Bank Austria's CESEE subsidiaries to its Italian parent bank.
2017	January	A new Financial Markets Anti-Money Laundering Act comes into force (implementing the 4 <sup>th</sup> AMLD).
	March	Revised Sustainability Package.
	June	Austrian parliament adopted a bill implementing CRDIV, and establishing the legal basis for using macroprudential tools (and thereby extending macroprudential toolkit) for containing systemic risks in real estate financing.
	June	Financial Market Authority (FMA) published new FMA Minimum standards for Risk Management and Granting of Foreign Loans, updating those set in 2003.
	August	Moody's raised outlook on Austria's banking system to "positive" from "stable", and S&P did the same in Oct 2017.
	December	Revised Macroprudential Policy Strategy by FMSB.
2018	July	The EU Fifth Anti Money Laundering Directive published
	August	S&P raised Austria's industry country risk assessment from 3 to 2, which puts the banking system among the 13 most stable systems worldwide.
	September	FMSB's quantitative guidance on "sustainable lending in real estate financing" that included a minimum down payment (20 percent), maturity limit (35 years), DSTI limit (30 percent to 40 percent), and prudent approach to borrower's creditworthiness assessment.

## Annex III. Implementation of 2013 Austria FSAP Recommendations—Progress

KEY RECOMMENDATION	IMPLEMENTATION STATUS D-DONE/LD-LARGELY DONE/PD-PARTLY DONE/NA-NO ACTION
<b>Macprudential Oversight</b>	
Set up a macroprudential authority with a clear legal mandate for policy formulation and rule-making, chaired by the OeNB, and coordinating with the FMA, ESRB and ECB.	<b>LD</b>
Consider expanding the range of policy tools beyond those envisaged under the CRR/CRD (e.g., structural measures, LTV, and DTI ratios).	<b>D</b>
<b>Banking Oversight</b>	
Strengthen FMA's governance, including legal protection of its bodies and staff.	<b>NA</b>
Promote stronger governance in the industry, e.g., through more systematic fit and proper tests and requirements for compliance and CRO functions.	<b>D</b>
Enhance some of the FMA's supervisory powers related to prior approval, recovery and resolution plans, and corrective action, including through general rule-making authority.	<b>PD</b>
Continue to actively prepare for SSM implementation, including to mitigate operational risks during the transition and ensure effective coordination.	<b>D</b>
<b>Insurance and Pension Oversight</b>	
Further prepare for Solvency II implementation and improve the solvency regime in line with international best practice. <sup>1/</sup>	<b>LD</b>
Further develop and enhance the use of risk-rating and stress-testing methodologies, and more frequent onsite inspections.	<b>LD</b>
<b>Early Intervention/Bank Resolution Frameworks</b>	
Enhance the proposed early intervention framework by better identifying the required powers and widening the range of intervention tools.	<b>D</b>
Introduce a bank resolution framework based on international best practice, consistent with future EU Directives, and assign FMA as the resolution authority.	<b>D</b>
Strengthen cross-border resolution arrangements with non-EU/EEA countries.	<b>D</b>
<b>Deposit Guarantee Scheme</b>	
Introduce a unified, ex ante-funded, public DGS, using the BCBS Core Principles and EU Directive as minimum standards.	<b>D</b>
Establish a high-level working group to design and organize the transition to the unified DGS.	<b>D</b>
<b>Systemic Crisis Management</b>	
Strengthen crisis preparedness, including by ensuring that Financial Market Stabilization Act (FinStaG) resources are adequate and giving the Federal Government standing authorization to take necessary action.	<b>PD</b>
Enhance FIMBAG's role in negotiating and overseeing the implementation of bank restructuring plans for which the Federal Government provides capital support.	<b>D</b>
<sup>1/</sup> While Solvency II has been technically implemented, it requires continuous efforts with adequate resources.	

## Bank Solvency Stress Testing

Domain		Assumptions
		Top-down by FSAP team
1. Institutional perimeter	Institutions included	<ul style="list-style-type: none"> <li>All Austrian credit institutions, both directly supervised by the ECB: six significant institutions (SIs) plus one subsidiary of a foreign SI; and, directly supervised by the Austrian authorities: 433 Less Significant Institutions (LSIs).</li> </ul>
	Market share	<ul style="list-style-type: none"> <li>For the 7 SIs, about 60 percent of banking sector assets.</li> <li>For the entire 440 institutions, above 95 percent of total assets of deposit-taking institutions in Austria.</li> </ul>
	Data and baseline date	<ul style="list-style-type: none"> <li>European and Austrian regulatory returns and supervisory data (e.g., FINREP and COREP).</li> <li>OeNB's statistical data warehouse.</li> <li>Austrian Central Credit Register (CCR) and external data sources. (Kreditschutzverband, KSV).</li> <li>Moody's Analytics: CreditEdge data on corporate default probabilities.</li> <li>Data as of December 2018.</li> <li>Scope of financial consolidation: group-wide.</li> </ul>
2. Channels of risk propagation	Methodology	<ul style="list-style-type: none"> <li>Balance sheet approach.</li> <li>Projections of key balance sheet, income statement and capital account items.</li> <li>Static balance sheet assumption.</li> <li>The exercise will not provide separate accounting projection layers for impairments. Only 19 entities from the sample report under IFRS 9 with the remaining reporting under nGAAP.</li> <li>Credit risk, market risk, NII and non-interest income projections will be produced for all banks for two scenarios: baseline and macro adverse.</li> <li>Indirect credit risk emanating from foreign currency loans and repayment vehicles is stressed for CHF, JPY, USD, and EUR (for countries where the EUR is a foreign currency but also for domestic RV loans).</li> <li>Participation risk also accounted for, based on OeNB's internal entity equity participation matrix.</li> <li>Granular projections of credit risk parameters are performed, including exposures at default (EADs), probabilities of default (PDs) losses given default (LGDs) for each asset class and geography.</li> </ul>

Domain		Assumptions
		Top-down by FSAP team
		<ul style="list-style-type: none"> <li>• Different asset class segmentation was used for Sis and LSIs. Sis segments were based on COREP segmentation and LSI segments were mapped to a CCR relevant segmentation that also included a more granular breakdown of corporate exposures based on NACE classification. Satellite models were mapped in accordance with the dual segmentation approach (a generic corporate satellite model can be used to drive PD paths for multiple NACE segments with different starting points).</li> <li>• NII is projected based on its sensitivity to macrofinancial conditions for both reference rates and effective spread margins across all interest rate sensitive asset and liability segments and all material exposure geographies. The approach is similar to the one used in the EBA exercise and is considered to be conservative for the interest rate scenario, however, some additional assumptions on repricing profiles are needed given the absence of bottom up data.</li> <li>• Net trading income, net fee and commission income will be stressed based on its historical volatility in combination with haircuts based on the EBA methodology.</li> <li>• Operational expenses are kept at the starting point (an exponentially smoothed historical average, validated by line supervisors).</li> <li>• The impact on P&amp;L and OCI due to FVTPL and FVOCI positions is also estimated as part of the market risk impact. Debt securities at Amortized Cost portfolios are not stressed.</li> <li>• The mark-to-market approach is used to assess the impact of equity prices and commodity prices on net open positions.</li> <li>• Risk weighted assets are adjusted to reflect changes in the quality of credit exposures.</li> </ul>
	Satellite models for macrofinancial linkages	<ul style="list-style-type: none"> <li>• In the absence of reliable historical default data, a structural model approach, partially relying on DSR/LTV exposure joint distributions and Monte Carlo simulations for house price developments, is used to estimate PDs and LGDs for mortgage exposures across geographies.</li> <li>• Bayesian Model Averaging (BMA) techniques are used to produce satellite projections for the corporate sector across geographies.</li> <li>• Cross-sector or cross-country proxies are also used for the projection of parameters where a direct calibration is not feasible due to data constraints or for sectors of very low materiality.</li> </ul>

Domain		Assumptions
		Top-down by FSAP team
3. Tail shocks	Stress test horizon	<ul style="list-style-type: none"> <li>• Three years (2018 Q4 – 2021 Q4).</li> </ul>
	Scenario analysis	<ul style="list-style-type: none"> <li>• Based on two common macroeconomic and financial scenarios (baseline and macro adverse).</li> <li>• The scenarios specify key macrofinancial variables (e.g., real GDP growth, inflation rate, unemployment rates, exchange rates, equity prices, house prices, interest rates and credit growth) for Austria and important geographies/countries, as well as global variables (e.g., commodity prices).</li> <li>• The baseline scenario is based on July 2019 World Economic Outlook (WEO) projections.</li> <li>• The macro adverse scenario is calibrated using the Global Macrofinancial Model (GFM) model assumes the materialization of the systemic risks highlighted in the RAM. Financial instability can materialize from a confluence of risk triggers including contagion from CESEE countries; a sudden sharp tightening in global financial conditions; a correction in real estate prices in Austria; and a slump in global growth. The scenario features a financial cycle downturn with FX market disruptions, and sovereign stress generating a balance-sheet recession in Austria and the CESEE region. In terms of severity, it implies a deviation of Austria real GDP from its baseline of 6.9 percent by 2021, with a 2.3 Standard Deviation move in two-year cumulative real GDP growth rate, and a 20 percent peak-to-trough decline in real estate prices. Output shocks in the CESEE region range between 8.1 and 12.6 percent deviation from baseline.</li> </ul>
	Sensitivity analysis	<ul style="list-style-type: none"> <li>• A Low—for-Long interest rate scenario was used as the adverse interest scenario in a sensitivity analysis focusing on low structural profitability concerns.</li> <li>• A series of reverse stress tests are performed in to evaluate and asses the relative resiliency of IPSs and to identify the tipping point for each one of them.</li> <li>• Complementary simulation analysis of the Raiffeisen bank inverse ownership structure will be used to measure the impact of participation risk and to identify the levels of stress that could cause sever inward spillovers.</li> </ul>
4. Risks and buffers	Risks/factors assessed (how each element is derived, assumptions)	<ul style="list-style-type: none"> <li>• Credit risk captures all on-balance/off-balance sheet exposures at amortized cost by regulatory exposure sector and geography. Different paths are produced for different sector/geography combinations.</li> <li>• The starting point of credit parameters is also used to project scenario dependent forward paths.</li> </ul>

Domain		Assumptions
		Top-down by FSAP team
		<ul style="list-style-type: none"> <li>Market risk is reflected in valuation effects of FVTPL and FVOCI positions, as well as net open financial positions (i.e., equities, and commodities). Interest rate curves based on the two scenarios are used to infer interest rate changes by country. The adverse macro scenario is further augmented to include financial variables that are needed to produce accurate projections for fair value positions.</li> </ul>
		<ul style="list-style-type: none"> <li>NII is affected by projecting effective interest rates by asset/liability class and geography. A time to repricing approach, based on fixed/variable-rate break-down and using the point in time repricing ladder informs further the velocity of passthrough rates.</li> <li>Shocks to non-interest income are simulated to capture varying degrees of market-sensitive components of non-interest income.</li> <li>Credit exposure concentration risk is also assessed, considering market structure specificities.</li> </ul>
	Behavioral adjustments	<ul style="list-style-type: none"> <li>Under the static balance sheet assumption exposures remain constant and do not evolve in accordance with credit growth assumptions of scenarios. This is an assumption imposed by infrastructure driven constraints.</li> <li>For NII, maturing assets/liabilities are assumed to be replaced by instruments of the same type, maturity but at current rates.</li> <li>If banks' capital falls below regulatory requirements, no prompt corrective action is assumed.</li> <li>Banks are assumed to pay a fixed share of 30 percent of their profits, if positive, in taxes and another 30 percent as dividends to shareholders</li> <li>One-off adjustments made by OeNB line supervisors as part of OeNB's annual stress testing exercise will be accepted to warrant a common starting point at T0.</li> </ul>
5. Regulatory and market-based standards and parameters	Calibration of risk parameters	<ul style="list-style-type: none"> <li>Scenario dependent forward paths for PiT PDs and LGDs are estimated for each asset class and geography.</li> <li>It is assumed that prudential expected losses will coincide with accounting impairments, therefore, the accounting layer is ignored.</li> <li>Given the limited availability of PiT LGD data, some very basic proxies are used.</li> <li>For internal ratings-based (IRB) exposures, risk-weight assets are projected based on updated regulatory TTC PDs and downturn LGDs, using appropriate scaling multipliers from the PiT parameters.</li> <li>For standardized approach (STA) exposures, risk-weight assets are assumed to remain constant.</li> </ul>
	Regulatory/accounting and market-based standards	<ul style="list-style-type: none"> <li>In the baseline and the adverse scenario, hurdle rates include the regulatory minimum and the OSII buffer.</li> <li>Hurdle rates are based on the CET1 ratios.</li> </ul>

Domain		Assumptions
		Top-down by FSAP team
6. Reporting format for results	Output presentation	<ul style="list-style-type: none"> <li>• System-wide evolution of CET1 capital ratios.</li> <li>• Distribution of banks' capital positions.</li> <li>• Contribution to key drivers to system-wide net income and capital position, including differences between the baseline scenario and the adverse scenario.</li> <li>• Share of institutions with capital below the hurdle rates.</li> </ul>
7. Infrastructure used	Output presentation	<ul style="list-style-type: none"> <li>• OeNB's ARNIE infrastructure is used to account for the extended bank sample and the cross-entity equity participations ("inverse ownership").</li> <li>• IMF team's satellite model projections are imported as an external overlay into ARNIE.</li> <li>• Banks' credit and interest rate starting point parameters were validated using IMF staff estimates and in some cases a scaling factor was applied to the satellite model to anchor projections better with regulatory or historically observed parameters.</li> <li>• Starting point translation into scenario dependent forward paths for individual banks and segments follows the IMF guidelines (absolute shift, distance to defaults or similar type of translation).</li> </ul>

## Bank Liquidity Stress Testing

Domain		Assumptions
		Top-down by FSAP team
1. Institutional perimeter	Institutions included	<ul style="list-style-type: none"> <li>Seven SIs, and 433 Austrian LSIs.</li> </ul>
	Market share	<ul style="list-style-type: none"> <li>For seven SIs, about 60 percent of banking sector assets.</li> <li>For all 440 entities (including the 7 SIs), above 95 percent of total assets of deposit-taking institutions.</li> </ul>
	Data and baseline date	<ul style="list-style-type: none"> <li>ECB/SSM and OeNB: regulatory returns based on the Liquidity Coverage Ratio and the Net Stable Funding Ratio and Additional Liquidity Metrics from the FINREP/COREP data repository.</li> <li>Data as of December 2018.</li> <li>Scope of financial consolidation: group-wide.</li> </ul>
2. Channels of risk propagation	Methodology	<ul style="list-style-type: none"> <li>The exercise is based on three types of tests—LCR test, cash-flow analysis and NSFR test.</li> <li>The LCR test is in line with the standard Basel monitoring tool, featuring total liquidity and liquidity in all significant currencies (Euro, Swiss Franc, US dollar and CESEE currencies).</li> <li>The cash-flow analysis analyzes the net cash balance, accounting for available unencumbered assets, contractual cash inflows and outflows, and behavioral flows.</li> <li>For the cash-flow analysis, relevant second-round effects could be considered, including margin calls for existing collateral positions, central bank's liquidity provision, additional asset haircuts due to fire sales, additional repo haircuts due to limited collateral supply, and wholesale funding market freezes because of banks' solvency and liquidity concerns.</li> <li>NSFR reporting is still used for monitoring purposes (non-binding). The analysis reports recent NSFR statistics but also introduces standard parameters for the calculation of stressed NSFR.</li> <li>The IPS structure was considered -to the extent possible- when assessing liquidity under stress. Regulatory liquidity waivers were considered, and the mandatory interbank deposits of Article 27(a) of the Banking Act were reallocated to the depositing entities, increasing their counterbalancing capacity.</li> </ul>
	Satellite models for macrofinancial linkages	<ul style="list-style-type: none"> <li>For the cash-flow analysis, asset haircuts reflect two components: (i) shocks to interest rates and asset prices as captured the macrofinancial scenarios; and (ii) additional haircuts required by counterparties to accept specific assets as collateral for secured funding transactions.</li> </ul>
	Stress test horizon	<ul style="list-style-type: none"> <li>For the LCR test, the stress test horizon is 30 days.</li> <li>For the cash-flow analysis, the horizon of stress events would normally be three months. Nonetheless, a longer period of stress events (up to one year) may be considered as sensitivity analysis.</li> </ul>



Domain		Assumptions
		Top-down by FSAP team
3. Tail shocks	Scenario analysis	<ul style="list-style-type: none"> <li>For the LCR test, 12 scenarios are considered as a combination of: (i) 3 scenarios on liquid assets shock (regulatory, mild and severe), and ii) 4 scenarios on liability outflows; regulatory, 1 reflecting retail outflows, 1 reflecting higher wholesale outflows, and 1 combining the retail and wholesale outflows.</li> </ul>
		<ul style="list-style-type: none"> <li>For the cash-flow analysis, a series of scenarios are considered, with a range from mild to severely adverse liquidity conditions. The cash-flow analysis considers both funding and market liquidity risks.</li> <li>For the NSFR analysis, only one stress scenario featuring inability of banks to roll-over longer-term funding positions for a period of a year. (still of exploratory nature, given the smaller experience on stressed NSFR).</li> </ul>
	Sensitivity analysis	N/A.
4. Risks and buffers	Risks/factors assessed (how each element is derived, assumptions)	<ul style="list-style-type: none"> <li>Funding liquidity risk is reflected in funding run-off rates and asset roll-over rates, the latter providing cash inflows related to non-renewal of maturing assets.</li> <li>Market liquidity risk is reflected in asset haircuts, which could be influenced by market movements, potential fire sales and collateral supply considerations.</li> </ul>
	Behavioral adjustments	<ul style="list-style-type: none"> <li>Liquidity from the central bank's emergency lending assistance (ELA) is not considered.</li> <li>The cash-flow analysis may consider some behavioral assumptions about a counterparty's ability or willingness to transact based on banks' solvency and liquidity conditions.</li> </ul>
5. Regulatory and market-based standards and parameters	Calibration of risk parameters	<ul style="list-style-type: none"> <li>The LCR tests are based on regulatory and stress parameters.</li> <li>The cash-flow analysis may incorporate relevant second-round effects.</li> <li>Stress funding run-off rates, asset roll-over rates, and asset haircuts are calibrated based on empirical evidence and relevant international experiences.</li> </ul>
	Regulatory/accounting and market-based standards	<ul style="list-style-type: none"> <li>LCR per Basel III; the hurdle at 100 percent (at the aggregate currency level).</li> <li>Net cash balance for the cash-flow analysis; to pass, a non-negative net cash balance is required, where the balance reflects net funding outflows and counterbalancing capacity.</li> <li>NSFR is not yet applicable but a targeted post-introduction limit of 100 percent was assumed.</li> </ul>
6. Reporting format for results	Output presentation	<ul style="list-style-type: none"> <li>Changes in the system-wide liquidity position, including important drivers for cash outflows, cash inflows and counterbalancing capacity.</li> <li>Distribution of banks' liquidity positions.</li> <li>Number of institutions with LCR/NSFR below 100 percent and/or negative net cash balance.</li> <li>Amount of liquidity shortfalls, including by currencies.</li> </ul>
7. Infrastructure		<ul style="list-style-type: none"> <li>Fully comprehensive infrastructure developed by IMF staff with a FINREP/COREP data repository integrated backbone.</li> </ul>

## Network Analysis

Domain		Assumptions
		Top-down by FSAP team
1. Institutional perimeter	Institutions included	<ul style="list-style-type: none"> <li>Seven SIs, and 433 Austrian LSIs.</li> </ul>
	Market share	<ul style="list-style-type: none"> <li>For seven SIs, about 60 percent of banking sector assets</li> <li>For all 440 entities (including the 7 SIs), above 95 percent of total assets of deposit-taking institutions</li> </ul>
	Data and baseline date	<ul style="list-style-type: none"> <li>Austrian central credit registry data</li> <li>Data as of December 2018</li> <li>Scope of financial consolidation: group-wide w.r.t. to Austrian subsidiaries</li> </ul>
2. Channels of risk propagation	Methodology	<ul style="list-style-type: none"> <li>Network analysis using Furfine algorithm and Espinosa-Sole tool</li> <li>Includes contagion channels from funding concentration and foreign counterparties</li> <li>Cascading effects from individual defaults through credit and funding counterparties</li> </ul>
	Linkages with solvency and liquidity stress tests	<ul style="list-style-type: none"> <li>The transmission of funding shocks is linked to liquidity stress test results by allowing banks to draw down their liquid buffers to replace funding from defaulting funding counterparties</li> </ul>
	Buffers	<ul style="list-style-type: none"> <li>Tier 1 capital</li> <li>Counterbalancing capacity</li> </ul>
3. Tail shocks	Size of the shock	<ul style="list-style-type: none"> <li>Outright defaults</li> </ul>
4. Sensitivity test	Factors	<ul style="list-style-type: none"> <li>Performance of collateral (for secured exposures)</li> <li>Loss given default (for unsecured exposures)</li> <li>Role of netting arrangements</li> <li>Elimination of exposures within the decentralized Raiffeisen sector</li> <li>Use of the CoMap methodology of Covi et al (2019) to account for Austrian banks' idiosyncratic calibrations and spillover risks to/from foreign counterparties using the Large Exposure database, gross exposure net of exemptions</li> </ul>
5. Reporting format for results	Output presentation	<ul style="list-style-type: none"> <li>Failed capital in percent of total capital</li> <li>Contagion index</li> <li>Vulnerability index</li> <li>Grouping of banks by OSII (for contagion index), and SyRB (for vulnerability index)</li> </ul>