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**Financial System Stability Assessment—Update**

Prepared by the Monetary and Capital Markets and European Departments

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This Financial System Stability Assessment (FSSA) Update is based on work of the Financial Sector Assessment Program (FSAP) Update team, which visited Austria in November-December 2007. The FSAP Update findings were discussed with the authorities during the Article IV consultation mission in March 2008.

The FSAP Update team comprised Daniel Hardy (Mission Chief), Li Lian Ong, and Alexander Tieman (all MCM); Erik Lundback (EUR); and Richard Britton and Fernand Naert (both consultants). The FSAP team received excellent cooperation from the authorities and market participants, and a number of the recommendations made during the missions are already being implemented.

The main findings of the FSAP Update are that:

- The Austrian financial system is generally robust. The financial system's rapid expansion into European emerging markets has brought higher profits and diversification, but also greater vulnerabilities, notably to credit risk, including that associated with foreign currency lending, in those countries.
- The recent global financial market turmoil has to date not had a major direct effect on Austrian banks, but has increased funding costs and may slow growth, which may eventually affect credit quality.
- Prudential regulation and supervision are being enhanced, starting from a high base. Effective implementation of the recently amended bank supervisory framework will require close cooperation between the Austrian National Bank (OeNB) and Financial Markets Authority (FMA). Further strengthening of international supervisory cooperation as an integral part of supervision remains another priority.

The main author of this FSSA Update is Mr. Hardy, with contributions from the rest of the FSAP team.

*FSAPs are designed to assess the stability of the financial system as a whole and not that of individual institutions. They have been developed to help countries identify and remedy weaknesses in their financial sector structure, thereby enhancing their resilience to macroeconomic shocks and cross-border contagion. FSAPs do not cover risks that are specific to individual institutions such as asset quality, operational or legal risks, or fraud.*

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## GLOSSARY

AML/CFT	Anti-money laundering/combating the financing of terrorism
ATM	Automatic teller machine
BA-Ca	Bank Austria Creditanstalt
BIS	Bank for International Settlement
BMF	Federal Ministry of Finance
BU	Bottom-up
CDS	Credit default swap
CESE	Central, Eastern, and Southeastern Europe
CIS	Commonwealth of Independent States
Erste	Erste Bank der oesterreichischen Sparkassen AG
EU	European Union
FMA	Financial Market Authority
FSAP	Financial Sector Assessment Program
HAA	Hypo Alpe-Adria-Bank International AG
IMF	International Monetary Fund
IOSCO	International Organization of Securities Commissions
LGD	Loss given default
LLPs	Loan loss provisions
LOLR	Lender of last resort
MiFID	Markets in Financial Instruments Directive
MTF	Multilateral Trading Facilities
NBFIs	Nonbank financial institutions
OeNB	Oesterreichische Nationalbank
OeVAG	Österreichische Volksbank AG
PDs	Probabilities of default
RoE	Return on equity
ROSC	Report on Observance of Standards and Codes
RZB	Raiffeisen Zentralbank Österreich AG
TD	Top-down
VSE	Vienna Stock Exchange

## EXECUTIVE SUMMARY

**The financial system has continued to strengthen since the 2003 FSAP and is generally sound.** Aggregate financial soundness indicators for banks—which dominate the financial sector—are at satisfactory levels, and most banks enjoyed strong results in 2007. Austrian banks and other financial institutions were agile in seizing the opportunities that opened up in Central, Eastern and Southeastern Europe (CESE) and the Commonwealth of Independent States (CIS). These exposures are now large relative to the domestic economy and bank capital (and the economies of the host countries), but are currently paying off in terms of earnings and growth. Also the profitability of domestic operations has recovered. Indicators for the insurance sector are also satisfactory, corporate leverage is decreasing, and households are not heavily indebted by industrial country standards.

**Recent turbulence in global securitized and interbank markets has to date had a limited direct effect on Austria.** Banks mostly have access to a solid base of deposits and follow an “originate-and-hold” strategy, and so had little exposure to affected markets. Stress tests conducted as part of the update suggest that market risks are of well contained, and liquidity is at comfortable levels.

**Nonetheless, certain potential sources of strain need to be monitored closely.** Some Austrian banks have taken on large exposures to CESE and CIS countries that exhibit rapid growth in lending (much of it in foreign currency) and macroeconomic imbalances, which may correct abruptly, leading to deteriorating loan quality. The increase in general risk aversion associated with the recent turbulence may exacerbate these strains. Furthermore, while these countries are diverse, contagion is possible through trade and investment linkages, and through the stance of international investors who may treat the region as a single asset class. Higher funding costs associated with the current global financial turmoil are likely to slow credit expansion, which could lead to a desirable “soft landing,” but could be followed by a sharper cycle of lower investment and deteriorating portfolio quality. Stress tests corroborate that managing credit risk in Austria, CESE, and the CIS is the main potential challenge for Austrian banks; a particular concern is the sizable indirect foreign exchange risk through foreign currency lending at home and abroad. Finally, operational risks and risks of political instability and/or an unpredictable judiciary remain to some degree in several of these countries.

**Notwithstanding these broader risk factors, the greatest strains realized in the recent past have stemmed from a few local institutions, where internal controls have failed to contain management errors and abuses.** These episodes reemphasize the importance of good corporate governance. Measures have been taken or are being taken to strengthen internal and external controls and governance, but more could be done, especially in banks and financial groups that are less exposed to market scrutiny.

**The authorities have further improved the regulatory and supervisory framework, starting from the high base documented in the 2003 FSAP.** Targeted analyses of assessment of observance of financial regulatory standards were undertaken as part of the FSAP Update. The analyses document that regulations have been amended to reflect a more risk-based approach and to promote the integration of European financial markets.

Supervisory practices have become more sophisticated, for example, through stress testing and the verification of institutions' risk management systems and models.

**The bank regulatory framework was recently amended, mainly by assigning banking inspection and analysis wholly to the OeNB.** The FMA will retain overall responsibility (and in particular responsibility for regulation and enforcement), besides its responsibilities in the nonbank area.

**The authorities are taking steps to enhance the coordination of bank oversight between the OeNB and the FMA.** For the new structure to be effective, the OeNB and the FMA will need to be fully and publicly committed to intense, mutual cooperation that goes beyond the letter of their legal responsibilities, and enshrine this commitment in their operating procedures. The effective coordination of supervision and enforcement is especially important.

**The efficacy of supervision—and financial sector efficiency—would be significantly enhanced by a tighter definition of the government's institutional liability for possible supervisory negligence in case a financial institution fails.** Investors and companies frequently sue for damages from the government when financial investments go bad. This creates moral hazard, burdens the taxpayer, and uses up scarce supervisory resources.

**It is important that troubled financial institutions exit, and the supervisory system should facilitate their quick and efficient resolution of troubled institutions.** A more formalized system of early remedial action may be useful. The deposit insurance schemes could be reviewed with the aim of minimizing resolution costs.

**The supervisor needs to have adequate resources for early detection.** The authorities are already taking steps to ensure that enough well-qualified staff are available to undertake meaningful analysis of financial institutions' increasingly complex operations, and to conduct frequent on-site inspections. Control by external auditors, while useful, cannot reliably achieve the timely monitoring that is necessary. In this connection, the system of state commissioners at (larger) banks appears to be inconsistent with modern bank supervisory practice and should be phased out.

**International cooperation needs to be further strengthened as an integral part of supervision in Austria, which is both the home and the host of important financial institutions.** Innovations have already been undertaken in this area, and more should be pursued, for example, through a series of cross-border crisis management drills.

**Following the institutional changes in Austria and the major amendment of regulations in recent years, attention needs to focus on improving practice and implementation.** Both the supervisors and the industry need to become familiar with many new and complex provisions. It will take some time for the full implications of Basel II and the Markets in Financial Institutions Directive (MiFID), for example, to become apparent, and meanwhile the industry has to refine the systems for their implementation.

**Many of the issues discussed above apply also to nonbank financial institutions (NBFIs) and securities market oversight.** The need for adequate staffing, more on-site inspection,

international cooperation, legal protection, and a period of regulatory consolidation are system-wide.

**Efforts to promote more long-term saving have had some success and are worth developing further.** Allowing more flexibility in savings contracts and ensuring a fully level playing field across fundamentally similar instruments, such as various non-term life insurance and pension contracts, would be useful. Equally, consumer protection will be an on-going concern; savers may often have difficulty understanding the risks, returns, and fees attached to complex long-term products.

**A list of main recommendations is attached.** Many of these recommendations correspond to priorities identified by the authorities, and they are already taking steps to implement them.

## Summary of Main Recommendations

Priority	All Sectors
High	Continue to develop cooperation with foreign home and host supervisors.
High	Define government institutional liability for financial sector supervision more narrowly.
High	Intensify the on-site inspection program and complementary off-site analysis and monitoring.
High	Enhance supervisory staff resources and expertise.
Medium	Raise administrative fines to European standards.
Medium	Define the responsibilities of external auditors in line with supervisory priorities.
Medium	Promote the periodic rotation of external audit firms.
<b>Banking</b>	
High	Have the FMA and the OeNB publicly acknowledge their common commitment to cooperate very closely in bank regulation and supervision, and corrective action and enforcement, and enshrine the commitment in operating procedures.
High	Intensify coordinated or joint inspections with foreign supervisors, and joint risk assessments of groups, followed by joint supervisory plans.
High	Follow up the planned crisis management exercise with peers in CESE countries with an exercise involving countries farther afield where Austrian banks are active.
High	Ensure that banks continue to manage indirect credit risk stemming from foreign currency loans, both domestically and abroad, and promote borrowers' awareness of the risks.
High	Set up a system mandating early remedial action when warning signs are detected.
High	Further develop stress testing, focusing especially on links between credit quality and macroeconomic performance in all markets where Austrian banks operate.
Medium	Give the FMA greater authority to object to group structures that impede effective supervision and corporate governance.
Medium	Reconsider current exemptions of small banks from some corporate governance regulations.
Medium	Phase out the appointment of state commissioners to banks.
<b>Insurance, Pensions, and Securities</b>	
High	Abolish the current restriction that 40 percent of contributions in Zukunftsvorsorge funds must be invested in European Economic Area stock markets with low market capitalization.
High	Become a full signatory to the International Organization of Securities Commission (IOSCO) Multilateral Memorandum of Understanding.
Medium	Ensure that tax and regulatory policies are neutral across otherwise comparable savings vehicles to support competition.
Medium	Support the expansion of the supply of well-trained actuaries.
Medium	Extend stress testing of insurance companies' and pension funds' liabilities and investigate the use of market-based soundness indicators.

## I. INTRODUCTION

- 1. This report updates and extends the findings of the 2003 FSAP, which found the Austrian banking sector to be generally sound.**<sup>1</sup> The expansion into CESE countries and some CIS countries helped boost the performance of the banking sector, offsetting low profitability in the home market. Supervision was based on strong institutions and a comprehensive and modern legal framework, consistent with European Union (EU) directives. However, the FSAP noted that integration of the system within the euro zone and the large and growing exposure to the CESE region gave rise to certain vulnerabilities.
- 2. Recommendations from the 2003 FSAP focused on measures to limit certain risks.** Specifically, it was recommended that the authorities (i) support the bank consolidation process; (ii) continue to strengthen governance; (iii) address the special challenges created by the foreign currency borrowing by residents and the state-sponsored pension scheme, the *Zukunftsvorsorge*; (iv) reform the deposit insurance scheme; and (v) upgrade arrangements for dealing with systemic problems, should they arise, including by the formulation of contingency plans. Many of the recommendations were broadly implemented (Appendix I).
- 3. Since 2003, the soundness of the financial system has been helped by generally satisfactory macroeconomic performance (Table 1).** While the economy remains closely integrated with those of Western Europe, corporations have benefited from strong exports to, and direct investment in, CESE countries. Going forward, a slowdown is likely in the context of current downside risks to the global economy.
- 4. The Austrian financial system remains bank-dominated (Table 2 and Appendix II).** There are still about 850 banks, organized into various sub-sectors and tiers, but six institutions hold about half of total assets, three of which are foreign-owned. An unusual characteristic of the Austrian economy is the strong demand for foreign currency loans.<sup>2</sup> The authorities have taken steps to raise awareness of exchange rate risk and enhance bank risk management of these loans, and as interest differentials have narrowed, the ratio of foreign currency to total loans has started to decline, and they are now almost all denominated in Swiss francs. Yet, the level is still high, especially for mortgage loans (Table 3).

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<sup>1</sup> See Austria: Financial System Stability Assessment (IMF Country Report 04/238).

<sup>2</sup> The issue is addressed in detail in the original FSAP and the 2005 Austria Selected Issues paper (IMF Country Report 05/249).

**Table 1. Austria: Selected Economic Indicators**  
(In percent, except where indicated; projections from 2008Q1)

Total area	83,850 square kilometers							
Total population (2006)	8.3 million							
GDP per capita (2007)	US\$ 44,966 (€ 32,800)							
	2002	2003	2004	2005	2006	2007	2008	2009
							Proj.	
	(Percentage changes at constant prices)							
Demand and supply								
GDP	0.9	1.2	2.3	2.0	3.3	3.4	2.1	1.7
Total domestic demand	-1.2	2.5	1.6	1.3	2.4	2.8	1.8	1.5
Consumption	0.5	1.4	1.7	2.0	2.1	1.7	1.7	1.2
Gross investment	-6.8	6.6	1.2	-1.3	3.7	6.5	2.2	2.5
Foreign balance 1/	1.9	-1.2	0.9	0.8	1.3	1.2	0.5	0.3
Output gap (percent of potential GDP)	-0.5	-1.4	-1.3	-1.5	-0.5	0.6	0.4	-0.1
Employment (percentage change) 2/	0.2	0.9	0.4	1.0	1.6	1.9	1.2	0.5
Registered unemployment rate (percent) 3/	6.9	7.0	7.1	7.3	6.8	6.2	6.1	6.2
	(Percentage changes; period averages)							
Prices and incomes								
Consumer price index	1.7	1.3	2.0	2.1	1.7	2.2	2.9	2.0
Unit labor costs (manufacturing)	0.8	-0.2	-9.4	0.5	0.4	0.5	0.7	0.5
	(Percent of GDP)							
General government finances 4/								
Balance	-0.8	-1.5	-3.9	-1.6	-1.6	-0.7	-0.7	-0.7
Structural Balance	-0.6	-0.7	-0.8	-1.0	-1.6	-0.9	-0.7	-0.6
Gross debt (end of period)	65.9	64.7	63.8	63.5	61.8	59.1	57.8	56.7
	(Billions of euros)							
Balance of payments								
Trade balance	1.4	-1.5	-0.8	-1.4	0.3	1.3	1.4	0.3
Current account	5.9	3.8	4.8	4.9	6.3	8.8	9.6	9.0
(In percent of GDP)	2.7	1.7	2.1	2.0	2.4	3.2	3.4	3.0
	(Percent; period average)							
Interest rates 5/								
Three-month interbank rate	3.3	2.3	2.1	2.2	3.1	4.3	4.8	...
10-year government bond	4.9	4.1	4.1	3.3	3.8	4.3	4.3	...
	(Levels; period average)							
Exchange rates								
Euro per US \$ 5/	1.1	0.9	0.8	0.8	0.8	0.7	0.6	...
Nominal effective exchange rate (2000=100) 6/	100.5	104.0	105.5	105.3	105.5	108.0	108.0	...
Real effective exchange rate (1990=100)								
ULC based 6/	98.1	102.8	106.0	108.4	106.1	106.7	108.4	...

Sources: Austrian authorities; Datastream; and IMF staff estimates and projections.

1/ Contribution to GDP growth.

2/ Payroll employment.

3/ In percent of total labor force.

4/ On ESA95 basis. The Maastricht Excessive Deficit Procedure (EDP) definition differs from this due to the inclusion of revenues from swaps. 2004 expenditures were recently revised to include a one-off capital transfer to the Austrian Railways amounting to 2½ percent of GDP.

5/ 2008 number is for April.

6/ 2008 number is for February.

Table 2. Austria: Structure of the Financial System

	December 2003			December 2007			
	Number	Assets (EUR billion)	Percent of total assets	Number	Assets (EUR billion)	Percent of total assets	Percent of GDP
Banking Sector	896	605.1	76.7	870	900.0	77.0	331.3
Joint stock and private banks	63	97.8	12.4	51	250.9	21.5	92.3
Savings banks	63	215.4	27.3	56	150.4	12.9	55.4
Rural credit cooperatives	596	144.0	18.3	558	222.0	19.0	81.7
Industrial credit cooperatives	69	31.9	4.0	69	69.3	5.9	25.5
State mortgage banks	9	45.7	5.8	11	87.6	7.5	32.2
Building societies	5	19.2	2.4	4	21.0	1.8	7.7
Special purpose banks 1/	91	51.1	6.5	93	87.4	7.5	32.2
Foreign bank branches 2/	0	0.0	0.0	28	10.9	0.9	4.0
Insurance sector	52	63.5	8.1	50	82.3	7.0	30.3
Life insurance companies	34	45.3	5.7	31	59.6	5.1	21.9
Non-life companies	43	15.1	1.9	42	18.7	1.6	6.9
Health insurance	8	3.2	0.4	9	4.0	0.3	1.5
Pension funds	20	9.1	1.2	19	12.9	1.1	4.8
Mutual funds	2,023	111.0	14.1	2,329	165.7	14.2	61.0
Other managed funds							
Other financial institutions	...	...	...	...	...	...	...
Total financial system	2,991	788.7	348.7	3,268	1,047	...	385.2
Memo items:							
Stock market valuation	...	44.8	...	...	157.8	5/	58.1
Bonds outstanding	...	287.8	...	...	407.5	5/	150.0
o/w state and other public entities	...	129.9	...	...	147.7	5/	54.4
Number of bank employees	75,245			79,180			

Source: OeNB.

1/ Includes severance funds, investment companies, and real estate funds.

2/ Foreign bank branches pursuant to Article 9 of Austrian Banking Act.

3/ The changes in the total assets of the joint stock and savings banks partly reflect reclassification among sectors.

4/ December 2006.

5/ November 2007.

**Table 3. Austria: Banking Sector Financial Soundness Indicators**  
(In percent; end of period)

	2004	2005	2006	2007	2007 Quartiles		
					25	50	75
<i>Capital adequacy</i>							
Regulatory capital/risk-weighted assets	12.4	11.8	11.8	12.7	11.9	14.9	19.3
Regulatory Tier I capital/risk-weighted assets	8.5	8.2	8.0	8.9	9.5	12.7	16.9
Capital/assets	4.9	4.8	5.2	6.5	5.5	7.9	10.9
<i>Asset composition</i>							
<i>Sectoral distribution of bank credit/total gross bank credits</i>							
Nonbank financial institutions	3.0	3.6	3.7	3.3	0.0	0.0	0.5
Nonfinancial corporations	22.4	20.4	19.7	18.6	5.7	13.5	22.3
Households	19.8	20.1	18.9	18.0	23.7	41.0	51.8
<i>of which: housing loans</i>	10.3	10.1	10.4	9.9	...	...	...
personal loans	9.4	10.0	8.5	8.1	...	...	...
Public Sector	6.4	5.4	4.9	4.0	0.1	2.1	5.3
Nonresident non-banks	11.5	12.9	13.7	15.9	0.2	1.1	3.8
Domestic and non-domestic banks.	37.1	37.6	39.1	40.2	...	...	...
<i>Geographical distribution of loans/total loans</i>							
Domestic	73.4	70.6	68.6	66.1	...	...	...
Cross-border	26.6	29.4	31.4	33.9	...	...	...
<i>of which: EMU</i>	8.2	10.1	10.2	11.3	...	...	...
CEEC	n.a.	9.4	9.6	12.3	...	...	...
Other	n.a.	9.9	11.6	10.3	...	...	...
<i>Asset quality</i>							
Nonperforming loans/total gross loans	2.7	2.6	2.1	...	1.8	3.2	5.2 1/
doubtful	1.7	1.6	1.2	...	...	...	...
irrecoverable	0.9	1.0	0.9	...	...	...	...
Loan loss provisions/loans to non-banks, dom. and non-dom.	3.3	3.1	2.9	2.4	...	...	...
Loan-loss provisions/nonperforming loans	70.8	71.5	75.3	...	...	...	...
Nonperforming loans net of loan-loss provisions/Tier 1 capital	15.5	15.1	9.6	...	-0.1	0.0	13.5 1/
Total foreign currency-denominated loans/total loans	24.4	25.9	24.8	23.6	2.4	7.9	15.0
Foreign currency-denominated loans to residents/total claims on residents	19.0	20.1	18.7	16.2	...	...	...
Foreign currency-denominated loans to households/total claims on households	29.3	31.0	30.8	27.4	...	...	...
Foreign currency-denominated loans to corporations/total claims on corporations	14.6	13.4	10.8	8.1	...	...	...
Large exposures/capital (above 10 percent)	85.8	89.7	77.5	56.4	20.8	58.3	115.4
10-largest credit/net credits (loans to nonbanks)	5.0	6.8	6.8	6.0	...	...	...
<i>Earnings and profitability</i>							
Return on assets	0.6	0.6	0.7	0.7 2/	0.3	0.6	0.8 2/
Return on equity	14.8	14.8	16.9	16.8 2/	4.1	6.4	9.9 2/
Net interest margin	1.2	1.1	1.0	1.0	...	...	...
Gross income/average assets	2.3	2.3	2.2	2.1	...	...	...
Net interest income/gross income	74.3	72.2	71.1	69.1 2/	76.1	83.2	89.8 2/
Trading income/gross income	4.2	4.1	4.1	1.7	0.0	0.1	0.5
Noninterest expenses/gross income	72.9	71.9	68.8	66.4 2/	65.1	72.3	80.5 2/
Personnel expenses/noninterest expenses	50.1	50.1	50.5	50.4	53.5	58.4	62.1
Spread between domestic lending and deposit rates	1.3	1.2	0.9	0.8	...	...	...

**Table 3. Austria: Banking Sector Financial Soundness Indicators (concluded)**  
(In percent; end of period)

	2004	2005	2006	2007	2007 Quartiles		
					25	50	75
<i>Liquidity</i>							
Liquid assets/total assets	28.9	27.4	27.6	26.8	20.4	25.3	34.1
Liquid assets/short-term liabilities	73.8	68.0	68.6	67.0	64.4	90.6	114.0
Foreign currency-denominated liabilities/total liabilities	20.3	20.5	20.0	17.2	2.7	7.0	12.5
Deposits/assets	66.1	65.3	63.8	62.6	...	...	...
Loans/deposits	113.9	112.9	115.8	116.3	...	...	...
<i>Sensitivity to market risk</i>							
Off-balance sheet operations/assets	224.6	207.5	208.1	200.2	...	...	...
<i>of which:</i> interest rate contracts	190.1	171.9	170.7	187.8	...	...	...
forex contracts	33.1	33.1	35.1	38.6	...	...	...
other derivatives	1.3	2.4	2.5	2.2	...	...	...
<i>Duration of assets/total assets</i>							
Less than 3 months	51.2	61.1	59.3	62.4	...	...	...
Between 3 months and 1 year	14.7	13.7	12.2	13.4	...	...	...
Between 1 and 5 years	13.9	12.4	11.5	10.7	...	...	...
More than 5 years	8.2	8.3	8.1	7.6	...	...	...
<i>Duration of liabilities/total liabilities</i>							
Less than 3 months	49.1	58.6	54.4	56.9	...	...	...
Between 3 months and 1 year	12.7	13.4	13.5	14.6	...	...	...
Between 1 and 5 years	16.6	14.8	14.0	12.4	...	...	...
More than 5 years	9.2	9.1	8.9	10.0	...	...	...
Net open position in foreign exchange/capital	2.1	3.3	3.8	1.5	0.1	0.9	3.3

Source: OeNB.

1/ Data as of end-2006.

2/ Data as of 2007Q3.

5. **Almost all the large Austrian banking groups now have major subsidiaries in several CESE countries and some CIS countries.** Often, these subsidiaries are large relative to the host countries' financial systems. Austrian exposures to the CESE are far larger (relative to GDP) than those of its European peers: in 2006, the total assets of the six largest Austrian banks in the CESE region were equivalent to over 60 percent of GDP (a fifth of total banking assets or 3 times regulatory capital), and generated about 40 percent of banks' profits. This total is roughly evenly divided between the CESE countries that joined the EU in 2004, and the remainder.

6. **Some segments of the nonbank financial sector have experienced significant growth in recent years.** Occupational pension fund assets, non-term life insurance, and *Zukunftsvorsorge* pension accounts have grown, but Austrians still rely substantially on state-provided pensions. Austrian insurers are active in the CESE region, in part in reaction to slow growth in the domestic non-life business. Austria's investment funds market has expanded rapidly in recent years, and is ranked eighth in Europe in terms of assets under management. The stock of bonds outstanding and equity market capitalization have increased substantially since 2003, in part due to the expansion of many listed companies into CESE

markets. The Vienna Stock Exchange (VSE) has various cooperation agreements with exchanges in CESE countries.

7. **Managerial failings and/or fraud have led to a few episodes of difficulties in certain financial institutions.**<sup>3</sup> Common features of these cases include failure to reveal relevant material to internal auditors or supervisory boards, conflicts of interest, and the withholding of information from supervisors and the public. The cases do not appear to have persistently weakened confidence in the system, but in one case the authorities felt compelled to provide a guarantee to creditors, though it was not called upon.

## II. THE BANKING SECTOR

### A. Regulation, Supervision, and Enforcement

#### Reform of the supervisory architecture

8. **The FMA is the integrated regulator and supervisor for the financial system.** It was created in 2002 with the aim of enhancing supervision of cross-sector linkages and concentrating financial sector expertise under one roof. The OeNB until now has undertaken most of the on-site and some off-site bank supervision. The Federal Finance Ministry (BMF) retains responsibility for certain legislative matters. Coordination is promoted through a Financial Sector Committee. Larger banks host a so-called State Commissioner, who takes part in supervisory board meetings in order to monitor compliance with laws and regulations. In addition, the authorities rely upon external auditors, not only to certify data but also to check compliance with regulation. The banks in some sub-sectors have systems for mutual monitoring.

9. **Following the episodes of banking difficulties in the past few years, the authorities have amended legislation to shift more responsibility for the conduct of banking supervision to the OeNB.** The main change was to give the OeNB sole responsibility for on-site supervision from January 2008. The FMA now determines, with the OeNB, the schedule of regular inspections (currently, major banks are to be inspected annually, and medium-sized banks every two years), and in addition, both agencies and the BMF are able to request follow-up or ad hoc inspections. For off-site supervision, a joint OeNB-FMA database is being established, but the OeNB is tasked with analysis. The FMA retains licensing and enforcement powers, and all responsibilities for NBFIs. In addition,

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<sup>3</sup> The most prominent case was that of Bawag, Austria's fourth-largest bank. The discovery of a fraud and a subsequent U.S. lawsuit triggered a deposit run in early May 2006, which was successfully stemmed (see SM/07/112, especially paragraphs 11 and 26). Other recent cases involved a financial service provider and nonbank affiliates of a bank; in both cases malfeasance appears to have been present.

measures were enacted to further strengthen governance and internal controls in financial institutions.<sup>4</sup>

**10. The OeNB and the FMA will need to be fully and publicly committed to intense cooperation if the supervision under the new structure is to be effective and efficient.**

The close coordination of supervision and enforcement is especially important. The two institutions should acknowledge their joint responsibility for the effectiveness of the new system, which goes beyond the letter of their respective legal responsibilities. Furthermore, it is incumbent on their management to foster a culture of mutual trust, open communication, and common objectives.

**11. The authorities are taking steps to make fully operational closer OeNB-FMA cooperation.** Effectively the OeNB and the FMA are establishing joint teams to conduct oversight of individual banks. The planned common database is another important element. The two institutions will need to keep under review internal procedures to enhance the efficiency of cooperation.

**12. One element of the recent reforms was to reduce the number of state commissioners, but the eventual abolition of this function should be considered.** The state commissioners will now be appointed to attend the supervisory board meetings of banks with assets over €1 billion; the threshold had been €375 million. Yet, the practice adds to the public perception that the government is responsible for banks' errors and wrong-doing (and eventual losses). Moreover, recent experience suggests that management can circumvent scrutiny by state commissioners when they want. Hence, the budget for state commissioners, though not large, could be better used to finance resources that are fully integrated into the prudential supervisory process.

**13. Heavy reliance will continue to be placed on external auditors for supervisory work, yet the effectiveness of this system may be diminishing.**<sup>5</sup> Guidelines on external auditors' reports and the FMA's practice of meeting with external auditors, checking their reports, etc., reinforce the system. The banking act was recently amended to foster prompt reporting by external auditors. Nonetheless, experience elsewhere suggests that auditors are unlikely to report a problem to the supervisor until after a thorough investigation, thus hindering a prompt reaction. Furthermore, it is questionable whether most auditors have the capacity or incentive to verify a complex credit risk model and new client-facing conduct of business rules, for example. Therefore, the importance of direct inspection and monitoring by the authorities is growing (notably for the large banks), and correspondingly the tasks of auditors may have to become more differentiated.

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<sup>4</sup> "Fit and proper" rules of the chairmen of supervisory boards have already been introduced, and internal audit provisions have been strengthened. Supervisory boards are now mandated to include individuals with financial expertise. However, small banks have been excluded from some provisions (notably the requirement to have persons with extensive relevant expertise on their supervisory boards) that were viewed as too onerous for them.

<sup>5</sup> The reliance on external auditors is an issue also for nonbank financial institutions.

## Banking supervision and regulation

### 14. **The Austrian authorities have made great efforts since 2003 to enhance the quality of banking supervision and keep up-to-date with banking sector developments.**

Legislation and regulations have been improved, and supervisory structures and practices have been enhanced. An important step was the prompt implementation of the EU Capital Requirement Directive, which has reinforced the move to risk-based supervision. A number of issues are worth stressing:

- Monitoring and analysis will need to be kept up to date, for example, through the refinement of macro-scenario analysis for the exposures to CESE and CIS regions and greater use of market-based indicators (see below). The further intensification of on-site inspection should remain a priority. While much attention must be devoted to the large banks, the authorities recognize that smaller banks and especially those not overseen within a group structure should not be neglected.
- Staff resources remain tight. Both the OeNB and the FMA will need to compete with the private sector for specialized expertise, to which end both compensation and career prospects must be attractive. It is also worth noting that direct supervisory costs are not high in Austria.
- The authorities will need to develop further on-going cooperation with supervisors of countries in which Austrian banks are active, and those who are responsible for the parents of Austrian institutions. Coordinated or joint inspections—which have already been undertaken—are worth pursuing, as would greater efforts to undertake joint risk assessment followed by joint supervisory plans.
- The authorities could also further assist their counterparts abroad in developing a consumer financial education campaign and issuing guidelines on foreign currency borrowing. The authorities have co-operated effectively with Austrian banks in this area.
- Additional reforms may be worth considering to strengthen governance in banks. Certain “fit and proper” requirements might be applied to more members of the supervisory board, while allowing for the lower demands on board members in banks engaged in less complex business. However, regulatory measures may be especially important for smaller banks that are less subject to market discipline and public scrutiny, notably those that are not part of group structures. Hence, also the boards of small banks (and nonbank institutions) should include members with relevant expertise.<sup>6</sup>

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<sup>6</sup> Many small banks are cooperatives. Because their ownership is spread across a population with little financial expertise and non-tradable shares, the control of management by owners is affected. Other governance mechanisms need to be stronger to compensate.

- Banks should be encouraged to rotate their external audit firms, and not just individual auditors, in order to limit the danger that external auditors become too beholden to their bank clients.<sup>7</sup> The role of auditors in the Austrian supervisory system warrants strict practices, given the reliance that is placed on auditors for supervision-related purposes.
- It may be necessary to review regulations governing financial groups, and in particular connections between a bank and nonbanks, especially where the latter are domiciled outside the EU. The FMA needs to be given the authority to object to or unwind the creation of group structures that impede effective supervision and corporate governance.
- The authorities were able quickly to survey financial institutions for their on- and off-balance sheet exposures to financial vehicles affected by recent strains. The authorities should consider repeating such a survey from time to time to quantify these exposures and ensure that the associated risks are well-managed.

15. **Banks (and other financial institutions) face a reputation risk arising from exposure to money laundering/financing of terrorism risk in both domestic and international activities.** With regard to the latter especially, compliance with the international anti-money laundering/combating the financing of terrorism (AML/CFT) standard may be uneven across the region. Efficient implementation of sound preventive measures in Austria is needed to prevent foreign entities being used to channel illegal funds into the domestic financial system. An assessment of Austria compliance with the Financial Action Task Force FATF 40+9 Recommendations will be conducted by an IMF team in September 2008. Following finalization of the assessment report, an AML/CFT Report on Observance of Standards and Codes (ROSC) will be prepared and circulated to the Board for information.

#### **Enforcement, corrective action, and intervention**

16. **Even with the best supervisory system, individual financial institutions may get into difficulties and fail.**<sup>8</sup> Attempting to preempt all failures by supervisory means would place an overwhelming regulatory burden on the industry and thus on clients, and stifle innovation. Hence, the regulatory and supervisory framework should, *inter alia*, facilitate orderly exit and the smooth management of stress situations.

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<sup>7</sup> One possibility would be to establish an expectation that audit firms will be rotated periodically, while allowing a bank to keep a firm longer if it can provide good reason and the audit firm concerned is large enough that rotation of key auditors is effective.

<sup>8</sup> This statement applies to all financial institutions, not just banks, although banks are particularly prone to sudden crises.

17. **The authorities have already elaborated contingency plans for dealing with bank failures and other problem cases.** In the recent episodes in Austria, the authorities generally acted expeditiously once it became fully clear that an institution was under severe strain. As a member of the European System of Central Banks, the OeNB has mechanisms in place to monitor banking sector liquidity and provide extra liquidity if needed.

18. **The FMA and the OeNB will need to cooperate especially closely in the enforcement of regulations and intervention, and they should publicly acknowledge their common commitment.** The separation of supervision and enforcement powers can be cumbersome and is potentially dangerous. Experience elsewhere suggests that, when a controversial case arises, one institution may be blamed more than the other, and therefore necessary cooperation is disrupted. It is therefore suggested that both institutions explicitly acknowledge and explain that they are working for the seamless integration of all aspects of regulation, supervision and enforcement, and that any criticism should be directed at them jointly. They will also need to review procedures for dealing with problem cases to predetermine procedures and specific responsibilities (for example, for communication with the public).

19. **The authorities' plans to conduct a crisis management exercise with partners in CESE countries are commendable, and should be extended.** The first exercise is to be conducted with neighboring countries, but that could be followed by an exercise involving those further afield, including perhaps non-EU members. The exercises should be based on scenarios involving difficult choices in dealing with an insolvent bank(s).

20. **Experience elsewhere suggests also that it can be valuable to set up a system that mandates a decision on required remedial action promptly after warning signs are detected.** The authorities (and the various banking associations) monitor early warning indicators, and they have a history of taking enforcement action. The next step is to establish a series of explicit, and perhaps published, quantitative and qualitative triggers for remedial action.<sup>9</sup> While flexibility is needed in the range of actions to be taken, such a commitment can help prevent undue forbearance and reinforce good incentives for financial institutions.<sup>10</sup> Progress on early remedial action could help accelerate EU-level initiatives in this area.

21. **The current deposit insurance schemes is adequate and in line with EU standards, but could be improved.**<sup>11</sup> At present, separate deposit insurance schemes are

<sup>9</sup> This is all the more important as the group-based structure of some of the main Austrian banks would complicate the timely injection of fresh capital in case of major problems.

<sup>10</sup> In this connection, commercial banks' shareholdings in the OeNB may create the impression that an arm's length relationship is not maintained. While this feature does not appear to have been of practical importance, disposal of these shareholdings could be considered.

<sup>11</sup> See Box 3, Appendix II. Deposit insurance arrangements are not analyzed in depth here because they have not changed substantially since the 2003 FSAP.

operated by each sub-sector of the banking system, and payouts are made in due course after a depositor of an affected bank applies for compensation. Yet, if a bank needs to be resolved, making insured deposits rapidly available would reduce liquidity costs to bank depositors and support confidence in the overall banking system. To this end, the deposit insurance schemes should develop the necessary information technology systems and legal provisions to identify insured deposits, so that payouts could be immediate in case of need. Consideration should be given to establishing procedures to transfer insured deposits and corresponding assets from an intervened bank to a sound bank, which, however, may require revision to the legal framework for bank resolution.

### **Government institutional liability for financial sector supervision**

22. **The effectiveness of financial sector regulations and their enforcement is being impaired by a very wide interpretation of government institutional liability for financial sector supervision (“Amtshaftung”).** Currently, the authorities may be sued for even slight negligence in supervision and enforcement. There seems to be a public perception that the regulatory authorities should be able to prevent any bad outcome, such as instances of fraud or mismanagement. Many law suits for large sums have been filed against the authorities, and in some cases substantial payouts were mandated by the courts; individual officials have been threatened with suits. International standards require a higher level of legal protection of supervisors.

23. **The result is moral hazard: investors will be less careful if they expect that they can get compensation by suing the government should the investment go bad.** Legal provisions in this area appear to shift much commercial risk from economic agents to the authorities. The direct cost is borne by the Austrian taxpayer, and there is an indirect cost in terms of overall efficiency of the financial system. Furthermore, the administrative cost of dealing with these cases, especially in terms of supervisors’ time, has been significant. These costs may rise and vulnerability to legal action may increase as supervision becomes more risk-based, because the role of expert judgment will increase. Although the authorities have a history of taking enforcement measures despite the threat of legal action, the possibility of a “chilling effect” on their willingness to take action cannot be excluded.

24. **Government institutional liability for financial sector supervision should, therefore, be defined more narrowly.** Some steps in this direction have been taken (notably the 2005 Act that required that any suit be brought against the Federal government and not individual agencies), but more is needed. One possibility may be to amend laws to clarify that regulation and supervision are undertaken primarily in the general public interest. There should be explicit recognition that investors—most importantly shareholders, but also other creditors—bear the risks of their investment, including operational risks and counterparty risks. There needs to be general recognition that a bad outcome is not in itself evidence of negligence by the supervisor.

## B. Stability

### Performance and stability indicators

25. **Banks have enjoyed rising profitability.** The level of domestic bank profitability has risen, mainly because banks have improved performance through greater cost efficiency and the successful pursuit of fee income. However, domestic interest margins continue to be squeezed by intense competition. Profitability has held up in many CESE markets; as some sectors have matured, new, highly profitable activities such as retail lending have grown in importance.

26. **Capital and leverage ratios have remained stable despite a rapid expansion in balance sheet size.** Non-performing loan ratios are falling. For the system as a whole, expansion into CESE and CIS markets has diversified risk away from Austria, and those countries are themselves diverse in both macroeconomic and microeconomic risk factors.<sup>12</sup> However, certain markets are important to individual banks. Moreover, there remains the risk that investors perceive CESE and much of the CIS as one investment class, and therefore the countries—and Austrian banks—may be vulnerable to contagion.

27. **The banking sector as a whole exhibits adequate liquidity.** Liquidity indicators have been broadly stable, at least through end-2007. The large banks either have a broad retail base themselves or have access to the retail base of the lower tiers of their sub-sectors, and expansion in CESE countries is not heavily dependent on short-term market funding (Box 1). Reportedly, the mortgage banks also have secured longer-term financing.

28. **The distribution of performance indicators across banks reveals strengths, but also potential longer-term concerns.** The quartile distribution is dominated by the situation of the numerous smaller banks, while the sectoral aggregates reflect the weight of the large banks. Many small banks have much higher capital relative to assets, and correspondingly low return on equity. While that situation is not of immediate prudential concern, these banks would find it difficult to attract outside capital. Furthermore, there are a large number of smaller banks with relatively concentrated loan portfolios.

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<sup>12</sup> The portfolio concentration of Austrian banks' combined foreign claims, as measured by the Herfindahl index (by country), is the lowest among all Bank for International Settlement (BIS) reporting countries (BIS Quarterly Review, December 2007). Austrian banks allocate 47 percent of foreign claims to emerging Europe, the bulk of which is spread across eight (mainly neighboring and EU-member) countries.

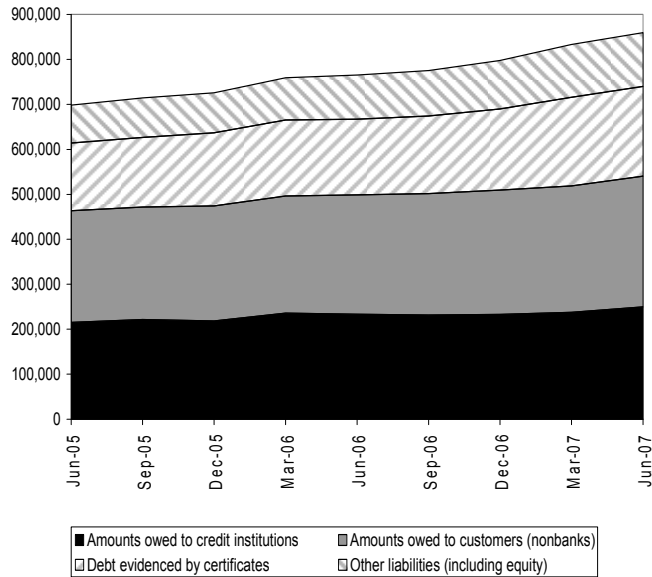
**Box 1. Financing Sources and Exposures to CESE Countries**

The funding structure of Austrian banks appears to be stable (Figure 1). The same holds for their foreign subsidiaries, where local deposits contribute a rising share of funding, especially local currency funding (Figure 2). Interbank loans from parents account for 10 percent of total funding, with other types of lending from parents representing another 10 percent. The balance comprises mainly equity and debt issuances by the foreign subsidiary.

Parents' exposure to CESE countries, via lending to their foreign subsidiaries and direct loans into those countries, has remained relatively flat in absolute terms since 2005. Given the continuing rise in parents' total assets, exposure has declined as a proportion of their assets.

However, strong growth in local lending to nonbanks by foreign subsidiaries has driven up the banking groups' total exposure to emerging European countries. Subsidiaries' rising investment in securities has also increased group exposures. Rising local deposits represents the main source of funding in most markets. Meanwhile, OeNB data suggest that direct lending by Austrian parents to non-subsidiaries in emerging Europe have remained relatively stable in aggregate, although there has reportedly been an increase in direct lending to larger corporates in some markets, in part in response to administrative measures taken by those countries authorities to slow credit growth.

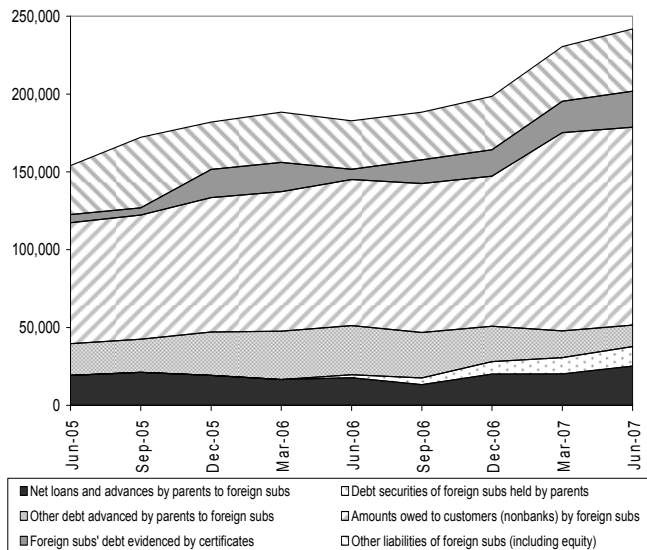
Figure 1. Austria: Funding Sources of the Banking System\* (In millions of euro)



Source: OeNB.

\* Figures obtained from unconsolidated balance sheet.

Figure 2. Austria: Funding Sources of Banks' Foreign Subsidiaries\* (In millions of euro)



Source: OeNB; and IMF staff estimates.

\* Some data are derived from differences between consolidated and unconsolidated balance sheets.

29. **Banking system soundness is supported by the balance sheet strength of the domestic non-financial sector; the main outstanding concern is the foreign exchange exposure of some borrowers.** (Table 4). Household indebtedness relative to income is comparatively low, and corporate leverage has been falling. Real estate prices have been much steadier than in many European countries. Consistent data on the financial position of the corporate and household sectors in markets abroad where Austrian banks operate were not available.

**Table 4. Austria: Non-Financial Soundness Indicators**  
(In percent)

	2003	2004	2005	2006	2007
<b>Corporate sector</b>					
Total debt as a percentage of equity 1/	251.0	206.5	119.1	114.4	112.9
Total debt as a percentage of GDP	84.1	81.2	82.9	83.7	...
Profitability (return on equity) 1/	24.8	23.3	14.6	14.7	15.0
Number of applications for protection from creditors (number)	2,957	2,972	3,203	3,084	3,023
<b>Household Sector</b>					
Total debt as a percentage of GDP	48.4	50.6	54.2	53.4	53.1
Financial saving ratio as a percentage of GDP	6.6	7.2	7.8	7.2	7.3
Savings rate	8.7	8.9	9.3	9.7	...
<b>Real estate sector</b>					
House price inflation	0.4	-2.7	4.8	3.1	5.1

Source: OeNB.

1/ Break in series in 2005.

2/ 2007Q3.

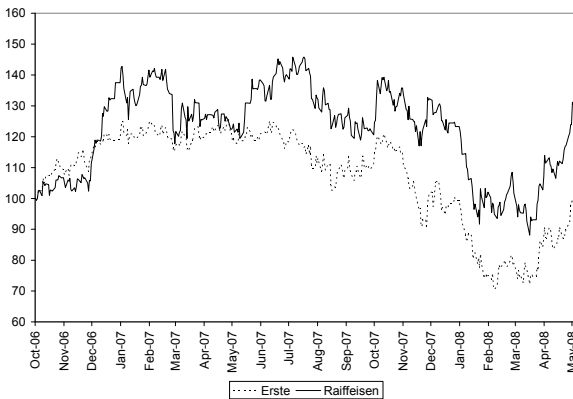
30. **The recent financial markets turmoil does not appear to have had a major impact on Austrian banks.** The FMA and OeNB acted expeditiously in compiling information on banks' exposures to affected asset classes and off-balance sheet risks (including special investment vehicles, asset-backed commercial paper and sub-prime mortgages), which turned out to be modest; write-downs reported to date were easily absorbed in strong 2007 profits. Banks have not made extra use of central bank financing. Furthermore, one major bank was recently able to raise additional capital to support its expansion in CESE, and demand for private placement of securities and Pfandbriefe (a form of covered bond) has reportedly held up relatively well. Hence, the impact of higher funding costs will be phased in, and currently does not appear to be more severe than what was seen in past tightening cycles.

### Market-based indicators

31. **Market-based indicators, which the authorities have begun to monitor, suggest that the exposure of Austrian banks to CESE and CIS countries is perceived as generating higher returns but also higher risks.** However, the broader exposure brings also diversification benefits. The major Austrian banks have posted strong positive stock price performances in recent years, although they have been affected by the recent turmoil in global financial markets (Figures 3 and 4). On a risk-adjusted basis—using the Sharpe

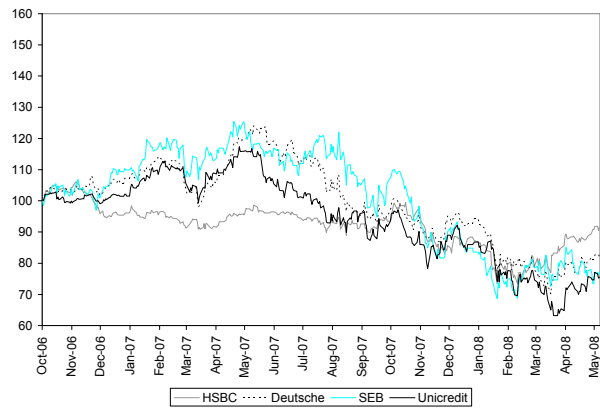
ratio—the stock price returns have been in line with those of other European banks (Figures 5 and 6).<sup>13</sup> The series for different banks display periods of low correlation, suggesting that investors distinguish among different domestic and CESE country exposures.

Figure 3. Austrian Banks' Stock Performance 1/ (October 1, 2006 = 100)



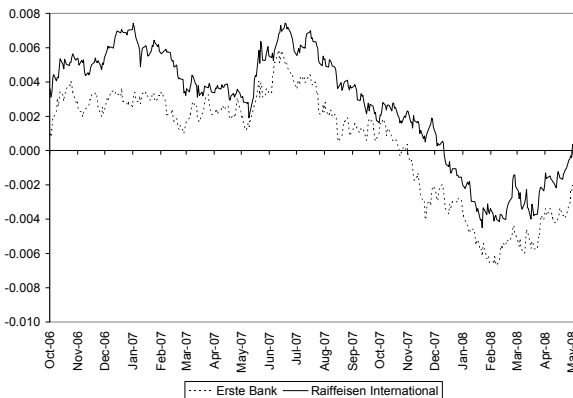
Source: Bloomberg.  
1/ BACA and Volksbank stock prices are excluded due to their illiquidity in the Austrian stock market.

Figure 4. Major European Banks' Stock Performance (October 1, 2006 = 100)



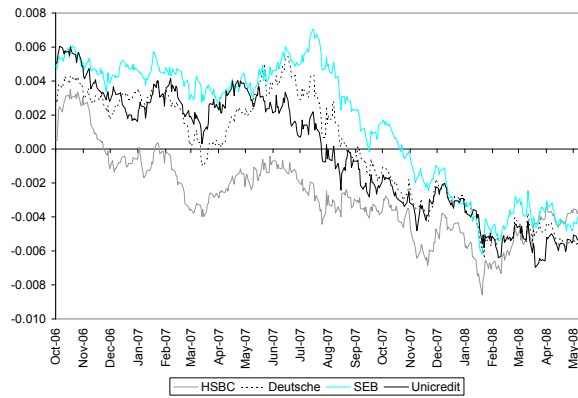
Source: Bloomberg.

Figure 5. Austrian Banks' Sharpe Ratios



Sources: Bloomberg; and IMF staff calculations.

Figure 6. Major European Banks' Sharpe Ratios



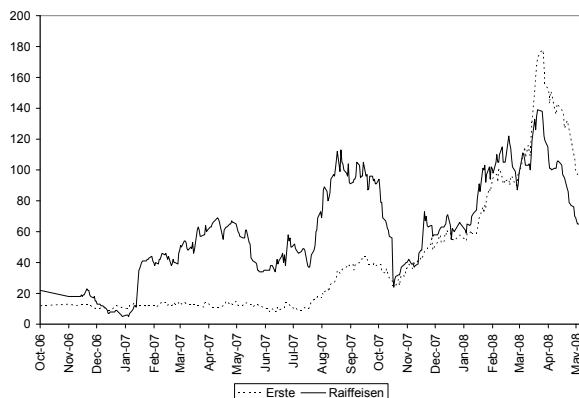
Sources: Bloomberg; and IMF staff calculations.

**32. The credit default swap (CDS) spreads of Austrian banks are normally somewhat wider than those of large diversified European banks, indicating that the former are perceived to have greater credit risk. Since the beginning of 2008, Austrian banks' CDS spreads have widened further, as have those of major European comparator**

<sup>13</sup> The Sharpe ratio,  $S$ , is a measure of a portfolio's excess return relative to the total variability of the portfolio  $S = [R - R_f] / \sigma$ , where  $R$  is the actual asset return,  $R_f$  is the return on a benchmark asset, such as the risk-free rate of return, and  $\sigma$  is the standard deviation of the excess return. The higher the Sharpe ratio, the better the historical risk-adjusted performance. However, the Sharp ratio does not take into account correlations and thus diversification effects.

banks, as investor concerns began to focus on the risk of recession rather than the condition of the interbank market and sub-prime related losses, but there have been no high spikes (Figures 7 and 8).

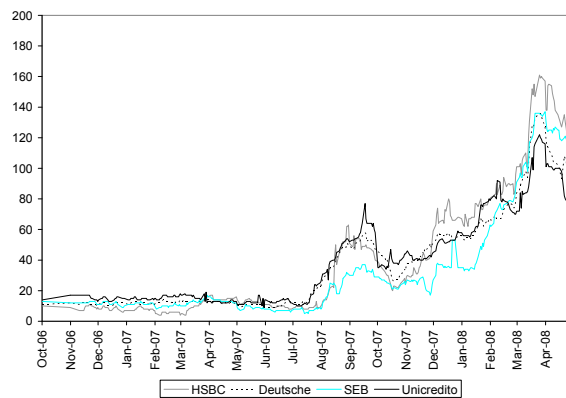
Figure 7. Austrian Banks' CDS Spreads  
(In basis points)



Source: Moody's KMV Creditedge.

Note: CDS spreads are expected default frequency-implied spreads.

Figure 8. Major European Banks' CDS Spreads  
(In basis points)



Source: Moody's KMV Creditedge.

Note: CDS spreads are expected default frequency-implied spreads.

### Stress test results

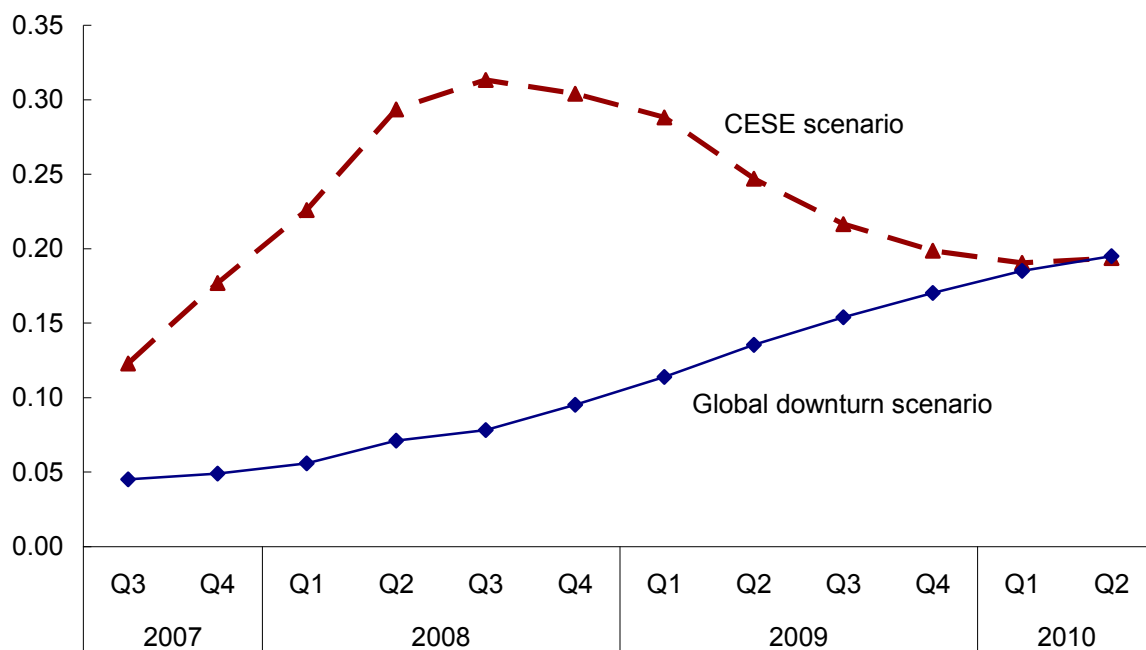
33. **A battery of stress tests was undertaken by the authorities and major banks in cooperation with the FSAP team (Appendix III).** Two macroeconomic stress scenarios center around shocks coming from CESE and a global downturn that causes a prolonged domestic recession. The scenarios are more severe than anything witnessed in the post-transition period in CESE and CIS countries, or in Austria's post-war economic history. The assumed realization of market risks and liquidity shocks would represent extreme events in mature markets, and are comparable to those undertaken in FSAPs for other European countries.

34. **Stress tests show that the main sources of risks for Austrian banks are credit risk stemming from exposures to CESE and CIS countries, indirect credit risk associated with foreign currency lending, and other credit risk from domestic lending.** The scenarios generated substantial strain on the banks, resulting in very low, or in some cases, negative return on equity, although capital buffers generally remained intact (Figure 9).<sup>14</sup> The largest impact followed from losses in CESE and the CIS, but only in a few cases would the losses affect capital given the baseline level of profitability. All of the large banks stayed well above the 8 percent minimum capital requirements under stress. A number of smaller banks would fall short of the minimum capital requirements under the macroeconomic scenarios. Still, these banks only represent only a small percentage of total

<sup>14</sup> The tests were run using mid-2007 data, which were the most recent available at the time of the December 2007 mission.

banking assets, and many of these banks would likely benefit from support within their sub-sector of the banking system (see Box 2, Appendix II), forestalling systemic effects. The estimated indirect credit risk related to exchange rate movements confirms the resilience of the system, although the overall impact and that on some of the large banks is considerable.

Figure 9. Austria: Estimated Credit Losses under Macroeconomic Stress 1/  
(Quarterly impact averaged across the six largest banks in percentage point of capital)



Source: OeNB and banks' calculations.

1/ Loss estimates based on "top-down" methodology.

35. **Additional stress tests suggested that market risks are generally modest, with the banks taking only small active positions.** Liquidity stress tests indicate that the large banks would likely not see major strains in the event of a general squeeze on sources of liquidity, over and above the effect on profits of generally higher market price for liquidity in the unsecured market.

36. **The stress test results are subject to model risk and other caveats.** Given the favorable macroeconomic developments over the last years in Austria, CESE countries, and the CIS, credit risk indicators based on data from this period are likely to underestimate risks. Although the CESE scenario is considered severe but plausible, for certain countries one cannot exclude a sharper adjustment in current account deficits, possibly accompanied by large swings in CESE currencies versus the Euro and major balance sheet effects. Further, a severe downturn might result in contagion among the countries in CESE and the CIS, and consequently a larger spillover to Austria than seen historically. Moreover, the global downturn and CESE scenarios may be related and could occur simultaneously. However, the stress tests used a number of conservative assumptions (for example, on loss given default

rates) to help counterbalance these caveats, and sensitivity analyses around the baseline stress scenarios were undertaken; the results appear to be robust.

37. **The authorities are working to make their stress tests more sophisticated.** In particular:

- The authorities need to monitor and promote the development of modeling capacity in the large banks, especially with respect to the linkages between macroeconomic scenarios and microeconomic behavior, such as probabilities of default;
- The authorities should continue to develop their own stress testing capacity, focusing on the links between credit quality and macroeconomic performance in the markets where Austrian banks are active, second-round feedback effects on Austria, noninterest income, and funding costs;
- The authorities (and banks) need to continue to refine estimates of indirect credit risk stemming from exchange rate movements in assessing exposures; and
- Supervisors should remain alert to banks' concentrated exposure to the CESE and CIS region, and intensify further cross-border cooperation in stress testing and supervision generally.

### III. INSURANCE AND PENSIONS

#### Performance and trends

38. **Financial soundness and performance indicators for the insurance and pension sectors have generally strengthened in the past several years** (Table 5). Given the relative size of the sectors and the main risks they face, these sectors do not represent a major stability concern. The distribution of soundness indicators is less dispersed than that found for banks (Figure 10).

39. **An aging population and recent pension reforms are likely to increase demand for a variety of long-term saving vehicles** (Table 6). Financial innovation and government initiatives have contributed to the availability and importance of more advanced (and complex) savings vehicles.

**Table 5. Austria: Insurance Sector Financial Soundness Indicators**  
(In percent)

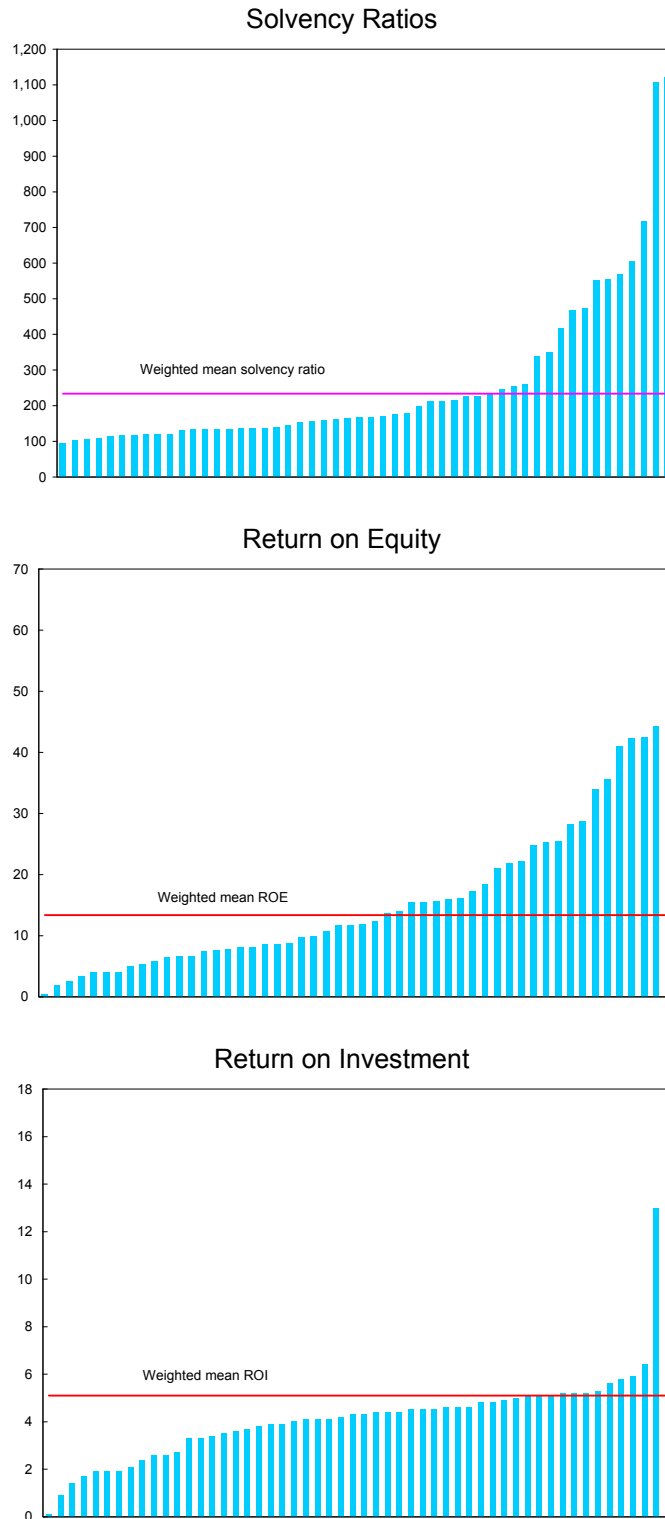
	2003	2004	2005	2006
<b>Aggregate</b>				
Total premiums (euro millions)	14,591	16,284	18,624	19,049
Pre-tax net earnings/net premium	2.6	4.1	5.2	5.5
Loss ratio (net payouts/net premium) 1/	...	...	...	...
Expense ratio (expenses/net premium)	22.7	22.0	20.6	20.5
Combined ratio (loss ratio+ expense ratio) 1/	...	...	...	...
Investment income/investment assets	4.8	5.1	5.4	5.1
Solvency ratio	208.7	207.7	233.9	233.9
<b>Life insurance</b>				
Total premiums (euro millions)	5,218	5,667	6,650	6,697
Pre-tax net earnings/net premium	3.5	5.7	4.2	4.7
Loss ratio (net payouts/net premium) 1/	...	...	...	...
Expense ratio (expenses/net premium)	18.3	16.4	15.0	15.1
Combined ratio (loss ratio+ expense ratio) 1/	...	...	...	...
Investment income/investment assets	4.7	5.0	5.1	4.7
Equity/total assets	7.1	7.2	7.8	8.4
Equity and related investments/total assets	11.0	11.0	11.3	11.8
Fixed income securities/mathematical reserves	70.5	69.0	67.4	64.4
Equity/mathematical reserves	7.8	7.6	7.5	7.4
Alternative investments/mathematical reserves 2/	1.7	1.9	2.0	2.3
Solvency ratio	146.0	145.2	157.3	159.7
<b>Health</b>				
Total premiums (euro millions)	1,195	1,348	1,404	1,443
Pre-tax net earnings/net premium	2.6	2.9	4.4	5.0
Loss ratio (net payouts/net premium)	76.0	74.9	74.0	72.1
Expense ratio (expenses/net premium)	14.7	14.7	14.3	14.4
Combined ratio (loss ratio+ expense ratio)	90.7	89.6	88.3	86.5
Investment income/investment assets	3.9	4.2	4.2	4.1
Solvency ratio	276.8	405.7	391.2	408.0
<b>Other non-life</b>				
Total premiums (euro millions)	8,178	9,269	10,570	10,909
Pre-tax net earnings/net premium	3.3	5.6	10.8	11.1
Loss ratio (net payouts/net premium)	70.1	65.9	64.7	67.6
Expense ratio (expenses/net premium)	28.5	28.8	27.8	27.4
Combined ratio (loss ratio+ expense ratio)	98.6	94.7	92.5	95.0
Investment income/investment assets	5.5	5.9	6.8	7.1
Solvency ratio	314.0	304.1	363.1	360.1

Source: FMA, and staff estimates.

1/ Not applicable to life business.

2/ Hedge funds, structured products and derivatives.

Figure 10. Austria: Distribution of Insurance Sector Indicators for Individual Companies (2006; in percent)



Source: FMA.

**Table 6. Austria: Long-Term Savings Instruments**

	Stocks (EUR billions)						Share in Total (Percent)					
	2001	2002	2003	2004	2005	2006	2001	2002	2003	2004	2005	2006
Pension Funds	8.0	7.9	9.1	10.1	11.5	12.5	3.3	3.2	3.5	3.7	3.8	3.9
Severance funds	-	-	0.1	0.4	0.7	1.4	-	-	0.0	0.1	0.2	0.4
Life insurance 1/	33.8	35.7	37.7	41.4	46.4	50.5	14.0	14.6	14.5	15.2	15.3	15.8
Bank saving books	108.2	110.5	114.5	112.9	113.9	115.5	44.9	45.2	44.1	41.3	37.5	36.2
Building society savings	16.7	16.6	17.0	17.7	18.0	17.9	6.9	6.8	6.5	6.5	5.9	5.6
Retail investment funds	74.1	73.5	81.2	90.7	113.4	121.4	30.8	30.1	31.3	33.2	37.3	38.0
<i>o/w dedicated for pension</i>	0.2	0.2	0.4	0.7	0.7	1.0	0.1	0.1	0.2	0.3	0.2	0.3
Total	240.8	244.2	259.6	273.2	303.9	319.2	100.0	100.0	100.0	100.0	100.0	100.0
<i>o/w Zukunftsvorsorge</i>	-	-	0.1	0.5	1.1	1.8	-	-	0.0	0.2	0.4	0.6

Source: OeNB and FMA.

1/ Technical provisions from the liabilities side.

## Regulatory issues

40. **These trends favor steps to introduce more flexible savings instruments and enhance competition among providers, while maintaining strong consumer protection and education.** Competition and efficiency could be supported by ensuring that government policies are neutral across types of savings vehicles, in particular, regarding taxes (including deductibility from taxable income, stamp duties, withholding taxes and the treatment of provisioning); subsidies; and other regulations surrounding instruments (e.g., regarding the redemption of accumulated assets for retirement as a lump-sum or annuity). Also, the mandatory full guarantee of principle for all *Zukunftsvorsorge* funds should be reconsidered, even if some safety net may be desirable on social grounds; with appropriate provision of information, an individual should be able to make the choice that fits him/her best.

41. **The FMA has continued to strengthen insurance and pension sector regulation and supervision.** The 2003 assessment found that the regulatory framework and its implementation were generally of a high standard and effective. Since then, many of the specific recommendations have been implemented, for example, by conducting more frequent on-site inspections and more sophisticated monitoring, including through stress testing. Measures have been taken to strengthen corporate governance, internal controls, and the role of actuaries. More risk-based investment rules have been introduced, and preparations are under way to meet Solvency II requirements. The FMA participates actively in relevant EU committees, and has implemented EU insurance and pension sector regulations, including those for intermediaries. It also cooperates with insurance supervisors in CESE countries, for example, through joint inspections.

42. **The authorities are aware of the need to ensure that the regulatory framework keeps up with developments in the industry.** A number of areas deserve continued attention:

- Supervisory resources, and especially expertise, need to be enhanced, notably because of the extra demands associated with Solvency II. The expansion of the supply of

well-trained actuaries, which is a constraint on the industry, deserves to be supported further in cooperation with companies and universities.

- The FMA should extend its stress testing of insurance companies' and pension funds' liabilities, and should investigate the use of market-based soundness indicators. The FMA is appropriately planning to conduct more on-site inspections, especially in Austrian companies' subsidiaries abroad.
- The FMA should keep under review methods of supervising asset allocation by insurance and pension companies (such as their use of model-based approaches). As asset stocks grow and companies become more familiar with alternative investments, this task will become more demanding.
- The authorities need to ensure the provision of full information to private investors on potential returns, risks, and fees. Disclosure requirements may have to be adjusted as needed to support informed decisions. This is also key to fostering sound competition.

43. **Current investment restrictions on the *Zukunftsvorsorge* funds should be reviewed.** The scheme now requires that 40 percent of contributions be invested in European Economic Area stock markets that have low market capitalization relative to GDP. The limitation constrains diversification to larger, more liquid markets, and thus potentially worsens the risk-return ratio. Portfolio allocation regulations should be based on prudential and investor protection considerations, rather than aim to promote particular markets.

44. **As the second and third pension pillars mature, companies and funds will have more long-term liabilities without opportunities to fully match them with low-risk long-term domestic assets.** Hence, it will be even more important to allow for appropriate diversification across geographical regions and asset classes.<sup>15</sup>

#### IV. SECURITIES MARKETS

##### Regulatory issues

45. **There has been substantial progress in securities market oversight and in implementing the recommendations of the 2003 assessment.** A major factor has been Austria's prompt implementation of several EU Directives.<sup>16</sup> The FMA maintains a high level of day-to-day supervisory effectiveness despite resource constraints.

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<sup>15</sup> There has been a trend towards longer maturities within the state-sponsored retirement saving scheme: at end-2006 half of all contracts had a maturity of 30 years or more. This may constitute an opportunity for the government to issue long-term bonds and possibly inflation protected bonds, but it is unlikely that this source could fully cover demand from the financial sector.

<sup>16</sup> These include the Market Abuse Directive, Prospectus Directive, Transparency Obligations Directive, UCITS III, and, from November 2007, MiFID.

46. **Some recommendations have not been fully implemented:**

- The most serious issue is human resources. The number of staff supervising investment firms, the securities business of banks, pension funds and insurance companies, markets and exchanges has increased, but not sufficiently to keep up with the substantially increased level of obligations and responsibilities imposed on the FMA and Austria's financial services industry by the new European legislation.
- Administrative fines, while raised, remain low by European standards and in terms of their deterrent value.
- The issue of government liability appears to have grown in importance for securities regulation since 2003 (see above). Recent cases of failure of investment firms have provoked numerous law suits against the authorities.
- There have been improvements in international cooperation and the provision of assistance to foreign regulators, most recently with the November 2007 passage of the securities law, which provides the FMA with new powers to exchange information concerning persons conducting unauthorized financial business. The FMA intends in the course of 2008 to reopen negotiations on becoming a full signatory of the IOSCO Multilateral Memorandum of Understanding.

47. **MiFID, which came into force on November 1, 2007, aims to promote integration, competition and harmonized investor protection in European securities markets.** These goals are to be achieved by:

- An enhanced passport for investment firms. In particular, MiFID is likely to intensify cross-border competition among investment firms, regulated markets (RM), Multilateral Trading Facilities (MTF), and “systematic internalizers” and other dealers.
- Best execution, a key investor protection rule. This may provide opportunities for exchanges, including the VSE, to attract more bond trading—currently over-the-counter—to its platforms when the client is a retail investor.

**The VSE in the region**

48. **The VSE provides services to CESE exchanges, but has yet to invest its capital there (with the exception of Budapest).** The VSE is currently involved in the construction and ongoing calculation of local market indices and joint-venture data vending for numerous CESE stock exchanges.<sup>17</sup> It has also developed regional indices which are licensed by

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<sup>17</sup> The VSE has signed MoUs, which it sees as the first stage to more intensive engagement, with 10 CESE exchanges.

investment banks, and used to create financial instruments which enable investors to obtain low cost and efficient exposure to the region and sub-regions. The indices are constructed to international standards and are limited to the most liquid stocks in the relevant market. Thus, the risk of any index being manipulated (causing reputational damage to the VSE) is therefore judged as being low.

49. **The VSE has enjoyed a first-mover advantage in the region and controls a critical mass of liquidity in Austrian shares, but faces increasing competition.** In particular, MiFID is likely to intensify cross-border competition between regulated markets, Multilateral Trading Facilities (MTF), and “systematic internalizers” and other dealers. The VSE has been very profitable, with a return on equity of 73.2 percent in 2006, which is more than twice that of major European exchanges.<sup>18</sup> Even a significant reduction in revenues would not threaten its viability; the VSE has reduced trading fees somewhat in recent years, enhanced the efficiency of its trading platforms, and has been innovative in introducing new trading mechanisms. These measures suggest that the management is aware of the prospect of more competition.

50. **Further structural evolution and probably consolidation of exchanges can be expected; regulators will need to adapt to these market-driven changes.** Since 2006, the majority of trading on the VSE by value has been executed by foreign members, including remote members. A London-based MTF has announced that it will include Austrian stocks on its trading platform in 2008, and others will almost certainly follow. Potential fragmentation of trading in Austrian stocks will increase the importance of cooperation and information exchange among national regulators through mechanisms developed by the Committee of European Securities Regulators, and bilaterally.

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<sup>18</sup> The fees from the VSE’s index and data businesses make up 20 percent of revenue. Almost all the other 80 percent derived from trading activities (including listing fees of 2–3 percent of the total revenue). This is high compared with some other exchanges.

## APPENDIX I: IMPLEMENTATION OF THE RECOMMENDATIONS OF THE 2003 FSAP

### Recommendation

### Implementation

#### Regulatory and supervisory framework for banking

- Resolve the issue of institutional liability of supervisors.
  - The tasks of the FMA and those of the external auditor have been defined more specifically in law, and state liability for the external auditor has been restricted. Only the Federal Republic, and not the FMA, may be taken to court in cases where losses or damages are incurred in the performance of supervisory duties.
- Complete development of the process for supervision of conglomerates.
  - Austria transposed the EU-Directive on Financial Conglomerates into Austrian law in 2004; the provisions entered into force on January 1, 2005. The necessary organization for supervision of financial conglomerates within the FMA was set up in 2004. Supervisory teams responsible for the analysis of conglomerate activity have been set up. The reporting systems regarding own funds and risk management have been defined, taking into account the structure of individual conglomerates. Reports were received in the second quarter of 2007, and the system is expected to be fully in place by 2008.
- Increase the frequency of on-site inspections, especially for the largest institutions.
  - The FMA and the OeNB have strengthened their on-site supervision capacity by increasing the number of on-site inspections, mostly conducted by the OeNB. The FMA categorizes institutions according to size and type, and bases the number of regular on-site inspections according to the category. Special purpose inspections are also conducted.
  - The FMA has enhanced cooperation with host supervisory authorities in CESE. Since 2004, it has conducted four joint-examinations with local authorities in four different countries; in 2006, the FMA and OeNB launched a coordinated cross-border on-site examination of a banking group, in co-operation with eight host supervisors.
- Review possible need for a broad provision in the banking law allowing FMA to issue regulations.
  - The supervisory instruments of the FMA include the ability to enact regulations, although enactment is subject to various limitations, for constitutional reasons.
- Strengthen the contingency planning framework to deal with systemic problems, should one occur.
  - The Financial Market Committee (FMK) has established a Crisis Management Sub-Committee for the exchange of information between its member institutions and the preparation of recommendations in the event of a crisis. The OeNB introduced a Crisis Management Manual in 2005 that sets forth procedures for crisis management.
- Provide banks with more detailed guidelines for managing risks.
  - There are two main initiatives aimed at providing banks with guidelines for managing risk in Austria:
    - The FMA minimum standards in areas where additional guidance is deemed necessary. The standards are not legally binding; however, consideration of the recommendations is examined during on- and off-site analyses.
    - The FMA/OeNB guideline series on risk-related topics. The guidelines provide examples of best practice in banking and are published as a service to credit institutions.

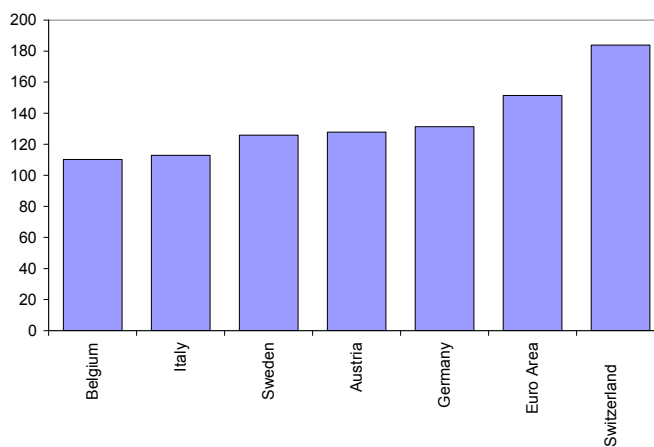
<b>Recommendation</b>	<b>Implementation</b>
<ul style="list-style-type: none"> <li>• Continue to closely monitor foreign currency lending by banks to unhedged domestic customers, especially by the small banks most heavily involved in these loans, and ensure that appropriate risk management is followed for these loans.</li> </ul>	<ul style="list-style-type: none"> <li>• In 2003, the FMA published minimum standards on the granting and management of foreign currency loans.</li> <li>• The FMA and OeNB have introduced an initiative designed to raise the risk awareness of borrowers and have instituted enhanced regulatory reporting with regards to foreign currency lending. Foreign currency loans are a regular part of the OeNB's stress testing exercise and coverage in the Financial Stability Report.</li> <li>• The regulatory reporting regarding foreign currency lending has been extended and now covers information on both the repayment structure of loans as well as the use of repayment vehicles. A detailed questionnaire on foreign currency exposures of Austrian banks' subsidiaries in the CESE has been sent out to the major Austrian banks active in the region. A similar review was also conducted in 2006.</li> </ul>
<p><b>Deposit insurance</b></p> <ul style="list-style-type: none"> <li>• Review issues of deposit insurance in mortgage and commercial bank pillars, with a view to a possible consolidation of some or all of the different deposit insurance schemes over the medium term.</li> </ul>	<ul style="list-style-type: none"> <li>• The deposit guarantee schemes are organized by the five separate "sectors" within the banking industry. A sixth scheme was established for credit institutions licensed or changing "sectors" after June 30, 2006, representing the establishment of an Austrian-wide deposit guarantee scheme whereby all Austrian banks have to contribute towards the refunding of secured deposits in the event of a bankruptcy. Membership of the sixth scheme was extended from five to 10 years in 2005.</li> </ul>
<p><b>Securities market regulation</b></p> <ul style="list-style-type: none"> <li>• Consider substantial increase in the sizes of maximum levels of administrative fines.</li> </ul>	<ul style="list-style-type: none"> <li>• In 2006, the Act on Amending Financial Market Supervision substantially increased the maximum level of administrative fines in all areas of supervision to 50,000 euro.</li> </ul>
<p><b>Insurance and pension issues</b></p> <ul style="list-style-type: none"> <li>• Accelerate FMA's move to risk-based supervision and intensify monitoring of life insurance company solvency.</li> <li>• Enhance actuarial and auditing role in insurance companies as regards assessing the overall financial position of life insurers, and long-tail liabilities for non-life insurers.</li> </ul>	<ul style="list-style-type: none"> <li>• The FMA requires insurance companies to implement appropriate risk management and has set additional qualitative requirements in the guidelines on financial instruments, derivative instruments, risk management and fair-value reporting. Profit and loss figures have to be reported quarterly, and one-year forecasts must be included. Stress testing has been improved, and the FMA's analytical tools have been further developed.</li> <li>• The FMA issued a circular on the professional and personal qualifications of actuaries in 2004. A regulation on actuaries' reports was introduced in 2005. This regulation indicates the scope of reports and their structure. The Austrian Actuarial Association strengthened standards for chartered actuaries in 2005.</li> <li>• Insurance undertakings are required to set up an internal audit unit for the entire business, which report directly to the management board or the managing directors, as well as appropriate internal controls. Guidance on minimum standards for internal audit was introduced in 2005 to supplement these measures. Since 2005, companies are required to rotate external auditors every five years.</li> </ul>

<b>Recommendation</b>	<b>Implementation</b>
<ul style="list-style-type: none"> <li>• Address special challenges created by new pension products, including issuance of guidelines to banks to ensure appropriate risk management.</li> </ul>	<ul style="list-style-type: none"> <li>• Legislation on investment by pension funds was passed in 2005, and implementing regulations took effect in 2006. Their investments must either be guided by procedures in compliance with risk management regulations with a few caps on certain types of investment, or abide by simpler but more restrictive quantitative restrictions; The Regulation of the FMA sets out the minimum standards for the risk management of Pensionskassen, and the Regulation on Additional Provisions of the FMA for Zukunftsversorgung. A company providing Zukunftsversorgung products must have its internal models of asset allocation assessed by an outside expert, and its actuary also needs to validate and explain the model.</li> </ul>
<p><b>Corporate governance</b></p> <ul style="list-style-type: none"> <li>• Introduce formal fit and proper test for financial institutions' supervisory board members.</li> <li>• Consider making the Austrian voluntary code of corporate governance mandatory for financial institutions.</li> <li>• Consider changing the regulatory framework so that the internal audit function for financial institutions reports to the supervisory board.</li> </ul>	<ul style="list-style-type: none"> <li>• The planned amendments to the Banking Act will require a "fit and proper" test for the chairman of the supervisory board, and for members of management boards of certain types of financial firms,</li> <li>• Parts of the voluntary Code of Corporate Governance are to be transformed into statutory obligations. Further, a project to implement an EU Directive (2006/46/EC) requiring all listed companies to produce and disclose a Corporate Governance report has been presented. This Directive is to be implemented in June 2008.</li> <li>• Under Article 42 of the Banking Act, the internal auditor has to report directly to the directors. The internal auditor has to report the main findings to the chairman of the supervisory board and the audit committee on a quarterly basis.</li> </ul>

## APPENDIX II: STRUCTURE OF THE FINANCIAL SYSTEM

51. **The financial system is characterized by the dominant position of the banking sector.** At over 300 percent of GDP, total banking sector assets are far larger than those of insurance companies and pension funds, and account for more than about  $\frac{3}{4}$  of total financial sector assets (Table 2). Banks also own the collective investment scheme providers and other financial institutions. In recent years, investments in these financial institutions (mainly in the form of mutual funds) have grown rapidly, but are still a relatively small share of GDP. In an international comparison, Austrian banks' domestic credit remains in line with its European peers (Figure 11). Stock market capitalization (about 60 percent of GDP) is still low relative to other major European countries, and other securities in the market consist largely of government paper and bank issuances, including mortgage bonds. The insurance sector is well developed, but the both density and penetration for life-insurance is well below the EU-15 average, while non-life insurance density and penetration are in line with the EU-15.

Figure 11. Austria: Domestic Credit  
(In percent of GDP; 2006)



Source: IMF, *IFS*.

52. **The banking sector, while undergoing consolidation, remains fragmented, with a multi-sector and generally tiered structure deriving from historical differences in lines of business and ownership.** There are seven sub-sectors of banks: joint stock and private banks or commercial banks (*Aktienbanken*); savings banks (*Sparkassen*); rural credit cooperatives (*Raiffeisenbanken*); industrial credit cooperatives (*Volksbanken*); provincial or state mortgage banks (*Landeshypothekenbanken*); building societies or savings and loans associations (*Bausparkassen*); and special purpose banks (*Sonderbanken*). Although the vast majority of banks now effectively operate as universal banks, significant differences remain across the sub-sectors in terms of organizational and ownership structures. Three of the sub-sectors—the savings banks, Raiffeisen banks and Volksbanken—have tiered structures, with apex or central institutions at the top-most tier providing centralized services such as liquidity management and risk assessment to the other institutions in the sector.

53. **There is a trend towards integration of banks, primarily within the sub-sectors.** The formalization of cross-guarantees for liabilities in the tiered sub-sectors has reinforced this trend (Box 2). However, despite some decline in the number of banks, Austria still has high bank and branch density, with about 850 banks and about one bank branch for each 2,000 people (Figure 12). Bank and branch densities remain among the highest in Europe, and on par with densely-branched countries such as Germany and Italy (Figure 13). Coupled with the system-wide shared ATM network, which enhances the ability of customers to use banks outside their geographic region, competition is quite stiff in most aspects of domestic banking business.

### **Box 2. Sub-Sectoral Support Arrangements**

#### ***Raiffeisen Sector***

*Solidarity Association* (Solidaritatsverein der Raiffeisen-Geldorganisation): Individual Raiffeisen banks, Raiffeisen regional banks, and the apex organization RZB provide mutual assistance to protect the interests of creditors and ensure the continued existence of a troubled institution. Financial assistance is voluntary, and where provided, is accompanied by conditions such as changing management to remedy the underlying cause of the financial problem.

*Raiffeisen Cross Guarantee System* (Raiffeisen-Kundengarantiegemeinschaft Österreich): Voluntary membership in regional customer guarantee associations (except Carinthia which has no such association), which in turn participate with the other regional guarantee associations (except the Salzburg regional association, which is not a member of the RKO) and RZB. Members are legally bound to commit up to a limit determined by formula, to cover 100 percent of deposits and securities issued by a member bank.

#### ***Savings Bank Sector***

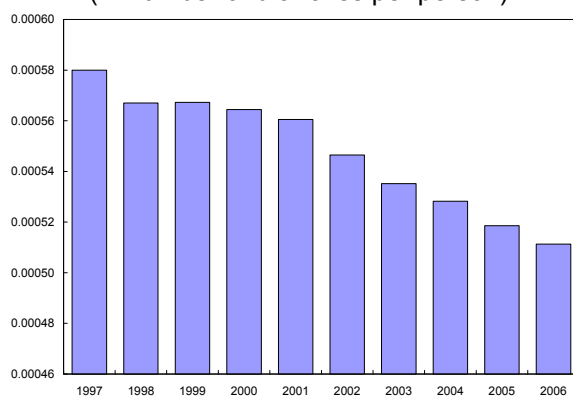
*Cross Guarantee System* (Haftungsverbund): Voluntary membership which commits participating savings banks to be jointly and severally liable for all deposits and liabilities of member banks, up to a limit established by a formula. Member banks are required to provide support for other member banks facing financial distress, which could include provision of liquidity, granting of loans, provision of guarantees, capital injections as well as intervention in business policy and changes in management. The provisions are implemented by a company that is empowered to establish and monitor risk management policies and systems for member banks, and to intervene and make executive management decisions in a troubled savings bank. The cross guarantee system includes Erste Bank, the savings banks in which it has a significant equity holding, and other savings banks.

#### ***Volksbank Sector***

*Volksbanken Community Fund* (Volksbanken-Gemeinschaftsfonds): Funded by all Volksbank credit cooperatives, providing a guarantee for all deposits. All Volksbanken are part of a centralized quarterly reporting system and group internal audit, and have common risk classification and management systems.

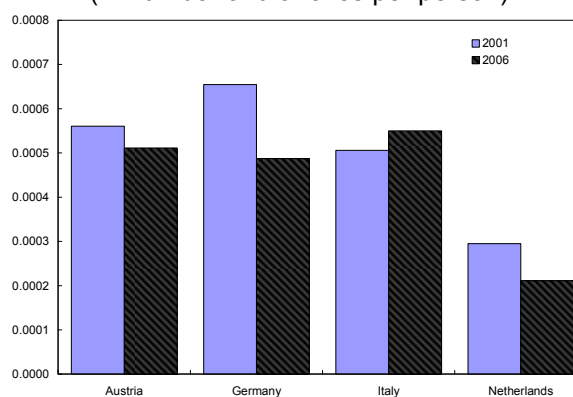
*Contingent Capital Fund* (Volksbanken-Beteiligungsgesellschaft): Provides capital to a Volksbank that is unable to access other equity, as needed. When provided, such assistance is accompanied by conditions or technical assistance intended to remedy the underlying problem in the bank.

Figure 12. Austria: Bank Branch Density, 1997–2006  
(In number of branches per person)



Sources: European Central Bank; and IMF, *IFS*.

Figure 13. Europe: Bank Branch Density Across Selected Countries  
(In number of branches per person)



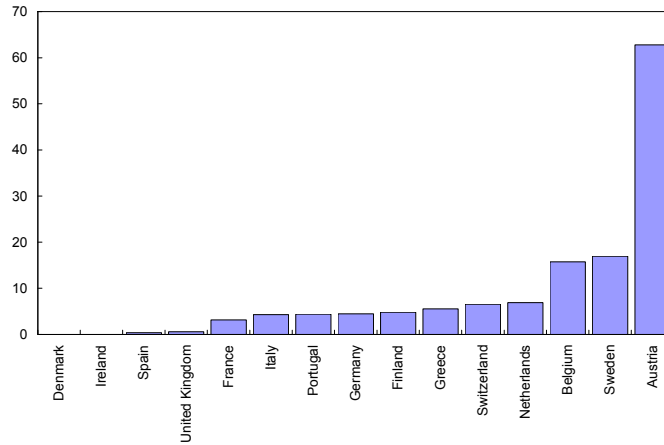
Sources: European Central Bank; and IMF, *IFS*.

54. **Notwithstanding the narrowing interest rate margins in recent years, profitability has gradually improved and return on assets was among the highest in the EU-15 in 2006.** This development has gone hand in hand with major improvements in efficiency, as reflected by decreasing cost-to-income ratios (Table 3). Although most banks are small, economies of scale and efficiencies are gained through the centralized provision and development of products and services in the tiered sectors. Still, these cost-to-income ratios remain somewhat above the average of Austria's European peers, partly reflecting the structure of the banking sector.

55. **A key explanation for Austrian banks' strong profitability is their expansion abroad.** In the early 1990s, Austrian banks were among the first to enter the CESE markets. Expansion by Austrian banks into the CESE started in Hungary and (then) Czechoslovakia, and continued from there to virtually the whole region. Today, Austrian banks play a major role in many CESE countries and some members of the CIS. In several cases, these subsidiaries are large compared the host countries' financial systems and are of systemic importance.

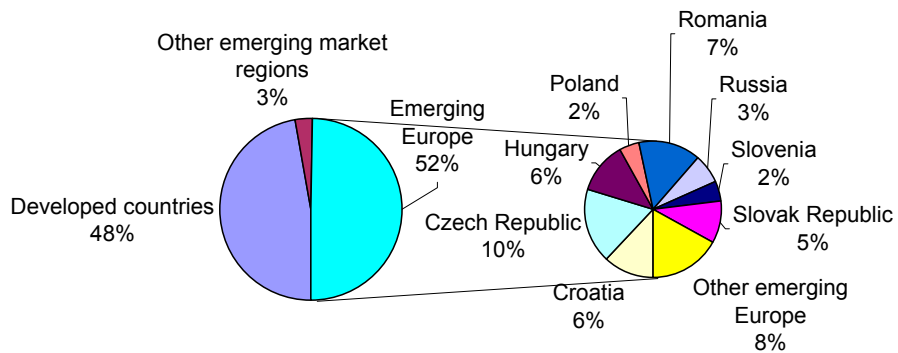
56. **At the same time, the holdings in the CESE are important for the Austrian banks.** They represent a significant part of total assets and contribute significantly to overall profitability. In 2006, total assets in CESE accounted for about 20 percent of Austrian banks' consolidated assets and activities there contributed almost 40 percent of their total profits. Thus, return on assets has been much higher for the operations in the CESE than it is in the domestic market. Measured as share of GDP, Austrian exposures to the CESE are far larger than those of its European peers (Figure 14). Austrian banks' activities in the region are geographically distributed across many countries and their exposures are therefore quite diversified (Figure 15). Some of the largest exposures are to Austria's immediate neighbors and EU member countries. However, at the individual bank level, some banks' exposures are more concentrated.

Figure 14. Europe: Banks' Consolidated Foreign Exposure to Emerging Europe (In percent of GDP, 2006)



Source: Bank for International Settlements.

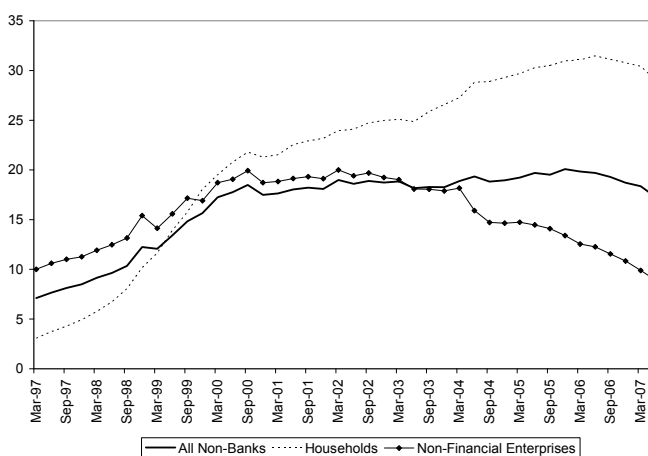
Figure 15. Austria: Composition of Banks' Consolidated Foreign Claims (Percentage shares of cross-border claims and local claims of Austrian banks' foreign offices, September 2007)



Source: Bank for International Settlements.

57. **The high level of foreign currency denominated loans made by Austrian banks to domestic customers is a phenomenon unique to Austria in Western Europe.** The extension of such loans has primarily been through the tiered banking sectors, and started with some banks in the western region. After a period of rapid growth, the amount of outstanding foreign currency loans as a share of total loans has recently started to fall, although the level remains high (Figure 16). As of June, 2007, foreign currency loans to domestic nonbanks accounted for about 17 percent of total loans, corresponding to about 18 percent of GDP.

Figure 16. Austria: Foreign Currency Loans to Domestic NonBanks  
(In percent of total loans)



Source: OeNB.

58. **Safety net arrangements include a deposit insurance framework and systemic liquidity arrangements that have been agreed for Eurosystem members** (Box 3). In part due to the existence of the sectoral support arrangements, only the deposit insurance scheme in the joint stock banks sector has had to make payouts in the past decade.

59. **Within Europe, Austria is ranked eighth in terms of assets under management in the investment funds market, ahead of countries such as Switzerland, Sweden and the Netherlands** (Figure 17). Assets under management in Austria have grown sharply since the mid-1990s, to reach €172 billion as at the end of October 2007; the size of the sector has more than doubled since 2000 (Figure 18). There are currently 24 investment management companies managing these assets, with the top 3 companies accounting for 57 percent of the market share as at end-October 2007.

### Box 3. Safety Net and Systemic Liquidity

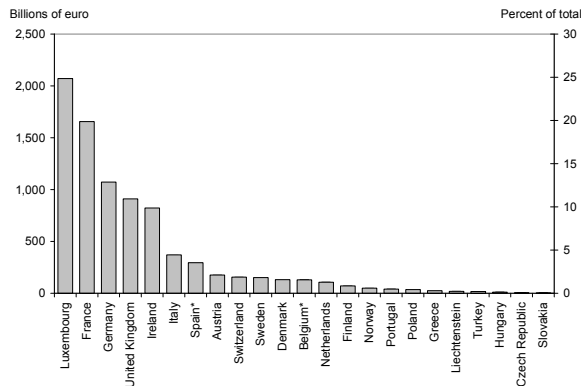
#### Deposit insurance

The system of deposit insurance for banks is compulsory and organized by sub-sector, with five separate schemes, each of which meets the minimum EU standards. Each scheme is administered by the respective trade association in the sector and operates shared early warning systems. The funding of the compulsory schemes is *ex post* and member banks from the affected sector are required to contribute only when a guarantee event occurs. Contributions are based on the proportion of the covered deposits in each sector, subject to an annual ceiling depending on the risk-weighted assets of the contributing bank. Payouts in excess of the ceiling spill over to the other sectors, and if the shortfall persists, the originally affected sector can issue bonds to raise external funds. The federal government has the legal right, but not the obligation, to guarantee such bonds. To date, there has been no occasion on which these second or third layers of the deposit insurance framework has been accessed. Note that deposit insurance payouts would be triggered only after the sub-sectoral support arrangements have been exhausted (Box 2).

#### Systemic liquidity arrangements

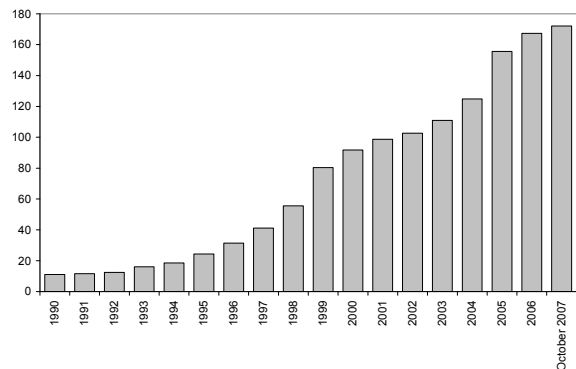
Liquidity management is carried out through the Eurosystem, to which the OeNB belongs. Mechanisms are in place to provide emergency lender of last resort (LOLR) assistance to an illiquid but solvent institution should that prove necessary. The Eurosystem has established two principles for LOLR assistance: first, the provision of such assistance is primarily a national responsibility. Second, any potential liquidity impact deriving from the provision of emergency liquidity assistance would have to be managed in a way consistent with the maintenance of the unified monetary policy stance. The OeNB lends to banks only against collateral, but has flexibility in the collateral that it would be prepared to accept. Beyond that, the Austrian authorities consider that it would not be appropriate to predetermine and publicly announce detailed rules for the provision of temporary liquidity in the event of a systemic liquidity crisis both because of potential moral hazard and also because the particular circumstances giving rise to a problem can vary.

Figure 17. Europe: Size of Investment Fund Markets by Country, as at End-June, 2007,



Source: EFAMA.

Figure 18. Austria: AUM of Investment Funds, as at End-October, 2007 (In billions of euro)



Source: Austrian Association of Investment Fund Management Companies.

60. **Social security pensions account for over 90 percent of current pension benefits in Austria.** Due to emerging pressures from an ageing population, the system was reformed in 2003 and 2005, creating stronger incentives for individuals to stay economically active and save for retirement in second and third pillar schemes. The second pillar occupational pension funds were introduced in the early 1990s, and assets under administration by these funds have grown sharply since then (Table 6).<sup>19</sup> A group life insurance scheme as an alternative to occupational pension funds has also been introduced.

61. **For the third pillar, life insurance products are the most important savings vehicle with an increasing share in unit-linked products.** In addition, a state-sponsored pension scheme (*Zukunftsvorsorge*) was introduced in 2003, and is offered through life insurance and investment fund companies. The scheme has been popular and growth has been rapid, although the total amount of assets is still low.<sup>20</sup> There are also special pension investment retail funds with some tax advantages, but they have not gained traction. This could be explained, at least in part, by the fact that the accumulated assets have to be paid out as annuities instead of as a lump-sum, which is widely preferred by Austrian beneficiaries.

62. **The structure of the domestic insurance sector has remained stable.** At end-2006, there were 52 companies, of which 33 engaged wholly or mainly in life business, and around 60 small mutual associations; there are no independent reinsurance companies presently. Many individual companies are members of groups associated with a bank, and two are linked to major insurers from another European country. Several foreign companies have branches in Austria, and Austrian companies have subsidiaries abroad, notably in CESE countries, where growth has been strong; the number of these subsidiaries rose from 58 in 2004 to 95 in 2007, and they contributed about 24 percent of the premia written in 2006 for the relevant groups. Total insurance sector assets amounted to €82 billion as at end-2006. Solvency ratios have trended slowly upwards, profitability has been adequate (helped by dividends from subsidiaries in CESE countries), and operational efficiency has improved. Recently there has been no natural catastrophe as severe as the flood in 2002, although Austria is prone to certain other idiosyncratic natural events, such as building damage from heavy snowfall.

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<sup>19</sup> The mandatory employee severance funds (*Mitarbeitervorsorgekassen*) can also be seen as part of the second pillar, but they are still quite small, and as severance funds they are not designed for mainly long-term saving.

<sup>20</sup> The *Zukunftsvorsorge* has been successful in attracting households to the scheme, a development largely attributable to the attractive features in the contracts, notwithstanding the hefty transaction costs during the early years. These contracts include (i) a government subsidy in the form of a premium; (ii) a guarantee of invested capital plus the premium; and (iii) tax exempt capital gains, income, inheritance and pension benefits

### APPENDIX III: STRESS TESTING COVERAGE AND RESULTS

63. **This appendix describes the coverage of the stress tests, the methodology used and the outcomes of stress tests carried out on the Austrian financial system as part of the Austria FSAP Update.** The shocks and macroeconomic scenario considered in the tests were set by the FSAP team and the OeNB, and can be considered to be severe but plausible. All macroeconomic stress tests, as well as the single factor market risk stress tests are based on end-June 2007 data.

#### Coverage

64. **The stress tests center on the six largest Austrian banks:** Erste Bank der oesterreichischen Sparkassen (Erste), Bank Austria Creditanstalt (BA-Ca), Raiffeisen Zentralbank Österreich (RZB), Österreichische Volksbank (OeVAG), Bawag/Postsparkasse (Bawag), and Hypo Alpe-Adria-Bank International (HAA).<sup>21</sup> In addition, top-down stress tests are performed on supervisory data of all Austrian banks. Insurance companies are not included in the stress tests.

65. **The stress tests cover all major portfolios of the institutions.** Specifically, both the trading as well as the banking books are included in the exercise. The stress tests are performed on a group level, i.e., including CESE and CIS subsidiaries, for the relevant macroeconomic scenario and the market risk tests.

#### Specification

66. **The stress testing exercise aims to include all major risks from macroeconomic sources faced by the banks.** These consist of two multi-factor macroeconomic scenario stress tests; several single-factor tests for market risks, in the form of shocks to interest rates, equity prices, exchange rates, and the implied volatility of options; an assessment of indirect credit risk stemming from exchange rate movements through foreign currency lending; and an assessment of liquidity risks. Specifically, the two three-year macroeconomic scenarios center around

- a confidence crisis in CESE, which results in roughly a halving of the current account deficits in the countries involved over the period of one year (while currency pegs are assumed to remain intact), with severe real effects of up to a nine percent decrease in the level of GDP in 2008 in Romania and Bulgaria (which implies the slowest annual growth since the 1997-1998 crisis); and
- a global economic downturn, which results in domestic GDP growth declining to 2.8, -0.4, and -0.1 percent for the years 2007–2009 (which is a more prolonged recession than any other in Austria since the second world war).

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<sup>21</sup> These banks together have a domestic market share of 68 percent at mid-2007 (consolidated data).

67. **A range of market risk shocks were defined:** shocks to the (euro) interest rate curve (+/- 200 basis points, 200 basis points steepening), foreign and domestic equity indices (both -35 percent), euro exchange rates (+/- 15 percent), and implied volatilities (+200 basis points, -100 basis points). In addition, indirect credit risk stemming from exchange rate movements and shortfall in performance of loan repayment vehicles (-10 percent CHF/EUR rate, -15 percent performance of repayment vehicles) was analyzed. Liquidity stress testing involved a qualitative assessment of compliance with BIS principles for the Assessment of Liquidity Management in Banking Organizations, and a quantitative scenario. Credit spread risk is not assessed due to the very limited exposure of banks to this risk and the concomitant lack of tools to perform such assessments. Operational risk is also not assessed.

### **Methodology**

68. **The stress testing approach used in the bottom-up (BU) exercise builds on the expertise of the individual banks and the OeNB to ensure consistency across institutions.** The tests on credit and market risks were performed using the institution's own internal risk models. To enhance consistency, the OeNB provided the banks with estimates for relative changes in the probabilities of default (PDs) and loan loss provisions (LLPs) under the macroeconomic scenarios.<sup>22</sup> Banks used these changes in PDs and LLPs to estimate the impact on their portfolio. In addition, the OeNB provided the banks with a profile for a decline in profits before credit losses under the macroeconomic scenarios.<sup>23</sup> Banks reported the results in millions of euro additional losses.

69. **The short-term vulnerability assessments of liquidity focus on the six large banks.** It consists of a questionnaire, and a BU market-crisis scenario, in which the liquidity of assets are shocked. The focus of this scenario is on effects on liquidity after 30, 60, and 90 days. In addition, top-down liquidity assessments using off-site supervisory data were performed. These analyses consisted of four sensitivity tests and one scenario that combined a severe disruption of the money and credit markets with an idiosyncratic shock for each bank.

70. **The top-down (TD) stress tests depend solely on the OeNB modeling of supervisory data.** Similar to the BU approach, the TD approach consists of tests of the market and credit portfolios of the banks. In addition, the TD approach allows for an analysis of the entire Austrian banking system based on supervisory data. An analysis of contagion was done TD for the global downturn scenario, using a model of the Austrian interbank market based on supervisory filings. Results were obtained in millions of Euro.

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<sup>22</sup> The adverse macroeconomic environment was translated into measures of credit risk (PDs and LLPs) using logistic regressions. PDs increased by up to 71 percent in the global downturn scenario, while LLPs increased by up to 145 percent in the CESE scenario.

<sup>23</sup> The profile for profits net of credit losses was estimated based on data on individual Asian banks' profits development during the Asia crisis. Profits net of credit losses decline by up to 17 percent in both scenarios.

71. **Although the methodologies of both the BU and the TD approaches are fairly sophisticated, caveats apply.** The principal caveats are explained in the main text, but others are worth mentioning here. First, favorable macroeconomic and structural developments have placed Austrian banks at a good starting point for the tests; the starting point may deteriorate over time as the cycle turns and CESE markets mature. Second, the stress testing models lack an interaction or feedback component between the different financial institutions in the stress tests. Third, modeling capacity differs across banks, potentially introducing another source of model risk. Specifically for the TD stress tests, important caveats relate to data limitations, which the stress tests aim to address by various conservative modeling assumptions. The most important of these were assumptions on loss given default (LGD), the incorporation of subsidiaries, and the ratings of individual corporates that are rated differently by different banks. These conservative assumptions to a large extent explain the generally bigger impact under the TD analysis compared to the BU analysis.

## Results

### *Macroeconomic scenarios*

72. **Credit risk losses are substantial under the CESE scenario, but would not wipe out aggregate profits (Table 7 and Figure 19).**<sup>24</sup> Total losses for the largest six banks over a three year horizon amount to some € 10 billion in the TD results and € 6.3 billion in the BU results. This compares to some € 41.4 billion in total regulatory capital, and € 1.6 billion in quarterly profits at mid-2007 (i.e., projected profits before credit losses would amount to a total of some € 17 billion over three years).

73. **The impact is illustrated by a sharp decrease in RoE.** The average TD estimate of RoE declines to 4 percent in the second year of the scenario, with three of the major banks exhibiting losses, one making a small profit and the other two banks maintaining RoEs of around 10 percent. This indicates major strain in the sector, which in mid-2007 had an average RoE of 22 percent, while the six large banks exhibited RoEs between 9 and 28 percent. Even though capital would not be affected in a substantial way because of profit buffers, banks would come under pressure to improve performance, either from inside their sector, or, in the case of foreign-owned or listed entities, from their owners. They might also become capital constrained in expanding credit in CESE countries, which might generate a negative feedback effect. Expressed in terms of profits, TD estimates suggest that the banks lose about a year and a half's worth of profit, which would be equivalent to some 2.8 percentage points in terms of regulatory (tier I + tier II) capital.

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<sup>24</sup> Figures 19 and 20 below are the basis for Figure 9 in the main text.

**Table 7. Austria: Impact of the CESE Scenario on the Six Largest Banks**  
(Average additional credit losses in millions of Euro, unless otherwise indicated)

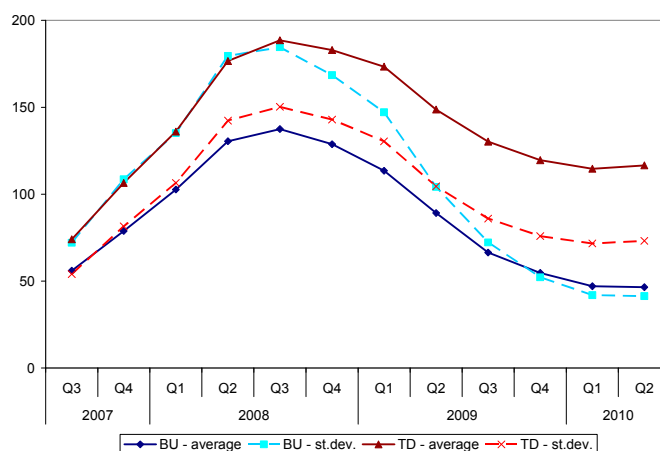
	2007				2008				2009				2010		TOTAL
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2		
	Baseline 1/	Scenario Year 1				Scenario Year 2				Scenario Year 3					
BU - average	649	56	79	103	130	137	129	114	89	66	55	47	47	1,052	
BU - st.dev.	878	72	109	135	180	185	168	147	104	72	52	42	41	1,303	
TD - average	710	74	106	136	177	189	183	173	149	130	120	115	117	1,668	
TD - st.dev.	553	54	82	107	142	150	143	130	104	86	76	72	73	1,201	
BU - RoE	26.4	17.7				13.0				17.6					
TD - RoE	22.4	10.8				4.2				8.4					
BU - average as percentage of quarterly profits	315	18.0	25.4	33.1	42.0	44.2	41.5	36.5	28.7	21.4	17.6	15.1	15.0	339	
TD - average as percentage of quarterly profits	271	27.3	39.3	50.2	65.2	69.6	67.6	64.0	54.9	48.1	44.2	42.3	43.0	616	
BU - average as percentage point of capital 2/	11.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	1.7	
TD - average as percentage point of capital 2/	11.2	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	2.8	

Source: OeNB and banks' calculations.

1/ Estimated credit losses, RoE, profits, and capital for 2007Q2 in a normal, non-stressed, environment.

2/ Expressed as percent of 2007Q2 regulatory capital, i.e., assuming zero profits.

**Figure 19. Austria: Additional Credit Losses Under CESE Scenario**  
(In millions of euro)



Sources: OeNB; and banks' calculations.

74. **The global downturn scenario also results in substantial credit losses, but would not wipe out profits (Table 8 and Figure 20).** Total losses in the Austrian portfolios of the largest six banks over a three year horizon amount to some € 4.9 billion in the TD results and € 1.6 billion in the BU results. The losses are smaller than under the CESE scenario, as only the Austrian portfolios (excluding direct cross-border lending from Austria) were shocked.

75. **The impact is on RoE is considerable.** Average TD-estimated RoE for the large six banks declines to 13 percent in year 2 and 9 percent in year 3 (Table 8). Half of the large six banks see their RoE decline to below 10 percent in year 2, while in year 3 four out of the six banks have an RoE below 5 percent. Meanwhile, one bank exhibits a loss in year 3. This indicates major strain in the sector, which in mid-2007 had an average RoE of 22 percent, while the large six banks exhibited estimated RoEs between 9 and 28 percent. Even though capital would not be affected in a substantial way because of profit buffers, banks would

come under pressure to improve performance, either from inside their sector, or, in the case of foreign-owned or listed entities, from their owners.

**Table 8. Austria: Domestic Impact of the Global Downturn Scenario on the Six Largest Banks**

(Average additional credit losses in millions of Euro, unless otherwise indicated)

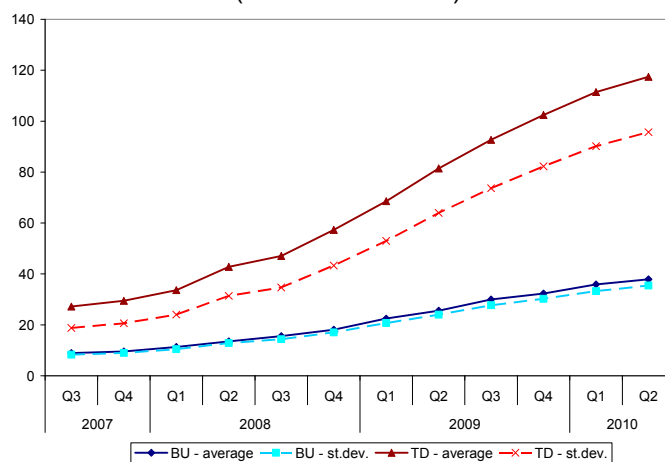
	2007				2008				2009				2010		TOTAL
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2		
	Baseline 1/	Scenario Year 1			Scenario Year 2			Scenario Year 3							
BU - average	309	9	10	11	14	16	18	23	26	30	32	36	38	261	
BU - st.dev.	451	8	9	10	13	14	17	21	24	28	30	33	35	243	
TD - average	678	27	29	34	43	47	57	69	81	93	102	111	117	811	
TD - st.dev.	559	19	21	24	31	35	43	53	64	74	82	90	96	631	
BU - RoE	26.4	23.8			20.8			19.1							
TD - RoE	22.3	17.9			13.3			8.9							
BU - average as percentage of quarterly profits	315	2.7	2.9	3.5	4.1	4.8	5.5	6.9	7.8	9.2	9.9	11.0	11.6	80	
TD - average as percentage of quarterly profits	271	10.0	10.9	12.4	15.8	17.4	21.2	25.3	30.1	34.2	37.8	41.1	43.3	300	
BU - average as percentage point of capital 2/	11.2	0.01	0.02	0.02	0.02	0.03	0.03	0.04	0.04	0.05	0.05	0.06	0.06	0.4	
TD - average as percentage point of capital 2/	11.2	0.05	0.05	0.06	0.07	0.08	0.10	0.11	0.14	0.15	0.17	0.19	0.20	1.3	

Source: OeNB and banks' calculations.

1/ Estimated credit losses, RoE, profits, and capital for 2007Q2 in a normal, non-stressed, environment.

2/ Expressed as percent of 2007Q2 regulatory capital, i.e., assuming zero profits.

**Figure 20. Austria: Additional Credit Losses Under Global Downturn Scenario**  
(In millions of euro)



Sources: OeNB; and banks' calculations.

76. **The top-down analysis generally presents a larger impact than the bottom up analysis.** The difference can be explained by various factors. First, the TD analysis assumes a 100 percent LGD with zero collateral in the CESE scenario and a 100 percent LGD for the uncollateralized part of the credit portfolio in the global downturn scenario, while the banks either use their internal estimates for LGD or the standard 45 percent figure. Second, some of the banks have filed their loans to the public sector under the industry category 'services', which results in a relatively low baseline PD for this industry category (to which the changes in PDs provided by the OeNB were applied), whereas the OeNB uses a higher estimate based on loans to corporates only. Third, the portfolios covered in the TD and BU analyses are not identical. While for the TD analysis for all banks the same reported data are used, the banks

include and exclude different categories of assets in their BU estimations. Finally, the data included in the TD estimates of PDs is different, and might cover a longer period than the data included by the banks in their BU estimates. As the recent past has generally seen very favorable macroeconomic developments, estimation using data from this period will result in lower, and quite possibly overoptimistic, PDs.

77. **In addition, in the global downturn scenario, a prominent additional factor plays a role.** For individual Austrian customers that have loans at more than one bank, and hence are rated by more than one bank, the TD model assumes the lowest (most risky) rating applies. The banks, of course, calculate with their own internal rating. As the larger banks are in general better able to assess credit risk, their ratings are often less conservative than those of smaller banks, thus biasing the TD losses upwards. When replacing the appropriately conservative TD assumptions with assumptions on defaulted loans and PDs close to those used in the BU model (but keeping the higher LGDs), the TD estimate of total losses in the global downturn scenario decreases to € 2.7 billion, compared to € 1.6 billion in the BU analysis.

78. **A top-down analysis for the entire Austrian banking system reveals that a significant number of smaller Austrian banks will be severely affected by the scenario, but the systemic impact would remain small.** Lower domestic growth and increased domestic PDs would imply that approximately 4.6 percent of the banks would fall below the 8 percent capital ratio in year 3, while an additional 0.6 percent of banks would see their regulatory capital fall below 4 percent. In terms of assets, 1.4 percent of banks fall below the 8 percent capital requirement, while banks representing an additional 0.1 percent of assets fall below the 4 percent capital level.<sup>25</sup> However, as before, most of the small banks coming under strain will benefit from a resolution within their tier of the Austrian banking system, thus preventing actual defaults. Very conservatively assuming that no such resolution takes place, the problems in these small banks do result in a limited number of contagious defaults, but the systemic impact would be limited.

### *Market risks*

79. **Market risks do not seem to be a major source of risk for the large Austrian banks.** Interest rate risk dominates the other risks assessed, but remains limited. An instantaneous 200 bps increase across the entire Euro yield curve leads to banks' losses equivalent to 0.2 percentage points of capital on average, against an average capital ratio of 11.5 percent before the shock.<sup>26</sup> The dispersion of the effects across banks is large, but this is driven by the fact that some banks stand to gain from an interest rate increase, i.e., the deviation is mostly upward. Vice versa, some banks stand to lose from a parallel downward

<sup>25</sup> Meanwhile, banks representing 91 percent of assets maintain a capital adequacy ratio above 10 percent.

<sup>26</sup> Profits would remain positive, but in contrast to the three-year macro scenarios, are not taken into account for the instantaneous market risk shocks.

shift in the Euro yield curve. A steepening of the curve also leads to moderate losses (Table 9).

**Table 9. Austria: Market Risk Scenarios**

		Average impact (weighted by assets)	Dispersion (unweighted standard deviation)
<i>Interest Rates</i>			
Parallel upward shift of Euro yield curve by 200 bps	BU	-0.16	0.20
	TD	-0.34	0.31
Parallel downward shift of Euro yield curve by 200 bps	BU	0.13	0.20
	TD	0.39	0.36
Steepening of Euro yield curve through 200 bps increase of 10 year rate	BU	-0.08	0.10
	TD	-0.23	0.23
<i>Equity Prices</i>			
Decrease in domestic equity prices by 35%	BU	-0.04	0.05
	TD	-0.09	0.05
Decrease in non-domestic equity prices by 35%	BU	-0.08	0.15
	TD	-0.08	0.05
<i>Exchange Rates</i>			
Depeiciation of Euro by 15%	BU	-0.14	0.33
	TD	0.08	0.19
Appreciation of Euro by 15%	BU	0.19	0.31
	TD	-0.08	0.19
<i>Implied Volatility</i>			
Increase of implied volatility by 200bps	BU	0.00	0.01
Decrease of implied volatility by 100bps	BU	0.00	0.00

Source: OeNB and banks' calculations.

### *Indirect credit risk induced by exchange rate risk*

80. **Stress tests for indirect credit risk stemming from exchange rate movements confirm the resilience of the system, but show considerable effects on some of the large banks and on the system as a whole.** The stress test involved simultaneous negative shocks to exchange rates and the performance of repayment vehicles associated with many foreign currency loans. The impact of the shock reflects primarily the large outstanding volume of foreign currency loans. In the scenario where the CHF/EUR rate is shocked downward by 10 percent and the repayment vehicle is assumed to perform 15 percent worse than baseline, the impact on LLPs is some 300 percent, which amount to an impact of 1.4 percent of capital of the banking system. Roughly half of this impact is due to the foreign currency movements, with the other half due to the underperformance of the RPV. For the large banks, the impact is lower, ranging from the equivalent of 0.1 percent of capital to 1.4 percent, with an asset-weighted average impact of 0.7 percent of capital. The impact of movements in the EUR/JPY exchange rate is minor, reflecting the current low volume of JPY loans.

81. **The large impact can be explained in large part by the conservative modeling assumptions.** For instance, the total impact of the exchange rate movements is assumed to occur within a year, even though many foreign currency loans are for mortgages, with the concomitant long durations. In addition, many of the repayment vehicles are in the form of life insurance products, often with guaranteed minimum returns. Compared to some years

ago, the risk has diminished considerably, due to the shift of the currency composition of domestic foreign currency loans from JPY to CHF, which has historically exhibited a lower volatility vis-à-vis the Euro. In addition, the authorities have exerted considerable effort to limit these risks through publications, information campaigns, and the introduction of minimum standards for granting and managing foreign currency loans and loan repayment vehicles. Still, the results indicate that foreign currency loans should remain an area of continued vigilance both for the banks as well as for the supervisors and financial stability authority.

### *Liquidity*

82. **The Austrian banking system as a whole exhibits ample liquidity.** Many banks have a stable source of funding in deposits, in part due to a tiered structure of the banking system, where small banks contribute to the liquidity of the apex institution of their sector. The large banks all have liquidity management systems of various levels of sophistication in place. Liquidity stress tests, and the recent credit market turmoil, which did not threaten liquidity at any of the large Austrian banks, illustrate a prudent approach towards liquidity.

83. **The liquidity stress tests comprised of a bottom-up liquidity crunch scenario, as well as top-down analysis single-factor shocks to of liquidity ratios he banks were also asked to run a specific liquidity scenario.** The three-months bottom-up stress tests scenario assumed an increase in the spread between the secured and unsecured Euro money market rates of 80 bps, and a simultaneous reduction in the pool of collateral by 30 percent. The top-down analysis of single-factor shocks comprised (i) a decrease in the market value of liquid bonds of 25 percent; (ii) a decrease in the market value of the equity portfolio of 35 percent; (iii) a withdrawal of 40 percent of all short-term funding; and (iv) a withdrawal of 50 percent of short-term deposits of nonbank customers. All banks remained liquid under these circumstances.

84. **Going forward, the banks indicated that liquidity management is likely to gain in prominence given the current prolonged market turmoil.** However, given their funding structures, business models, and the setup of the banking groups of which they are part, none of the large banks see major strains over and above the generally higher market price for liquidity in the unsecured market. In case the economies of the countries in CESE and the CIS would suffer a severe recession, the major Austrian banks operating in this region might experience difficulties in securing funding, which would put additional strain on liquidity.