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The OeNB's biannual *Financial Stability Report* provides regular analyses of Austrian and international developments with an impact on financial stability. In addition, it includes studies offering in-depth insights into specific topics related to financial stability.

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Editorial close: May 25, 2010

Opinions expressed by the authors of studies do not necessarily reflect the official viewpoint of the OeNB or of the Eurosystem.

Financial stability means that the financial system – financial intermediaries, financial markets and financial infrastructures – is capable of ensuring the efficient allocation of financial resources and fulfilling its key macroeconomic functions even if financial imbalances and shocks occur. Under conditions of financial stability, economic agents have confidence in the banking system and have ready access to financial services, such as payments, lending, deposits and hedging.

Reports

Fragile Recovery of Austria's Financial System

Industrialized Economies Return to Growth

Following the severe recession in 2009, the industrialized economies are set to return to growth in 2010 although the recovery will be more fragile in the euro area than in the U.S.A. and in Japan. In the international financial markets, the perception of corporate risks improved in the first few months of 2010, as indicated by the narrowing of corporate bond yield spreads and the rally on stock markets. By contrast, uncertainties about fiscal sustainability and thus the risk premiums on government debt securities of some euro area countries (particularly, Greece) increased in spring 2010. Only the measures implemented by the EU and the IMF stabilized the euro area's government bond markets in early May.

In Central, Eastern and Southeastern Europe (CESEE), economic stabilization which had commenced in mid-2009 continued in almost all countries, buoyed by the return to import growth in the industrialized countries and by the EU and IMF's country-specific financing programs. Current account deficits decreased significantly and, in certain cases, turned into surpluses. While credit growth was in marked decline and, in some cases, even negative in 2009, credit risks increased on the back of currency depreciation and sluggish growth. In the course of 2009, this increase has slowed down noticeably, however. Country-specific risks still persist, particularly in respect of fiscal consolidation.

Small Increase in Corporate and Household Financing

Modest annual growth is projected for the Austrian economy in 2010. In 2009, when the Austrian economy was in recession, corporate balance sheets reflected the impact of the economic

crisis: Corporate profits fell by 9% and external financing was down to a third of the previous year's level. Annual growth in bank lending has been negative since end-2009. This decline in financing volumes is likely to have had both demand and supply-side causes. First, the drop in investment activity reduced corporate financing requirements. Second, owing to the deterioration of corporate ratings in the wake of the economic crisis, the banking sector's credit standards were markedly higher in spring 2010 than before the crisis. Nothing suggests that banks tightened their credit supply more than is usual in an economic downturn. Historically low interest rates in the wake of the 2008/09 rate cuts strengthened banks' loan financing.

Households have so far increased their borrowing by only a very modest extent. Low levels of both new household debt and interest rates have reduced households' debt ratio and interest expenses. An additional contributory factor is the – by international standards – very high share of variable interest rate loans which, however, implies increased interest rate risks in case interest rates go up. The share of foreign currency loans in loans outstanding is still very high despite the latest reductions. As for Austrian households' financial assets, the valuation losses of 2007 and 2008, which arose as a result of the economic crisis, have been recouped only to some extent.

Austrian Banking Environment Remains Challenging

Austria's financial system benefited from the recovery in the financial markets. For the banking sector, this development was reflected in improved refinancing conditions and trading income. Interest income, the most important income component, proved to be a sta-

bilizing factor. On an unconsolidated basis (which is the applicable basis for domestic business), the profitability of Austrian banks was marginally positive only owing to extraordinary income. In 2009, despite the economic downturn and persistent uncertainties in CESEE, Austrian subsidiary banks in the region made a significantly positive contribution to income of some EUR 1.8 billion.

However, increased credit risk owing to the global recession and the accompanying rise in loan loss provisions posed some problems to the banks, although the increase in bank lending in Austria was significantly smaller than that at subsidiary banks in the CESEE region. Overall, credit risk provisions absorbed a growing share of profits.

In respect of foreign currency loans, bank lending was very restrained, not least owing to the publication, by the FMA and OeNB, of extended minimum standards governing the granting of foreign currency and repayment vehicle-linked loans to Austrian households.

At end-2009, the consolidated core capital ratio was 9.3%, up significantly on the previous year (+7.7%). This rise,

which was attributable to capital injections from both the private and public sector, undoubtedly also increased banks' risk-bearing capacity. Nonetheless, in view of current developments in the economic environment and ongoing regulatory initiatives, the Austrian banking sector is expected to require additional capital in the medium term.

Even if Austrian banks' business model is fundamentally sustainable and the banking system is sound overall, the banking environment will continue to remain challenging. Credit risk is expected to remain heightened in both Austria and abroad, at least until the end of 2010. Uncertainties also persist about the extent to which the recent income improvement will prove sustainable.

The visible upturn in financial markets in 2009 was also reflected in the investment income of insurance companies, mutual funds, pension funds and severance funds. Even so, the confidence of fund investors in Austrian funds only returned gradually. The CESEE region's stabilization, which occurred in 2009, was also important for Austrian insurance companies active in these countries.

Return to Growth

Industrialized Countries: Positive Growth Outlooks for the U.S.A. and Japan, Mixed Ones for the Euro Area

For the *industrialized countries*, particularly the U.S.A. and Japan, the IMF economic outlook of spring 2010 predicts positive economic growth in 2010 following the severe recession in 2009. Growth will inter alia be fueled by the robust development of the Asian economy and by the recovery in world trade (2010 outlook: +7%). Compared with the IMF outlook of autumn 2009, the forecast for GDP growth in 2010 was revised up by 1.6 percentage points for the U.S.A. and by 0.6 percentage points for the euro area.

In the U.S.A., real GDP grew by 0.8% quarter on quarter in the first quarter of 2010 (annualized: 3.2%) and was 2.5% higher than in the same period a year ago. Private consumption and a return to inventory building accounted for the largest positive contributions to quarterly growth. The residential real estate market recently also reported positive news. Although the

Case-Shiller price index for single-family homes fell month on month in March 2010 for the first time after having risen eight times in a row, year on year it improved for the first time since December 2006. Overall, however, the real estate market remains exposed to risks (e.g. impairment of commercial real estate, rising indebtedness of public mortgage institutions). The financial crisis brought about a sea change in the U.S. labor market. Although unemployment of 9.7% in April 2010 was below the record high of October 2009 (10.1%), the U.S.A. is currently struggling with growing long-term joblessness for the first time in its history. Meantime, 44% of the 15 million U.S. unemployed have been without work for more than 27 weeks. In addition, the labor market is not expected to improve significantly until end-2011. Although the year-on-year rise in the consumer price index (CPI) reached 2.7% in December 2009, it slipped to 2.3% by March 2010. In that month, the core inflation rate stood at a 1.1% year on year. At its meeting of April 27 and 28,

Table 1

IMF World Economic Outlook: Industrialized Countries

	GDP (real annual change)						CPI (change of annual average)						Current account balance			
	Apr. 10		Oct. 09		Apr. 10		Apr. 10		Oct. 09		Apr. 10		Apr. 10			
	2008	2009 ¹	2010 ¹	2009	2010 ¹	2011 ¹	2008	2009 ¹	2010 ¹	2009	2010 ¹	2011 ¹	2008	2009	2010 ¹	2011 ¹
	%						%						% of GDP			
Industrialized countries	0.5	-3.4	1.3	-3.2	2.3	2.4	3.4	0.1	1.1	0.1	1.5	1.4	-1.3	-0.4	-0.4	-0.5
U.S.A.	0.4	-2.7	1.5	-2.4	3.1	2.6	3.8	-0.4	1.7	-0.3	2.1	1.7	-4.9	-2.9	-3.3	-3.4
Euro area	0.6	-4.2	0.3	-4.1	1.0	1.5	3.3	0.3	0.8	0.3	1.1	1.3	-0.8	-0.4	0.0	0.1
Germany	1.2	-5.3	0.3	-5.0	1.2	1.7	2.8	0.1	0.2	0.1	0.9	1.0	6.7	4.8	5.5	5.6
France	0.3	-2.4	0.9	-2.2	1.5	1.8	3.2	0.3	1.1	0.1	1.2	1.5	-2.3	-1.5	-1.9	-1.8
Italy	-1.3	-5.1	0.2	-5.0	0.8	1.2	3.5	0.8	0.9	0.8	1.4	1.7	-3.4	-3.4	-2.8	-2.7
Austria	2.0	-3.8	0.3	-3.6	1.3	1.7	3.2	0.5	1.0	0.4	1.3	1.5	3.5	1.4	1.8	1.7
United Kingdom	0.5	-4.4	0.9	-4.9	1.3	2.5	3.6	1.9	1.5	2.2	2.7	1.6	-1.5	-1.3	-1.7	-1.6
Japan	-1.2	-5.4	1.7	-5.2	1.9	2.0	1.4	-1.1	-0.8	-1.4	-1.4	-0.5	3.2	2.8	2.8	2.4

Source: IMF (World Economic Outlook), October 2009 and April 2010.

¹ Forecast.

2010, the Federal Reserve's Open Market Committee (FOMC) left the target range for the Federal Funds rate unchanged at close to 0%. Furthermore, the wording that the FOMC continues to anticipate that economic conditions are likely to warrant exceptionally low levels of the key interest rate for an extended period remained unchanged.

In the *euro area*, real GDP grew by 0.2% quarter on quarter in the first quarter of 2010 and was 0.6% higher than in the same period of 2009. Exports and inventory changes accounted for the largest positive contributions to quarterly growth. In the fourth quarter of 2009, real GDP had gone up by 0.1% quarter on quarter. The annual HICP rate climbed from 0.9% in December 2009 to 1.4% in March 2010, primarily owing to considerably higher energy prices on a year-on-year basis. Core inflation (excluding energy and unprocessed food) accordingly eased from 1.0% to 0.9%. At its meeting in early-April 2010, the Governing Council of the ECB decided to keep the key inter-

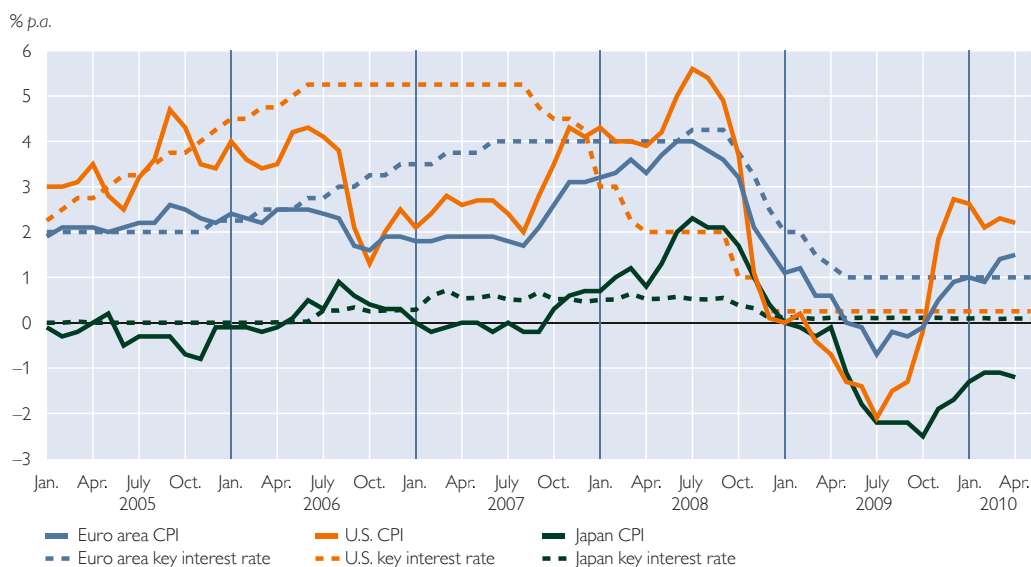
est rate at 1%. At the same meeting, the ECB also extended the application period of the regulations governing collateral for central bank refinancing. In early May 2010, the minimum rating for collateral in the form of Greek government debt securities was suspended.

In the first quarter of 2010, the *Japanese* economy expanded by 1.2% quarter on quarter (+4.2% against the same quarter of the previous year). Growth was fueled in roughly equal measure by net exports – to Asia, in particular – and by domestic demand. In March 2010, annual inflation stood at –1.1%. The inflation rate is not expected to return to positive territory until 2011. The Bank of Japan adhered to its zero interest rate policy at end-April 2010. This means Japan will continue to have the lowest interest rates of all the G7 countries.

In the U.S. and euro area *money markets*, LIBOR and EURIBOR interest rates have stabilized at a low level since fall 2009. Risk premiums in the U.S. money market continued to re-

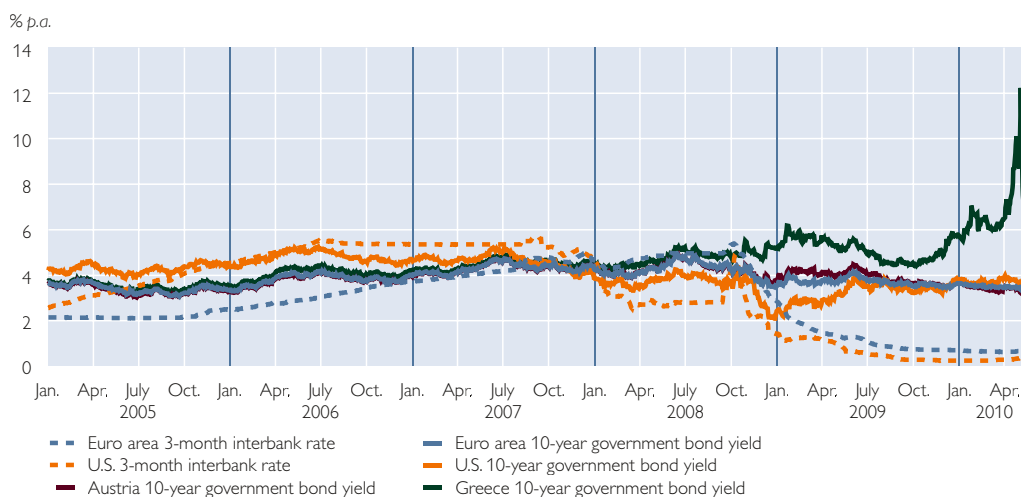
Chart 1

Euro Area, U.S.A., Japan: Inflation and Key Interest Rates



Source: Eurostat, national statistical offices, Thomson Reuters, OeNB.

Euro Area and U.S.A.: 3-Month Money Market Rates and 10-Year Government Bond Yields



Source: Thomson Reuters, OeNB.

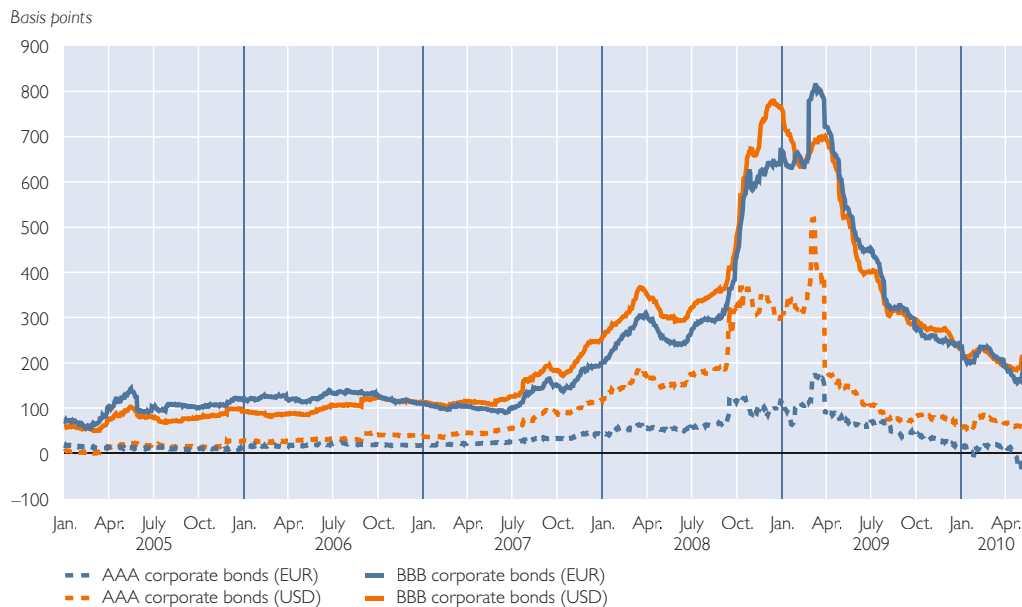
main below those in the euro area. In *government bond markets*, long-term interest rates remained relatively stable until March 2010, compared with the start of the year. However, 10-year government bond yield spreads between Germany and some other euro area countries widened significantly again. In particular, the risk premiums on Greek government bonds reached record values of over 700 basis points at the end of April 2010, forcing Greek Prime Minister Georgios Papandreou to make an official request for assistance from the EU and IMF. On May 2, 2010, a rescue package for Greece was set in place, totaling EUR 110 billion in bilateral loans from both euro area countries (EUR 80 billion) and the IMF (EUR 30 billion). One condition for the assistance is that Greece implements a rigorous government budget austerity program. In the financial markets, however, uncertainties persisted about the implementation of savings targets despite the recession and about the possible escalation of fiscal problems in other euro area countries

as well as, coupled with this, speculative transactions. Only the EU and IMF measures announced on May 9, 2010 (provision of an immediately available facility for external stabilization amounting to EUR 60 billion and establishment of a credit limit in the amount of EUR 660 billion, cofinanced with EUR 440 billion from the EU and EUR 220 billion from the IMF) and the ensuing government bond purchases by euro area central banks from May 10, 2010, stabilized the government debt markets in the euro area. In addition, the EUR-USD swap line to ensure the banking sector's U.S. dollar liquidity was reinitiated.

The yield spreads of U.S. and euro area *corporate bonds* further normalized for both AAA- and BBB-rated bonds. After an interruption in early 2010, the global recovery observed in the *stock markets* since March 2009 continued until end-April 2010. Early that month, for the first time since the collapse of Lehman Brothers, the Dow Jones closed at over 11,000 points. Moreover, the stock markets rallied in response to the euro area's stabilization measures.

Chart 3

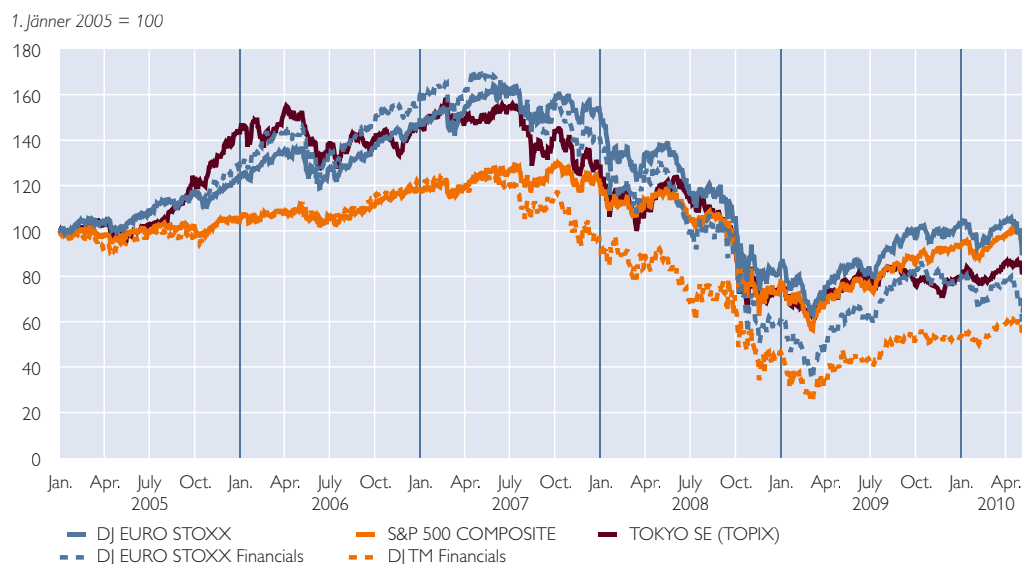
Euro Area and U.S.A.: Spreads of 7-Year to 10-Year Corporate Bonds against Government Bonds



Source: Thomson Reuters, OeNB.

Chart 4

Euro Area, U.S.A., Japan: Stock Market Indices and Subindices for Financial Institution Stocks



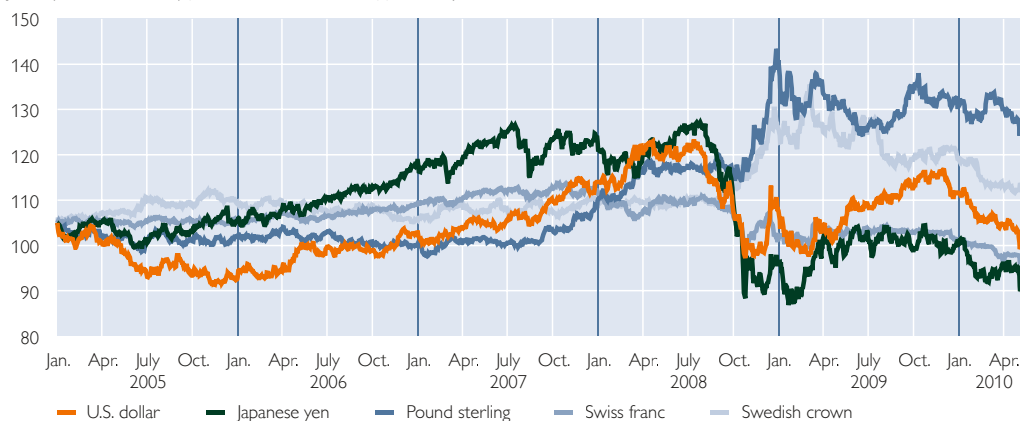
Source: Thomson Reuters, OeNB.

In response to both the improved growth outlook for the U.S.A. and Japan and to the government debt problems in some euro area countries, the euro

has, in recent months, been depreciating against other important currencies in the *foreign exchange markets* despite the prevailing interest rate differential.

Industrialized Countries: Exchange Rates against the Euro

January 1, 2005 = 100 (upward movement = euro appreciation)



Source: Thomson Reuters, OeNB.

Note: National currency per euro unit.

CESEE Compared with Other Emerging Markets

After annual global economic growth of some 5% from 2004 to 2007, the *world economy* grew by no more than 3% in 2008 and shrank by around 0.5% in 2009. For both 2010 and 2011, the IMF spring outlook predicts growth of just over 4%. Of all regions of the world (including the industrialized countries), Asia's emerging markets will make the largest contribution to global GDP growth, as has been the case for some years now. In 2009, despite Japanese GDP shrinking by 5.2%, Asian emerging markets only suffered a relatively modest decline in GDP growth. By contrast, GDP slumped in the three regions of CESEE (here excluding the CIS), the CIS and Latin America. Owing to these three regions' very close economic and financial ties with the euro area and the U.S.A., respectively, this slump reflected in particular the recession in the euro area and the U.S., as well as – in the CIS and Latin American countries – the (recession-induced) downward spiral of commodity prices. In

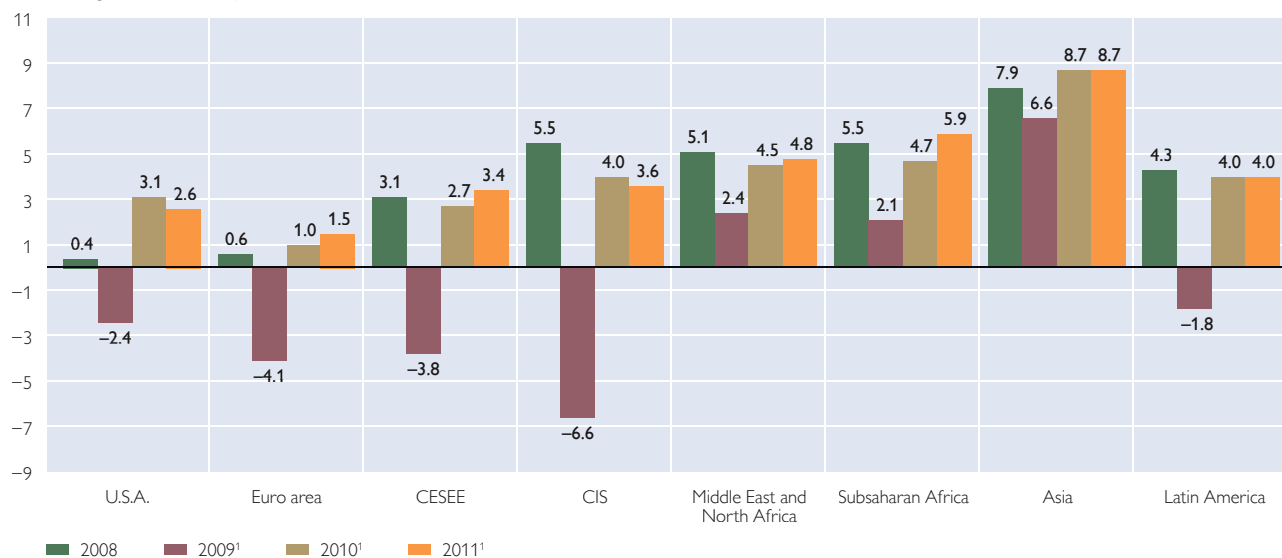
parallel to this, there were naturally some major differences within the individual economic areas. For instance, Poland, which has a weight of more than 20% in the CESEE aggregate, registered positive growth. According to the IMF, the economy will again expand at a far faster pace in the CESEE and CIS regions than in the euro area in 2010 and 2011 and the convergence process of average per capita income will increasingly get under way again. At the same time, however, growth will lag behind that of other emerging market regions (particularly, Asia), which still have a much lower base of GDP per capita. Compared with its outlook in autumn 2009, the IMF has upgraded its 2010 forecast for all emerging economies by 1.3 percentage points, with the CESEE and CIS regions up by 1 percentage point and 1.8 percentage points, respectively.

Global *external imbalances* decreased in 2009. Although emerging market regions which had previously had current account surpluses still showed surpluses (with the exception of Sub-Saharan Africa), some of these were now

Chart 6

Emerging Economies and Selected Industrialized Countries: GDP Forecast

Annual change in % at constant prices



Source: IMF (World Economic Outlook), April 2010.

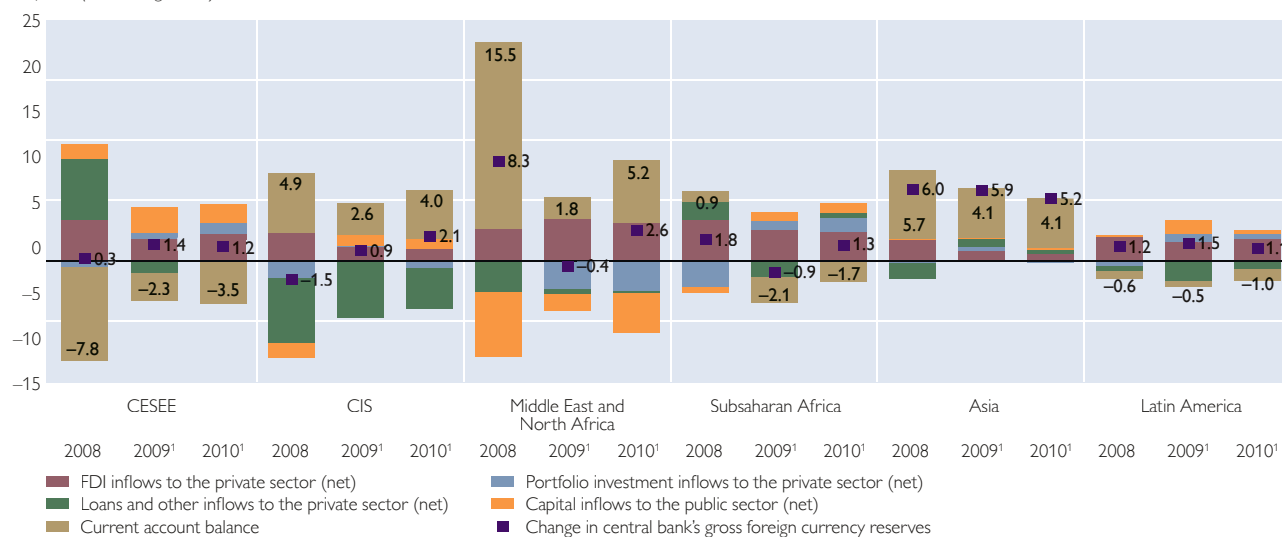
¹ Forecast.

Note: CESEE excluding European CIS countries. Asia excluding (newly) industrialized countries. Latin America including Caribbean countries.

Chart 7

Emerging Markets: Current Account Balances and Net Capital Inflows

% of GDP (at exchange rates)



Source: IMF, OeNB.

¹ Forecast.

Note: Negative net capital inflows (to the public sector) refer to net capital outflows from the public sector (to industrialized countries). Positive values for the change in official gross reserves indicate an increase. CESEE excluding European CIS countries, the Czech Republic, Slovakia and Slovenia. Asia excluding South Korea, Taiwan, Hong Kong and Singapore.

drastically reduced. This situation is attributable to, above all, the decline in the U.S. current account deficit and – particularly in the case of the CIS as well as the Middle East and North Africa – to the (recession-induced) slump in commodity prices. In respect of emerging Asian markets, a lower current account surplus is expected in 2010 compared with 2008 while GDP growth is likely to be more robust, indicating a slight shift toward domestic demand-driven economic growth. In 2009, the CESEE current account deficit decreased at a much faster pace than net FDI inflows, which meant the latter almost entirely covered the deficit for the first time in years. In Sub-Saharan Africa, which had a current account deficit in 2009 for the first time since 2005, and in Latin America, which saw current account deficits in 2008 and 2009 after several years of surpluses, net FDI inflows also covered the deficits. In 2010, as in the two previous years, only the CIS is likely to witness net capital outflows from the private sector, albeit again (as in 2008) on a smaller scale than the expected current account surplus.

From end-September 2008 to end-2009, *cross-border credit claims on emerging markets by BIS reporting banks*, which are largely from industrialized countries, declined at a slower pace vis-à-vis CESEE banks than vis-à-vis Latin American and Asian banks – despite the (deeper) recession in CESEE and the previously more buoyant increase of credit claims on CESEE banks. This situation is attributable to two factors: first, most CESEE countries' banking sectors are almost wholly owned by BIS-reporting banks (particularly, those from the euro area) and, second, the credit lines to their own subsidiary banks in CESEE were kept almost stable. In this way, both the banking sec-

tor's ownership structure and the business policies of group headquarters in relation to their own subsidiary banks differ from the situation in Latin America and Asia. By contrast, credit claims on banks in the CIS, which had previously expanded especially strongly, declined at a faster pace compared with lending to banks in Latin America and Asia. The latter situation is also likely to reflect the particularly deep recession and problems specific to certain heavyweights (Ukraine, Kazakhstan). Credit claims on banks in CESEE and – to an even greater extent – on banks in Latin America and Asia did not pick up until the fourth quarter of 2009. As

Chart 8

CESEE and CIS: Domestic and Cross-Border Credit to CESEE and CIS by BIS Reporting Banks

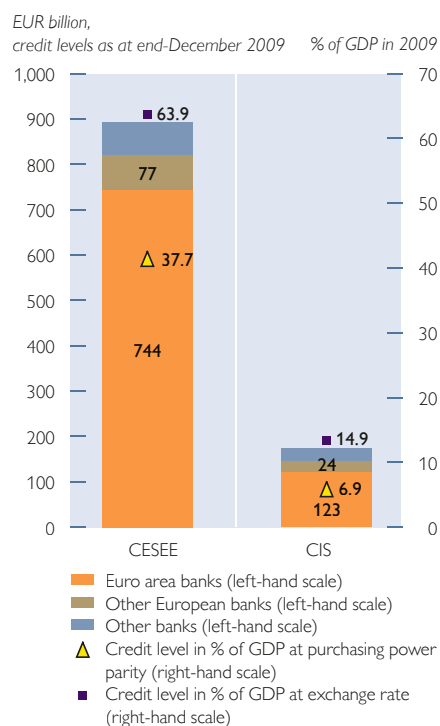
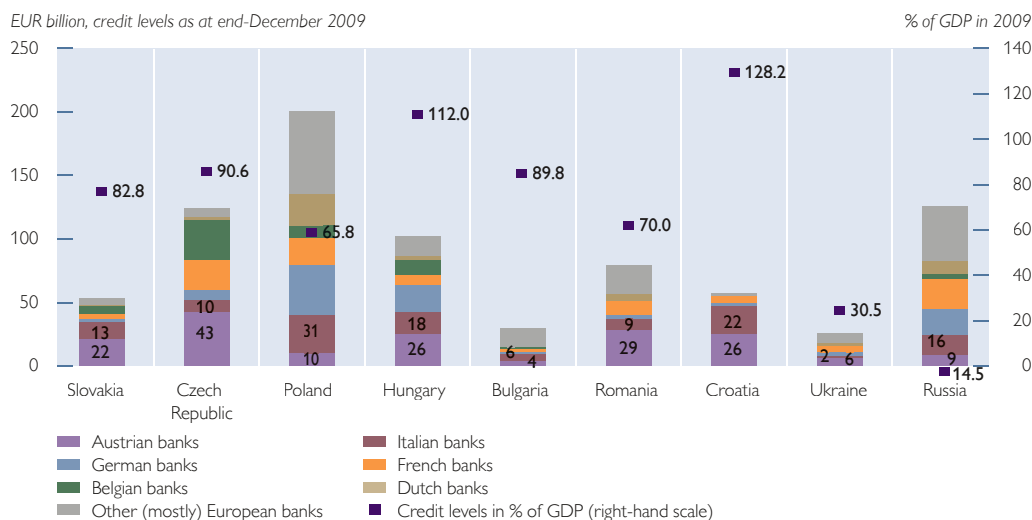


Chart 9

CESEE and CIS: Domestic and Cross-Border Credit to CESEE and CIS Countries of BIS-Reporting Banks



Source: BIS, IMF, OeNB.

Note: Austrian banks not including UniCredit Bank Austria (assigned to Italy). Points: credit levels of all BIS reporting banks in % of GDP (at exchange rates) of the recipient region (right-hand scale).

for the CIS, lending to banks in this region continued to decline.

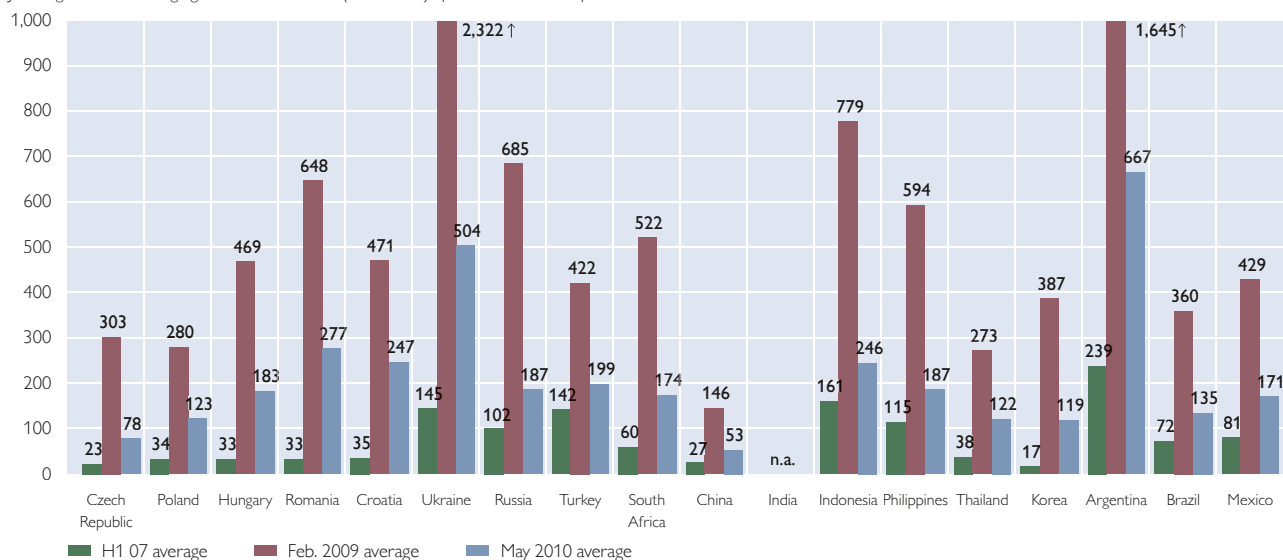
A breakdown by individual CESEE countries and by the BIS reporting banks' countries of origin shows that Austrian, Italian, German and French banks control a considerable share of the lending market in most countries of the region. In certain CESEE countries, however, Belgian and Dutch (in the Baltic countries, also Swedish and in SEE also Greek) banks are represented to a greater extent.

In the *financial markets (stock market, foreign bond market) of emerging economies*, the global environment (low level of interest rates in industrialized countries, prospects for growth and currency appreciation in emerging markets) and the decline in international investors' risk aversion were reflected in strong net inflows in the first quarter of 2010. Net inflows cumulated since 2001 have now reached pre-crisis levels (debt securities) and, in some cases, exceeded these levels (stocks). Despite a

high issuance volume (of government bonds and, especially in Latin America, corporate bonds) – as in the fourth quarter of 2009 – , foreign bonds generated higher total return in the first quarter of 2010 than shares issued by enterprises in industrialized countries and emerging markets since the bond spreads continued to narrow significantly. Investment is increasingly likely to be made in emerging market debt securities denominated in national currency, which will increase pressure for currency reappreciation. Uncertainties in the international financial market stemming from the fiscal problems of certain euro area countries were reflected only temporarily and to a relatively small extent in the asset performance of emerging markets. Given visible signs of a renewed lack of risk differentiation, the medium-term risks of bubble formation, overheating and imbalances are increasing.

Emerging Markets: Spreads of Foreign Government Bonds in Foreign Currency

JP Morgan's Euro Emerging Market Bond Index (Euro EMBI) spread, level in basis points



Source: Bloomberg, Thomson Reuters, OeNB.

Note: Spreads refer to yield differentials vis-à-vis euro area government bonds of the same maturity. Russia, Indonesia and Argentina: (USD-based) EMBI and U.S. government bonds; Czech Republic, Thailand and Korea: 5-year sovereign CDS premiums serve as a proxy.

CESEE: Stabilization Continues¹

Financial market developments in the CESEE countries (here including the European part of the CIS) were largely characterized by incipient stabilization. In the banking sector, furthermore, the share of nonperforming loans (NPLs) rose to a somewhat smaller extent in most countries in the fourth quarter of 2009 than in previous quarters. In the second half of 2009 and the first quarter of 2010, currency markets, national currency denominated-government bond markets and credit markets in CESEE were also still marked primarily by the gradual abatement of the global crisis' financial and economic impact. Greece's refinancing problems, which have generally somewhat dampened international investors' willingness to take risks – at least temporarily

–, had a relatively small impact on CESEE markets.

Stabilization of the real economy, which had already commenced in most countries in the second quarter of 2009, also continued in the fourth quarter of 2009 and the first quarter of 2010. In terms of seasonally-adjusted real GDP, the Czech Republic, Slovakia and Poland each registered a further acceleration in quarter-on-quarter growth in the fourth quarter of 2009. Also for Russia, which saw robust quarterly growth as early as in the third quarter of 2009, the growth rate released for the entire year implies an increase in quarter-on-quarter growth in the fourth quarter of 2009. Similar momentum was seen in Hungary where the economy was shrinking at a steadily slower pace before returning to the growth path in the fourth quarter of

¹ For a detailed description of the macroeconomic development of these countries, see "Recent Economic Developments" in OeNB, *Focus on European Economic Integration Q2/10*.

2009. While in Slovenia and Romania, economic growth had been positive in the third quarter of 2009, GDP went down again in both countries later on.

Even if some countries started to see positive quarter-on-quarter growth, in the fourth quarter of 2009 real GDP was at a lower level year on year in almost every CESEE country – namely 2% to 4.5% lower than the previous year's level in Slovakia, the Czech Republic, Hungary, Croatia and Russia, and 5% to 7.5% lower in Bulgaria, Slovenia, Romania and Ukraine. With GDP growth of 3.6%, Poland was the only CESEE country to buckle this trend. Its lower weight of exports relative to overall demand, sharp currency depreciation and fiscal policies also contributed to this growth. In the fourth quarter of 2009, Poland registered annual growth of gross fixed capital formation for the first time since the start of the crisis. During the crisis, the inventory levels in the region decreased owing to weakening foreign demand and the decline in both gross fixed capital formation and private consumption. In the fourth quarter of 2009, inventory build-up in Bulgaria and Croatia and slowing inventory run-downs in Ukraine made a positive contribution to growth again, thereby curtailing the year-on-year decline in GDP. Across the entire CESEE region, net exports again made stronger positive contribution to the year-on-year change in GDP in the fourth quarter of 2009. This development was only partly attributable to a stronger decline in imports over exports: In Poland, the Czech Republic, Hungary, Bulgaria, Romania and Russia, in the fourth quarter of 2009 exports started to

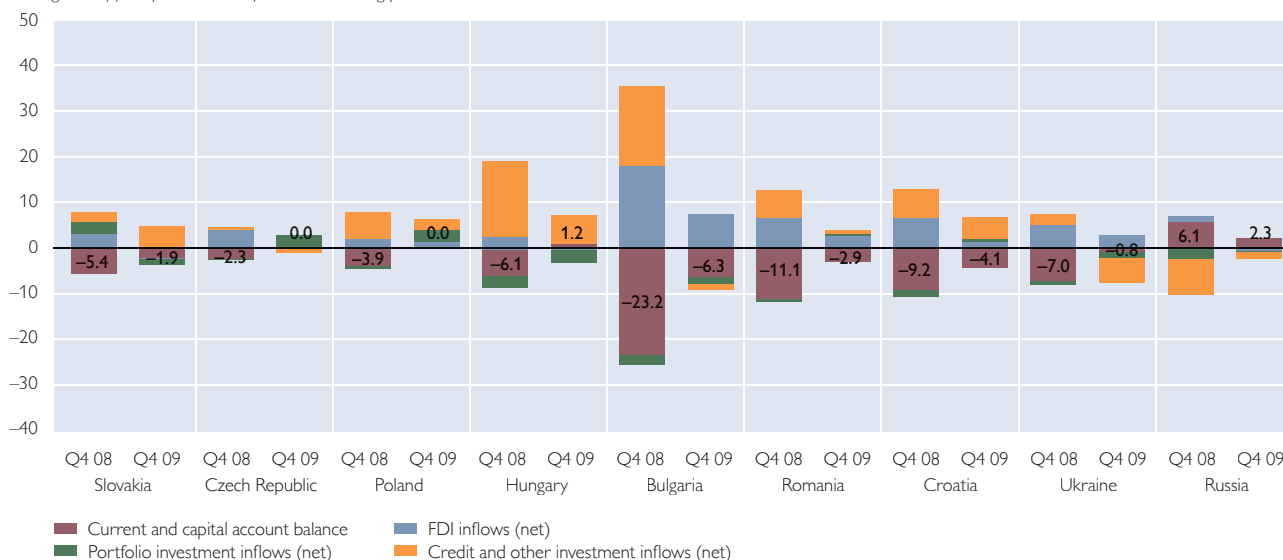
grow again year on year, while imports continued to fall. This situation was for the most part accompanied by a reduction in the combined current and capital account deficits.²

The correction – having started already in the first half of 2009 – of partly high deficits in the *combined current and capital account* in Southeastern European countries was also reflected in a much reduced balance for the year as a whole. For instance, the deficit in Bulgaria amounted to 6.3% of GDP in 2009 and that in Romania and Croatia to 2.9% and 4.1% of GDP, respectively. In the case of Bulgaria, this is equivalent to a correction by more than 15 percentage points of GDP compared with 2008. Even the Central European countries saw a year-on-year reduction in current account deficits (here largely resulting from profit and interest transfers abroad). Hungary, Poland and the Czech Republic even registered modest current account surpluses. The development in Hungary, whose current account deficit of 6.1% of GDP turned into a surplus of 1.2% of GDP in 2009 (owing to positive quarterly export growth in the previous three quarters), was particularly pronounced. In addition to a slump in domestic demand, currency depreciations in the case of countries without a fixed currency peg especially helped reduce the current account deficits, in particular via imports. Although Russia still posted a current account surplus, the latter shrank from 6.1% of GDP in 2008 to 2.3% in 2009. The main reason for this development was the slide in oil prices, in particular. This situation reflects the Russian economy's continued heavy dependence on the price development of

² According to current IMF balance of payments definitions, the capital account comprises only a few transactions, including primarily those previously part of the current account (as a component of the transfers balance). Transactions that were previously included under "capital account" (e.g. direct investment, portfolio investment, loans) are now shown in the so-called "financial account."

Current and Capital Account Balance and Its Financing

Moving sum of four quarters in % of GDP in this rolling period



Source: Eurostat, national central banks, OeNB.

energy and commodities. In Ukraine, the current account deficit narrowed from 7% of GDP for 2008 as a whole to 0.8% in the entire year 2009, which – in addition to the slump in domestic demand and currency depreciation – the recovery of steel prices in the course of the year can explain.

In 2009 as a whole, *financial account* surpluses decreased year on year in every country of the CESEE region, with the exception of Russia, which recorded a declining financial account deficit due to the sharp contraction in credit and investment outflows (as a percentage of GDP). In other CESEE countries, by contrast, net inflows of credit and other investment went down significantly. In 2009 as a whole, Bulgaria and the Czech Republic even registered modest net outflows in this category, while net outflows from Ukraine were heavy. What is more, net FDI inflows as a percentage of GDP also decreased year on year in every CESEE country. In the course of 2009, net FDI

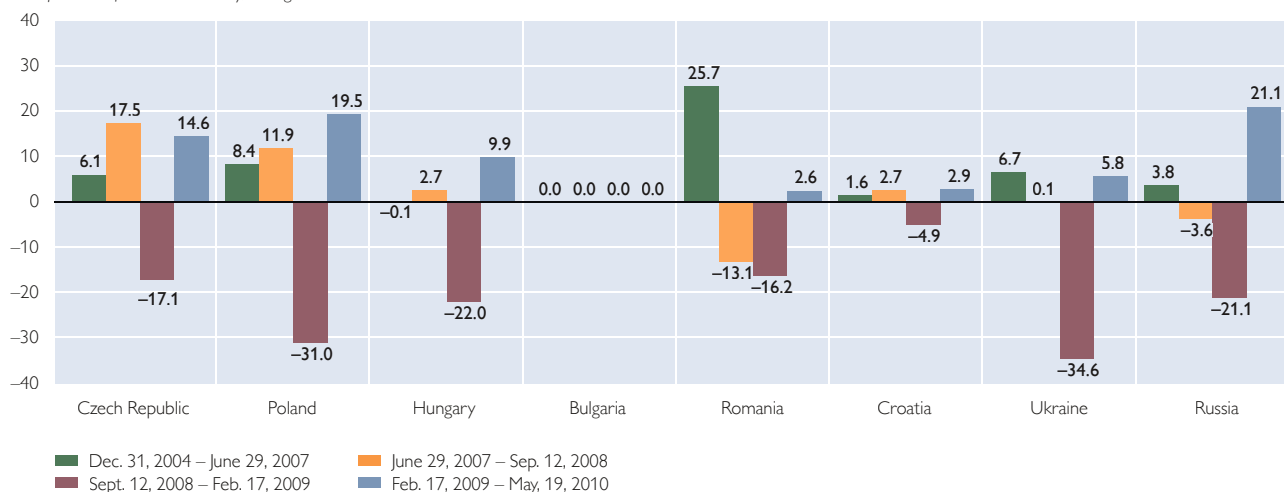
inflows further contracted year on year in most of the countries under review in both the third and fourth quarters of 2009. In Slovakia, Hungary and Russia, this situation even gave rise to (modest) net FDI outflows in 2009 as a whole.

The impact of the recession, as well as of sluggish growth, had a negative effect on the *fiscal balance* on both the revenue and expenditure side (impact of automatic stabilizers). In 2009, public debt levels increased in every country in this region. In Ukraine, Romania and Slovenia, they rose particularly steeply compared with end-2008, albeit from a relatively low level. Currently, 20 EU Member States are subject to excessive deficit procedures. Also in the CESEE EU Member States, budget deficits ranged between 3.9% and 8.3% of GDP in 2009, i.e. above the 3% threshold, although CESEE countries responded to the economic downturn with only very mild fiscal stimuli; some countries went as far as adopting procyclical consolidation mea-

Chart 12

National Currencies and the Euro

Euro per unit of national currency, change in %



Source: Thomson Reuters, OeNB.

asures in the crisis in a bid to stabilize international investors' confidence. Among the Central European countries, only the Hungarian budget deficit (4% of GDP) came relatively close to the Maastricht ceiling, with the EU and IMF stabilization programs both rendering the deficit possible and limiting it at one and the same time. Even Bulgaria and Russia, which still generated budget surpluses in 2008, registered a budget deficit of 3.9% and 6.2% of GDP, respectively, in 2009. In Russia, in addition to other factors, oil price developments, in particular, had a negative effect on public finances (compared with 2008).

In some countries, budgetary developments are a key factor for the further payment of tranches of *EU and IMF rescue loans*. In Ukraine, an important measure was implemented in this respect at the end of March 2010, and the 2010 government budget was approved in parliament. At 5.3% of GDP, the consolidated³ budget deficit is in com-

pliance with the IMF's stipulated ceiling of 6% of GDP. The stabilization program, which was launched at end-2008 and has since been put on hold, provides for a total payment of EUR 12.8 billion, of which some EUR 4.5 million can be disbursed if the program is reignited. Talks are currently under way between the IMF and the Ukrainian authorities in relation to this matter. In Romania too, major groundwork for further disbursements under the EU and IMF stabilization program was laid at end-March 2010. For instance, Romanian legislation relating to the preparation and execution of the government budget was amended in coordination with the IMF (including a three-year budgetary framework, the legal restriction of budgetary revisions, the establishment of an independent oversight committee, etc.). Under the IMF program, which will run until March 2011, EUR 9.4 billion of a total EUR 13 billion has already been disbursed. The final EU tranche is ex-

³ The consolidated budget includes Naftogaz, the state oil and gas company.

pected in the second quarter of 2011. To date, EUR 2.5 billion of a total EUR 5 billion has been disbursed under the EU program.

In the first quarter of 2010, most of the countries under review saw a modest rise in *inflation* year on year. In Hungary, the Czech Republic, Bulgaria, Romania and Slovenia, the HICP's energy components, in particular, contributed to the price uptrend. In Russia, Ukraine and Poland, disinflation persisted, albeit starting at widely differing levels. In Slovakia, the price level stagnated in the second half of 2009. In January and February 2010, Slovakia was the only CESEE country under review that recorded falling prices, while in March 2010, prices began to climb again slightly on a year on year basis.

In respect of the *currencies* of the countries under review, the stabilization period, which commenced in March 2009, continued in the reporting period (to May 2010). Compared with the record lows of February 2009, in particular the Polish zloty (+19.5%), the Czech koruna (+14.6%), the Hungarian forint (+9.9%) and the Russian ruble (+21.1%) firmed strongly against the euro. To counter the appreciation pressure on the Polish zloty, in March 2010 Polish central bank intervened in the foreign exchange markets for the first time in 12 years. In Russia (currency basket: U.S. dollar 55%, euro 45%) and Ukraine (currency primarily pegged to the U.S. dollar), the depreciation of the euro relative to the U.S. dollar gave rise, *ceteris paribus*, to the appreciation of the national currencies relative to the euro. The Bank of Russia, too, recently repeatedly countered the upward pressure on the Russian ruble via substantial foreign currency purchases and, what is more, lowered key interest rates by 25 basis points to

8%. By contrast, the Romanian (+2.9%) and Croatian (+2.9%) national currencies appreciated only slightly. Despite these appreciations, only the Czech koruna has so far approached its pre-crisis exchange rate, the level of which may have signified an excessive valuation of the national currency in many countries, however.

Despite the turmoil since early 2010 surrounding the Greek national budget and the corresponding significantly widening spreads of Greek government debt securities, for most countries in the region *yields on ten-year government bonds denominated in national currency* remained unchanged or were slightly lower in the first quarter of 2010 compared with the fourth quarter of 2009. Unlike in the other CESEE countries, yields on ten-year government bonds denominated in national currency increased in both Romania and Bulgaria in the first quarter of 2010. In Romania's case, yields rose despite gradual key interest cuts from 8% at end-2009 to 7% in March 2010. In most CESEE countries, short-term interbank rates remained almost unchanged or were slightly lower in the first quarter of 2010, compared with the fourth quarter of 2009. In most of these countries, this development was accompanied by further cuts in key interest rates. Romania and Croatia even witnessed sharper decreases in interbank rates by the order of 3 and 4 percentage points, respectively. At the end of the first quarter of 2010, the yield curve was sloping upward in Slovakia, the Czech Republic, Poland, Hungary, Bulgaria and Romania. In this respect, Romania's yield curve normalized since short-term interest rates had been still higher than ten-year government bond yields in the fourth quarter of 2009.

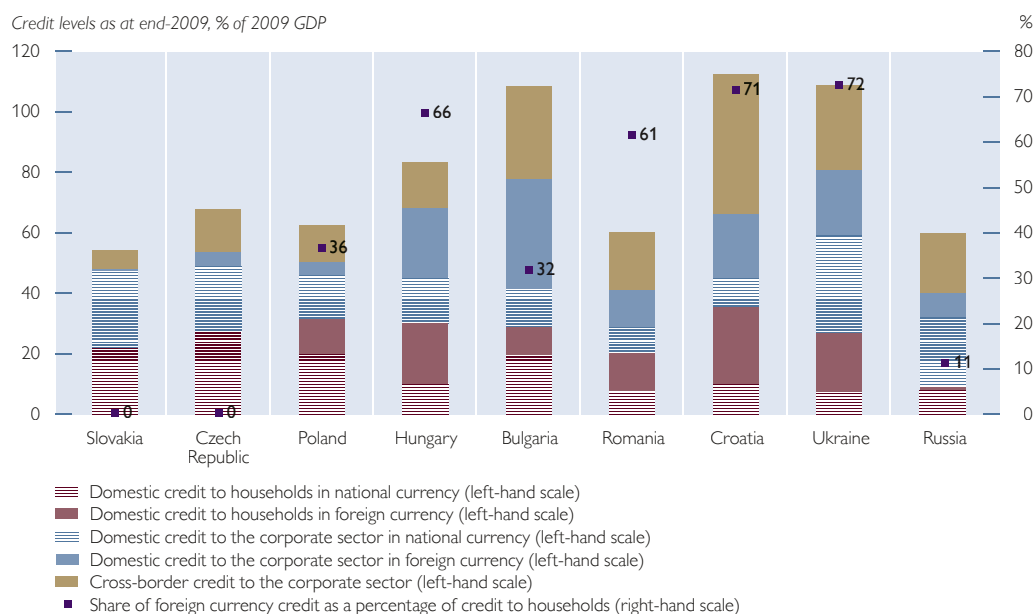
In the *credit markets* of almost all the countries under review, exchange rate-adjusted year-on-year growth in household and corporate lending was lower at end-2009 than at mid-2009. In Slovakia, Hungary, Romania, Ukraine and Russia, the volume of credit outstanding was even lower at end-2009 than a year earlier (negative exchange rate-adjusted year-on-year change). In Slovakia, the Czech Republic and Hungary, the volume of outstanding corporate loans was lower at end-2009 than at end-2008, while in Croatia, Ukraine and Russia, by contrast, household loans recorded lower volumes at end-2009. As for Romania, lending to both sectors was lower at end-2009 than a year earlier. Only Poland and Bulgaria did not suffer a decline in either sector. In January 2010, most CESEE countries (except for Bulgaria and Ukraine) registered modest monthly lending growth.

At 61% to 72%, the share of *foreign currency loans* as a percentage of loans to households remained very high in Hungary, Romania, Croatia and Ukraine at end-2009. In the current reporting period, it has continued to rise in Romania and Croatia as well as in Bulgaria (albeit to a still relatively low level of 32%). By contrast, the share of foreign currency loans as a percentage of loans to households was extremely small in the Czech Republic and in Slovakia, as well as in Russia. The ratio between (foreign and national currency-denominated) domestic household lending and domestic corporate lending (including cross-border credit) is relatively balanced in the Central European countries. In the Southeastern European countries, by contrast, the volume of corporate loans outstanding was roughly twice as high as that of outstanding household loans. In Russia, even as much as five times as many cor-

Chart 13

Outstanding Total (Domestic and Cross-Border) Household and Corporate Credit

Credit levels as at end-2009, % of 2009 GDP

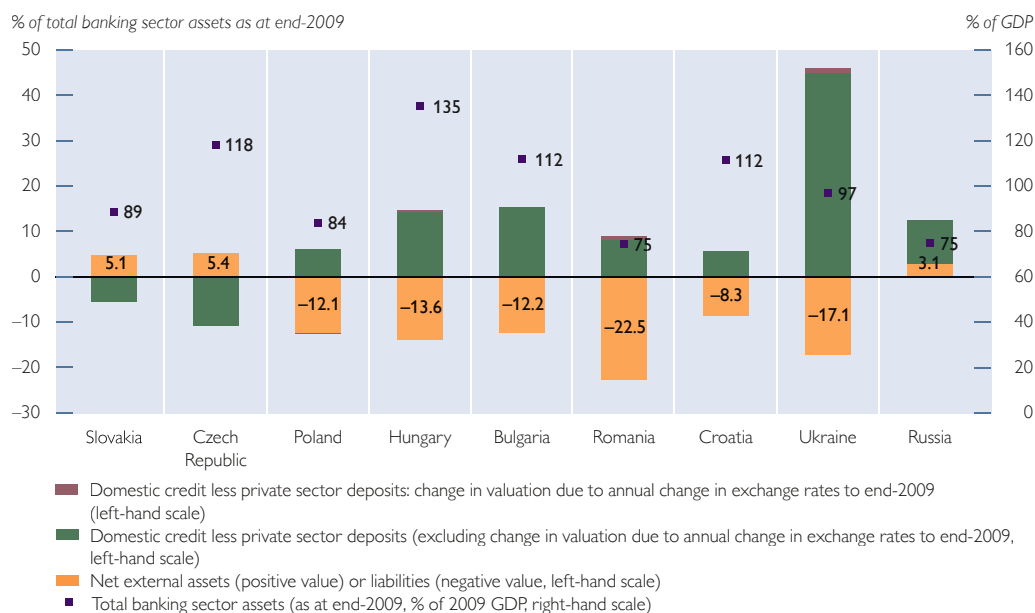


Source: ECB, Eurostat, national central banks, OeNB.

Note: Foreign currency credit also includes credit in national currency that is indexed to a foreign currency. Foreign credit does not include trade credits and intra-company loans. Points refer to the shares of foreign currency credit to households in total credit to households in % (right-hand scale).

Chart 14

Banking Sector: Gap between Loans and Deposits and Net External Liabilities



Source: ECB, Eurostat, national central banks, national statistical offices, OeNB.

porate loans than household loans were outstanding at end-2009.

At end-2009, the outstanding volume of *domestic loans* exceeded that of *domestic deposits* (in terms of total banking sector assets) by a particularly wide margin in Ukraine, followed by Bulgaria and Hungary and then Romania and Russia. The *banking sector's net external liabilities* in these countries (except for Russia) are used primarily to finance this domestic credit overhang. Banks have part of these net external liabilities vis-à-vis foreign parent banks. For these countries, mobilizing domestic deposits remains a task of utmost priority. In Slovakia and the Czech Republic, however, domestic deposits exceeded loans – and their respective banking sectors held net external assets.

The impact of the recession and persistently sluggish growth continued to heighten *credit risk* in the banking sector. For most of the countries under review, however, the quarter-on-quarter

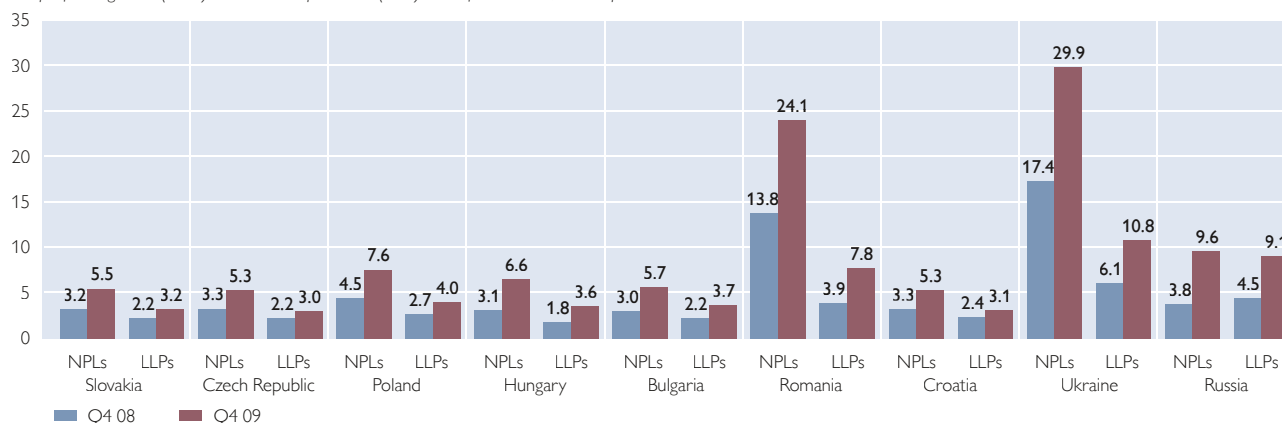
rise in the share of NPLs slowed in the fourth quarter of 2009 – with the exception of Croatia, which saw a quarterly increase over the same period. Despite the incipient stabilization, the share of nonperforming loans in every CESEE country was higher at end-2009 than a year earlier. In Romania, NPLs rose particularly sharply by some 10 percentage points. In Ukraine, NPLs also went up sharply in the first half of 2009 (more recent data are not available).

At the same time, in 2009 *banking sector profitability* was down year on year in all the countries of the region – except for the Czech Republic. While every CESEE country experienced a more or less sharp fall in profits, Ukraine suffered substantial losses. The steep increase in loan loss provisions as a result of the rise in NPLs is responsible for this situation. However, in almost the entire region *capital adequacy* was higher at end-2009 than a year earlier. This increase was particularly

Chart 15

Banking Sector: Credit Quality

Nonperforming loans (NPLs) and loan loss provisions (LLPs) in % of total credit, at end-period



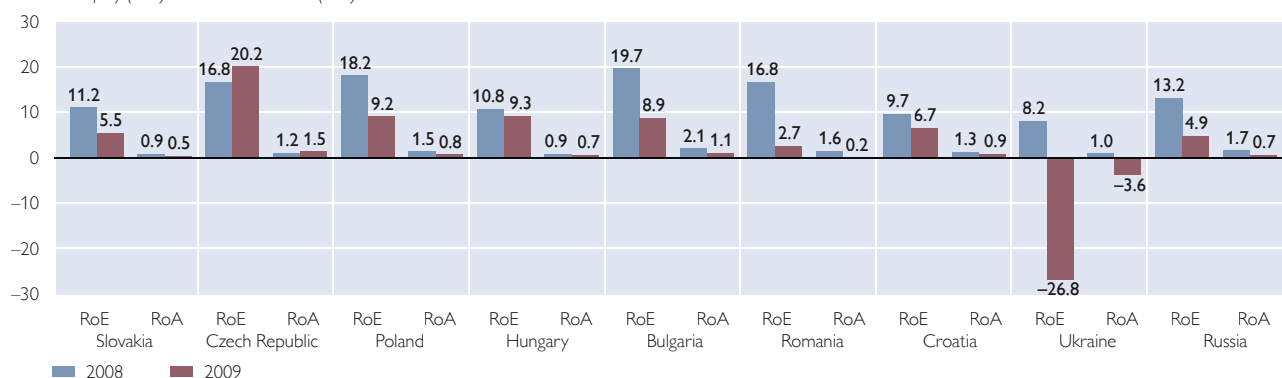
Source: IMF, national central banks, OeNB.

Note: Data are not comparable across countries. NPLs include substandard, doubtful and loss loans. Poland: including so-called irregular loans. Ukraine: as at Q2 09 instead of Q4 09.

Chart 16

Banking Sector: Profitability

Return on equity (RoE) and return on assets (RoA) in %



Source: IMF, national central banks, OeNB.

Note: Data are not comparable across countries. Data are based on annual after-tax profit, except for Russia's, which are based on pre-tax profit.

step in Russia, Ukraine and Bulgaria. This situation was attributable to two factors: first, recapitalization measures carried out by governments and parent banks and, second, sluggish and, in some cases, negative credit growth. At the end of 2009, therefore, the capital adequacy ratio ranged between around 13% (Slovakia, the Czech Republic, Poland and Hungary) and 20% (Russia and Ukraine).

Future financial market developments in CESEE remain exposed to a number of risks. First, recent developments concerning the fiscal situation in some developed economies are dampening international investors' willingness to take risks. Second, the economic recovery of the countries under review is closely tied to the sustained recovery of the euro area, which is their core sales market. As in most EU

countries, the fiscal situation is tense in many CESEE countries and will require (continuous) consolidation in the short to medium term. Country-specific risks related to political decision-making processes and upcoming elections represent further risk potential.

Real Economy Financing Remains Weighed Down by Crisis

Corporate Creditworthiness Indicators Worsen

Austria's Economy Stagnates in the First Quarter of 2010

The Austrian economy had recovered perceptibly in the third quarter of 2009 only to level off in the two following quarters. In the first three months of 2010, seasonally and working-day adjusted GDP growth stagnated quarter on quarter, and exports lost momentum again. In the first quarter of 2010, investment in equipment diminished further, given continued very low production capacity utilization. Construction investment contracted for the second year in a row.

Corporate profits shrank substantially in the wake of the crisis. Mirroring developments throughout the euro area, the gross operating surplus of nonfinancial corporations went down by 9% in 2009, sinking to the nominal level of 2006. This decline not only had a negative impact on the indicators for corporate stability and creditworthiness, but also acted as a drag on companies' internal financing potential.

External Financing Declines

The enterprise sector's external financing decreased even more strongly than its internal financing in 2009. According to financial accounts data, in 2009, companies' external financing volume slipped to one-third of the 2008 level (from EUR 25.2 billion to EUR 8.0 billion).¹ Both equity and debt instruments fell in roughly equal measure, so that the ratio of these instruments in raising capital barely changed: In both

2008 and 2009, the share of equity in total liabilities came to about 38%.

Sharp Slowdown in Lending Momentum

Bank lending accounted for the lion's share of the decline in external financing. Having represented 65% of external financing in the second half of 2008, bank loans extended by Austrian banks made a negative contribution to external financing in 2009. Bank lending growth weakened progressively throughout 2009, with the annual rate of change according to MFI balance sheet statistics (adjusted for reclassifications, changes in valuation and exchange rate effects) finally hitting negative territory at the end of 2009 and coming to -1.7% in March 2010.² Short-term credits were on the decline, whereas lending at longer maturities continued to expand, albeit at a far slower pace.

It is difficult to separate the supply-side factors involved in the decline in lending to enterprises from the demand-side factors. The results of the Eurosystem Bank Lending Survey for Austria indicated that banks had tightened lending standards from the onset of the crisis until mid-2009 and then kept standards constant until the first quarter of 2010. In absolute terms, lending standards thus are at historically very high levels, above all because banks' risk assessment had changed: Since the beginning of the crisis, risk assessment was the major factor governing banks' lending policy. However, at the height of the crisis, refinancing

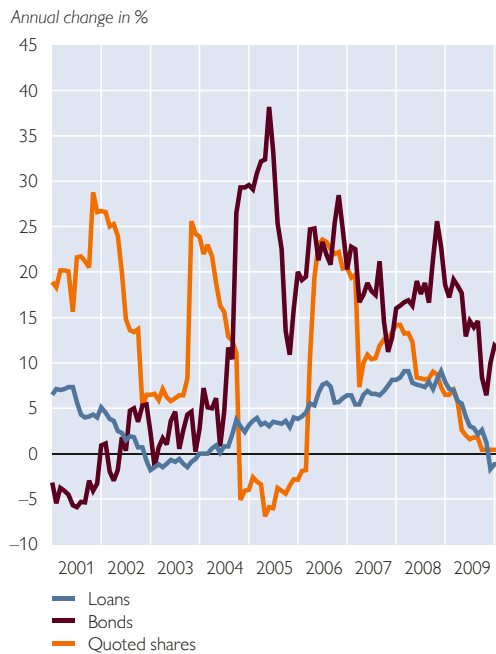
¹ Adjusted for foreign-controlled holdings of special purpose entities (SPEs).

² For the development of bank loans to the corporate sector, see the OeNB's *Kreditbericht* (available in German only at www.oenb.at).

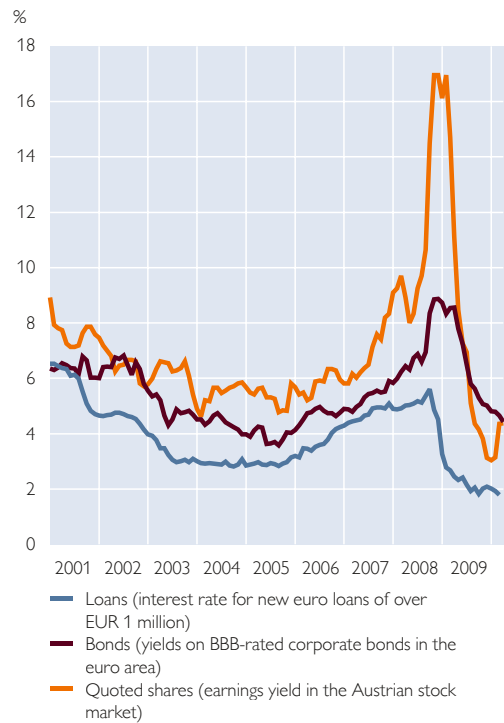
Chart 17

Volumes and Conditions for Key Elements of Corporate Financing

Financing Volumes



Financing Conditions



Source: OeNB, Thomson Reuters, Wiener Börse AG.

issues also played a role in banks' lending policy (see chart 18).

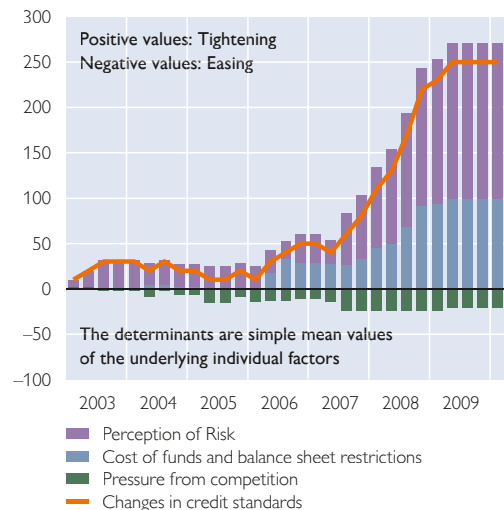
As the crisis wore on and corporate investment contracted, demand-side factors gained importance for the decline in lending. For roughly one-and-a-half years, Bank Lending Survey respondent banks have been reporting that enterprises' credit demand has been attenuating. Larger companies were hit harder than small and medium-sized enterprises both by the drop in demand and by the greater restrictiveness of banks' lending policy.

Overall, several companies were affected by tighter lending conditions, most of all those whose creditworthiness deteriorated in 2008 and 2009. Surveys of Austrian companies confirm this assessment. Since the beginning of 2009, the OeNB has regularly commissioned the Austrian Institute of Eco-

Chart 18

Determinants of Credit Standards for Loans to Enterprises

Cumulative change since Q1 03 (diffusion index and contributions to change)



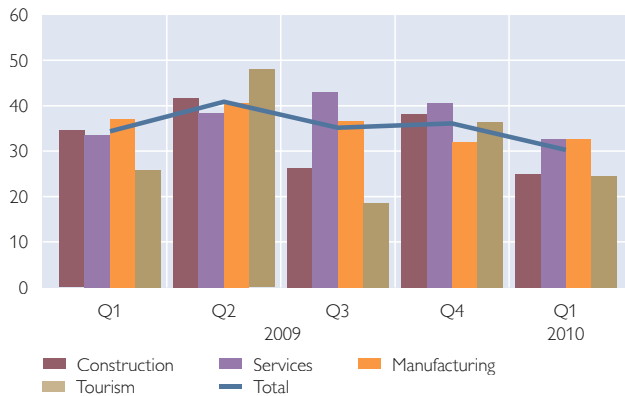
Source: OeNB (Bank Lending Survey).

Chart 19

Net Share of Companies Reporting Tighter Lending Conditions For New Loans

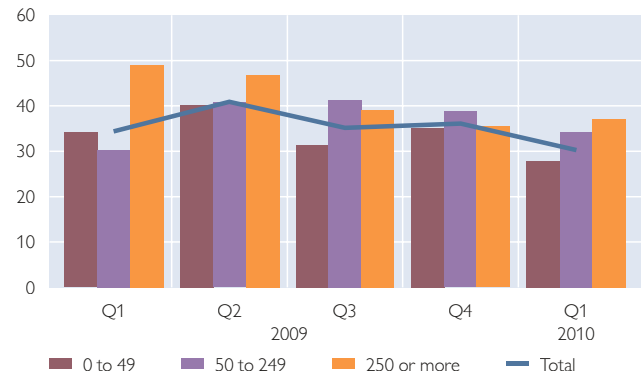
Industries

Shares in %



Number of Employees

Shares in %



Source: WIFO.

conomic Research (WIFO) to perform special surveys about lending terms and conditions. Accordingly, the share of companies faced with tighter credit conditions was higher in all surveys than the share of companies reporting an easing of credit terms, but the former share diminished from 42.9% at/ in mid-2009 to 33.4% in the first quarter of 2010. This slight relaxation of credit terms was noted in all industries and in companies of all sizes, and differences between sectors narrowed in the most recent survey rounds. However, unlike banks' assessment, companies state that credit standards have been tightened further.

The WIFO survey also came to the conclusion that large companies were hit harder by the crisis than small and medium-sized enterprises. Considering that large enterprises – which are commonly more export-oriented – were more severely affected by the international slump in economic activity, this means that the companies that were hit hardest by the crisis were also those

that registered the strongest deterioration of lending conditions.³

The development of financing costs reduced the burden on loan financing. Interest on lending was at historically low levels in the first months of 2010 after the ECB had massively reduced key interest rates. For the short interest rate fixation periods that are typical of corporate lending in Austria, the key interest rate cuts of the years 2008 and 2009 have meanwhile been fully passed on to borrowers. In February 2010, interest rates for new loans of up to EUR 1 million to nonfinancial corporations stood at 2.4%, those for loans of over EUR 1 million were 1.8%, i.e. in both cases more than 3½ percentage points lower than in October 2008.

Further Increase in Bond Financing

Unlike the slowdown in bank lending, the issuance of bonds by Austrian companies showed strong momentum in 2009 and during the first months of 2010. In 2009, the corporate sector covered more than two-thirds of all ex-

³ See Kwopil, C. 2009. *Actual Implications of the Current Economic Crisis for Austrian Enterprises – Results of a Company Survey*. In: *Monetary Policy & the Economy Q4/09*. OeNB. 98–110.

ternal financing needs by issuing bonds. In February 2010, the annual growth rate of corporate bonds was 17.7% according to securities issues statistics. However, for only a small share of Austrian companies, bond issues constituted an alternative for taking out loans, as for the most part, only large companies are able to issue bonds.

The pronounced decline of bond yields, propelled by the normalization of market conditions and the reduction of risk premiums after the crisis had peaked, contributed significantly to the dynamic development of bond issuing activity. Yields on BBB-rated bonds sank from a high of nearly 9% in the last months of 2008 to around 4.4% in April 2010.

Financial Crisis Brings Equity Financing to a Halt

The crisis had virtually dried up financing via the stock exchange and the recovery in stock issuance has been only tentative, even though since fall 2009, some companies have carried out capital increases. There have been no new listings by Austrian nonfinancial corporations since the onset of the crisis. Net new issues (including delistings) in the Austrian stock market ran to EUR 0.3 billion in 2009 and to EUR 55 million in the first three months of 2010. In any event, in the second half of 2009, quoted shares accounted for nearly 7% of the admittedly sharply lower external financing volume after having stood at nearly zero in the first six months of 2009.

Investors apparently consider purchases of Austrian stocks rather unprofitable at the current juncture, given the low earnings yield (inverse of the price-to-earnings ratio). The earnings yield plummeted from highs of roughly 17% in November and December 2008, at the height of the crisis, to

around 3% at the beginning of 2010 and then recovered slightly until April 2010. At times, however, the earnings yield slipped below the yield on ten-year Austrian government bonds.

In 2009, corporations raised approximately 38% of their external financing in the form of equity (including over-the-counter equities), noticeably less than in the preceding years (average for 2004 through 2008: 50%). The proportion of shares and other equity in enterprises' total liabilities remained unchanged at 47.5% in the second half of 2009.

Creditworthiness Indicators Deteriorate

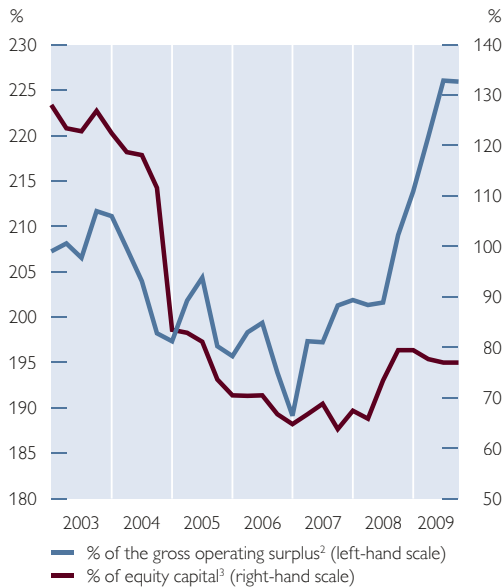
The indicators of companies' creditworthiness worsened in the wake of the crisis. In spite of the smallest increase in the absolute level of corporate debt in four years, the ratio of corporate debt to profits rose significantly in 2009 as a result of the drop in profits. Between the third quarter of 2008 and the third quarter of 2009, debt expanded from 202% to 226% of the gross operating surplus and then remained constant in the fourth quarter of 2009. In fact, by relation to equity, corporate debt even contracted marginally in 2009.

Insolvency statistics mirrored the economic downturn as well, but also indicated stabilization in the first quarter of 2010. Based on moving four-quarter averages to rule out seasonal fluctuations, the number of insolvencies grew far more slowly in the first quarter of 2010 than during 2009, and in terms of the total number of enterprises, the number of insolvencies even declined slightly. Insolvency liabilities also increased at a far slower rate in the first three months of 2010. In relation to the total liabilities of the corporate sector (according to national financial

Chart 20

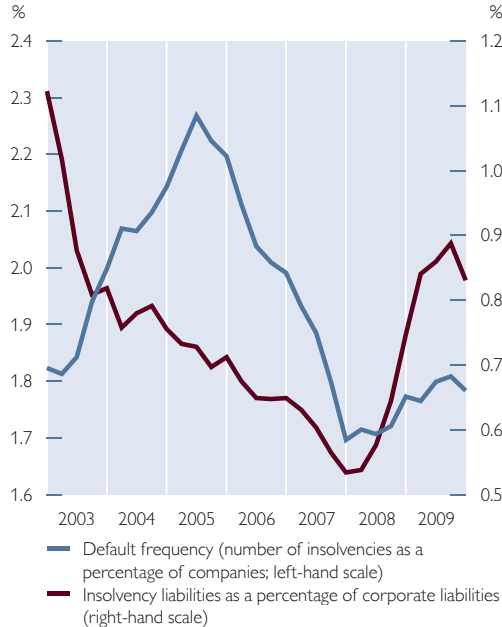
Indicators of Corporate Creditworthiness

Corporate Sector Debt¹



Development of Corporate Insolvencies

Moving four-quarter averages, year on year



Source: OeNB, ECB, Kreditschutzverband von 1870.

¹ Short-term and long-term loans, money market and capital market instruments.

² Including mixed income of the self-employed.

³ Quoted shares and other equity.

accounts), insolvency liabilities measured as the average of the previous four quarters fell from 0.84% in the fourth quarter of 2009 to 0.78% in the first quarter of 2010 after having jumped from 0.49% in the second quarter of 2008.

Conclusion: Only Slight Easing So Far on the Financing Side

The ongoing crisis is still impairing the financing of Austrian companies, although the situation has eased slightly since fall 2009. After the key interest rate cuts in 2008 and 2009, interest rates on loans are historically low. Banks' credit standards are noticeably higher than before the crisis, but this reflects primarily a cyclically linked deteriorated risk assessment of companies by banks. Banks have not tightened their lending policies further since mid-

2009. However, they have to a greater extent been factoring borrowers' risk-bearing capacity and economic prospects into their lending decisions. With creditworthiness indicators having worsened, many companies have found it harder to gain access to funds. The number of companies faced with tighter lending appears to have fallen since autumn 2009, however. There is no evidence that banks have limited their lending more than they usually do during an economic downturn. The risk that a possible economic recovery could be hampered by banks not providing enough funds by way of lending to meet corporate sector financing needs is not to be considered large at this point.

Households Show Low Propensity to Borrow

Disposable Income Diminishes

The household sector's real disposable income sank by 1.1% in 2009 year on year against 2008 (see chart 21), declining for the first time since 1997. Two important influences on this reduction were rising unemployment and decreasing property income. The unemployment rate (Eurostat definition) climbed from 3.8% in 2008 to 4.8% in 2009. Property income was sharply affected in 2009, above all because profit distribution declined markedly and earnings withdrawals fell to zero in most cases. In addition, the cut in interest rates in 2009 reduced investment incomes as a result of lower interest incomes. In light of these difficult conditions and weak credit demand (see the next section of this report), households trimmed their saving ratio from 12% in 2008 to 11% in 2009 so as to maintain their level of consumer spending.

Sluggish Credit Demand

Household borrowing growth has been edging up since November 2009 but still remains far below the level recorded prior to September 2008, when the U.S. investment bank Lehman Brothers collapsed. Whereas the MFIs' lending claims on households had still been augmenting by 3.8% year on year in August 2008, this rate had fallen to only 1.1% in March 2010 (see chart 22, left panel). Consumer loans again made a negative contribution to growth, shrinking by 2.6%, whereas housing and other loans continued to make a small positive contribution. However, the fluctuations were not as pronounced in Austria as in the euro area, where credit growth came to a complete standstill between April and October 2009 following years of high growth. Euro area credit growth revived after that, coming to 2.2% in March 2010 year on year (see chart 22, right panel).

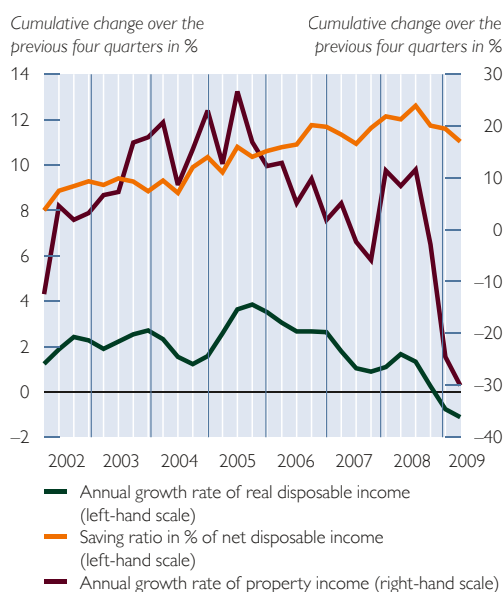
According to the Bank Lending Survey, in the first quarter of 2010, banks' lending standards and household demand for credits remained basically unchanged. Weak credit growth in Austria among other things mirrors households' uncertainty about their income outlook.

Debt Burden Remains Stable

Even though disposable income displayed weakness, households' debt burden remained stable, among other things on account of their low new borrowing and low interest rates. In the fourth quarter of 2009, household debt ran to 88% of net disposable income, thus remaining 2 percentage points below the level recorded prior to the onset of the financial crisis in the second quarter of 2007 (see chart 23, left panel). Interest expenses dropped from 4% of disposable income in the fourth

Chart 21

Household Incomes and Savings



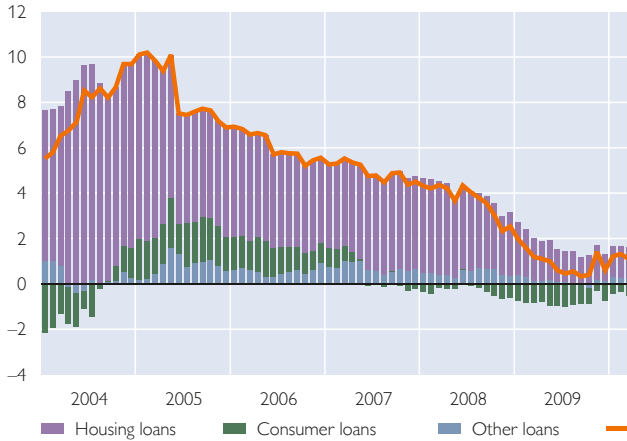
Source: Statistics Austria.

Chart 22

Growth Contributions of MFI Loans to Households

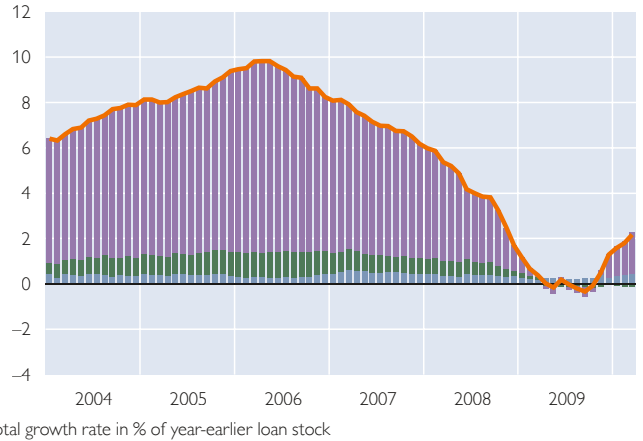
Austria

Percentage points



Euro Area

Percentage points



Source: OeNB.

Note: Change in MFI claims on households adjusted for reclassifications, value adjustments and exchange rate effects.

quarter of 2008 to 2.4% in the first quarter of 2010 on the back of low interest rates.

However, as the right panel of chart 23 shows, the share of variable rate interest in new lending is rising steadily; it accounted for 81% of disposable income in the first quarter of 2010. This

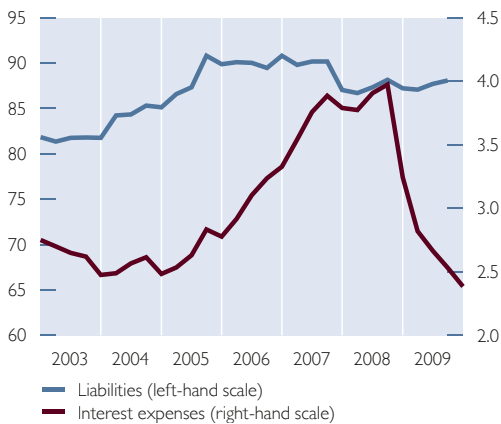
share of variable rate loans is very high in Austria compared to the euro area. While holding such loans helped households slash their interest expenses faster in 2009, because the ECB's interest rate cuts were translated faster into reductions in interest rates on variable rate loans, interest rates on such loans

Chart 23

Debt Indicators

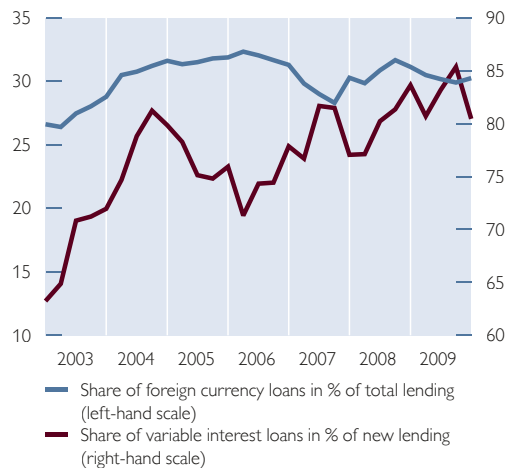
Debt and Interest Expenses

% of net disposable income



Foreign Currency and Variable Interest Loans

%



Source: OeNB.

are likely to rise just as quickly if key interest rates are raised again.

The continued high share of foreign currency lending and the related exchange rate risk and risk associated with repayment vehicles constitutes a risk to households' debt-servicing capacity. While the share of foreign currency lending has diminished somewhat, it is still very high compared to the euro area average. In the first quarter of 2010, foreign currency loans

constituted 30% of the household sector's borrowing.

To fully assess risk, it is necessary to identify financially vulnerable households. Box 1 describes overindebtedness of households on the basis of microdata. The analysis shows that overindebtedness is frequent among low-income household categories, which is evidence that the aggregate data may well underestimate risks.

Box 1

Typical Features of Overindebted Households

Household risk indicators gleaned from macroeconomic data – indicators such as the debt ratio, the interest payments as a percentage of net disposable income, and the share of foreign currency loans – had been high for a long time, but in recent months, these indicators have all remained stable or have declined marginally for various reasons. However, such aggregate indicators reflect the household sector's risks to the financial market only to a limited degree, because they do not provide any information about the distribution of debt among households and about households' debt-servicing capacity. As a case in point, the current economic crisis originated with U.S. households that were severely overindebted and that could no longer service their debt. Therefore, it is important to combine information about aggregate developments with disaggregated data about household overindebtedness.

In 2008, the specific module of the EU Statistics on Income and Living Conditions (EU-SILC) survey explored overindebtedness. Several evaluations of the pertinent data set on overindebted households in Austria are presented below. The analysis here is limited to housing loans for households' principal residence, which accounts for the bulk of household debt. Three different definitions of overindebtedness are used to identify overindebted households:¹ (1) relative overindebtedness – the condition in which households are in arrears on housing loan repayments; (2) subjective overindebtedness – the condition in which debtor households had experienced "serious financial difficulties in the past five years"; and (3) absolute overindebtedness – the condition in which housing debt is higher than households' entire housing wealth and in which households state that they had to limit spending to be able to pay for housing costs. The OeNB's Household Survey on Housing Wealth 2008 (HSHW) provides the last of these definitions, as EU-SILC contains no data on household indebtedness or household wealth.²

The first column of the table below shows how many households have incurred debt solely because they have purchased or maintained their primary residence. These are the only households at risk of overindebtedness. The second and third columns indicate the shares of households that are overindebted according to the first and second definitions of overindebtedness, broken down by various socioeconomic features, such as household income, age of the main earner, education level, household type (family status) and activity status. All evaluations point toward a tendency of the aggregate indicators to underestimate the risks to the financial market. The reason: Vulnerable household categories are overindebted to an above-average degree. Incomes show this fact most clearly: Whereas 11.6% of households in the lowest

¹ Based on Angel, S., M. Einböck, K. Heitzmann and U. Till-Tentschert. 2009. Verschuldung, Überschuldung und finanzielle Ausgrenzung österreichischer Privathaushalte. In: Statistische Nachrichten 12/2009. 1104–1116.

² A comparison of the evaluation using the third definition with those using the first and second definitions is possible only to a limited extent, as the former and the latter are based on different data sets and as the data of the Household Survey on Housing Wealth 2008 refers not to the main earner but to the housing owner or tenant.

Overindebted Households

	% of households with housing loans outstanding (EU-SILC)	% of debtors in arrears in the past 12 months (EU-SILC)	% of debtors with serious financial difficulties in the past 5 years (EU-SILC)	% of debtors with debt exceeding housing assets and a small financial margin (HSHW)	Median of the debt-to-asset ratio (%) (HSHW)
	Schare, %				Median, %
All households	27,3	4,0	10,1	9,5	29,3
Quintile of net income					
1	10,4	11,6	15,7	15,0	27,5
2	18,1	5,8	15,2	12,2	23,1
3	26,5	3,6	12,4	20,8	33,3
4	36,7	3,6	8,2	5,4	27,6
5	45,0	2,2	6,9	2,2	29,2
Age (main earner)					
Up to 19 years of age	24,0	0,0	42,7	0,0	73,6
20 to 39 years of age	32,3	3,8	11,5	13,0	41,3
40 to 64 years of age	34,2	4,1	9,0	6,9	20,8
65 years of age and older	8,8	5,2	9,5	11,0	19,2
Highest education level (main earner)					
Compulsory schooling	23,9	5,2	13,0	15,6	28,6
Intermediate or higher technical/vocational school	29,1	1,9	6,9	11,3	27,6
High school graduation	33,8	4,0	8,1	1,3	28,8
University degree	31,9	0,0	3,1	7,9	33,3
Family status (main earner)					
Unmarried	23,9	4,6	12,3	7,0	27,3
Married	35,1	3,3	7,5	9,7	29,3
Separated or divorced	25,2	6,6	17,0	12,1	35,7
Widowed	8,4	1,9	11,7	11,3	10,4
Activity status (main earner)					
Employed	38,2	3,0	8,9	9,8	31,1
Self-employed	35,2	6,2	14,1	1,9	39,7
Unemployed	11,3	27,8	49,8	34,5	16,8
Nonemployed	12,4	4,9	8,9	10,3	18,4

Source: EU-SILC 2008, OeNB Household Survey on Housing Wealth 2008 (HSHW).

income group (the bottom 20% of households in terms of incomes, i.e. the poorest households in Austria) were in arrears on their loan payments at least once in the past 12 months, this figure shrank to 2.2% of debtors in the highest income group (the top 20% of households in terms of incomes, i.e. the richest debtors). It must be noted, however, that the households in the lower income groups have taken on debt more rarely than those in the top income groups. Furthermore, unemployment plays an important role in overindebtedness: 27.8% of households with unemployed main earners are in arrears; this applies to only 3% of households with employed principal earners. Broken down by household type, the most frequently overindebted group of households is that with separated or divorced main earners (6.6%). These households are headed primarily by single parents. Finally, broken down by education level, an especially large proportion of overindebted households (5.2% each) belongs to the lowest education category – and to the top age group. The pattern of overindebtedness is very similar using the second definition (households' subjective impression of being overindebted).

Data derived from the HSHW on absolute overindebtedness (third definition) and debt-to-wealth ratios are presented in the fourth and fifth columns. Notably, in addition to the

above-described patterns of overindebtedness, these figures reveal that young households (20 to 49 years of age) and middle-income households (third quintile) are more frequently “absolutely overindebted.” It may well be that these households have only serviced a small proportion of their debt relative to their wealth and that they therefore have to limit spending (third definition), but that they still have enough income to service their debt (fully), as they are rarely in arrears or financial difficulty (according to the first and second definitions). In terms of the debt-to-wealth ratios, households with separated or divorced main earners, in particular single-parent households, are most seriously affected: The median household in this category has debt amounting to 35.7% of its wealth. The debt-to-asset ratio is low for unemployed households (16.8%), a sign that although these households display above-average incidences of overindebtedness, debt in most of these households is below average size in proportion to their wealth.

Households Have Begun to Accumulate Wealth Again

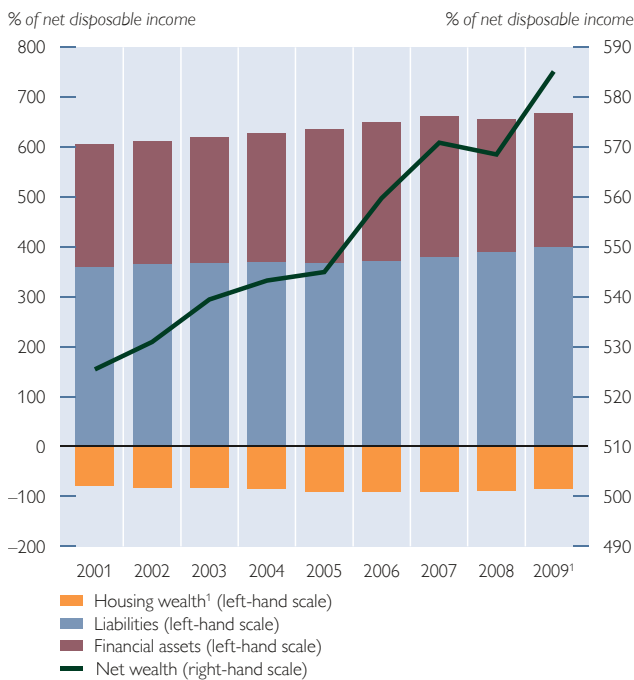
Unfortunately, no data about household total wealth are available for Austria. The financial accounts statistics contain details about financial assets and liabilities but not about housing wealth or

nonfinancial assets. To provide an indicator of the development of total household wealth, analysts estimated property assets on the basis of the capital stock for residential housing in the national accounts and of additional information gleaned from the OeNB’s

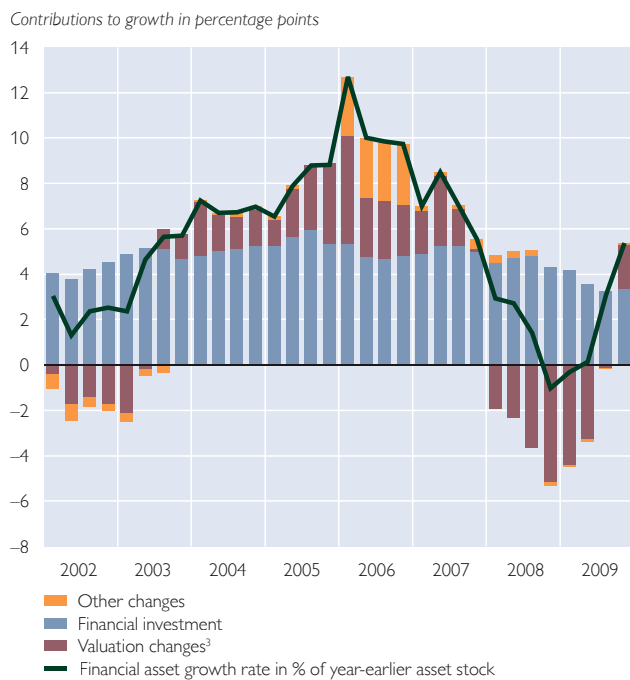
Chart 24

Development of Household Wealth

Household Net Wealth



Changes in Financial Assets



Source: OeNB, Statistics Austria.

¹ Housing wealth consists of residential housing wealth plus estates in land. Residential housing was estimated on the basis of the capital stock for residential housing according to national accounts data. Land assets were added pro rata on the basis of the OeNB’s Household Survey on Housing Wealth 2008.

² 2009 estimated on the basis of the information available.

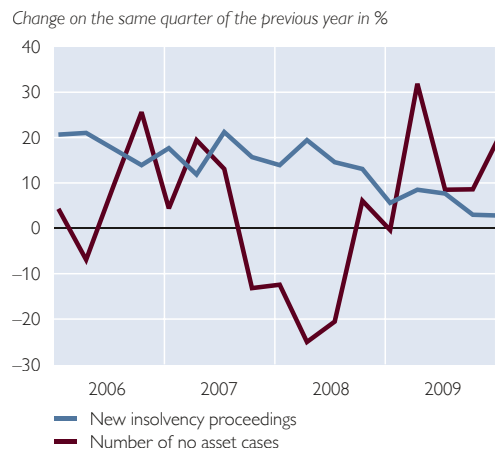
³ Securities calculated on the basis of securities data, other aggregates calculated as the difference between stock changes and transactions.

HSHW 2008.⁴ In combination with the national accounts data, these data allowed for an estimate of net household wealth (excluding nonfinancial assets). The development of household wealth shows that in 2008 household assets deteriorated for the first time since 2001⁵ (see chart 24, left panel). High unrealized valuation losses were the reason for the deterioration (see chart 24, right panel). The losses offset valuation gains of the four preceding years. Household net wealth declined by only 3 percentage points of disposable income, however, in 2008. This was far less than in the euro area as a whole, where the loss represented about 50 percentage points.⁶ The reason for this discrepancy is that the Austrian household sector – unlike the household sectors of some euro area countries, notably Spain or Ireland – continued to amass housing wealth. Preliminary estimates of housing wealth in 2009 suggest a renewed rise in household net wealth driven mainly by the revival of valuation gains in the fourth quarter of 2009. Increases in stock holdings by 56.7% and of mutual fund shares by 10.9%, both against the same quarter of 2008, were primarily responsible for this rise.

Number of No Asset Cases Rises

Households' income-related risks increased further on account of the rise in the number of unemployed persons. The insolvency statistics confirm this at least in part. Whereas the number of new insolvency proceedings grew somewhat more slowly year on year in

Chart 25
Development of Personal Insolvencies



the first quarter of 2010 (+2.8%) than in the preceding quarters (+3.0% in the fourth quarter of 2009), the increase in the number of no asset cases skyrocketed to 20.8% in the first quarter of 2010 from 8.6% in the fourth quarter of 2009. The jump in no asset cases means that a growing number of private debtors do not even have enough assets to settle their insolvencies in court. This may be caused by rising unemployment, as debt settlement on the basis of a payment plan is out of the question without a sufficient income level. Chart 25 shows the development of personal insolvency cases.

Conclusion: Debt Burden Declines despite Higher Income Risks

The low levels of both new household debt and interest rates have eased the debt burden on the household sector in

⁴ Residential housing wealth was estimated on the basis of the capital stock for residential housing according to national accounts data; land assets were added pro rata based on information on the structure of real property wealth in the OeNB's Household Survey on Housing Wealth 2008. Residential housing wealth plus estates in land represent property wealth, referred to as housing wealth in the survey. For more details on Austrian housing wealth, see Fessler, P., P. Mooslechner, M. Schürz and K. Wagner 2009. *Housing Wealth of Austrian Households*. In: *Monetary Policy & the Economy Q2/09*. 104–122.

⁵ No data are available for the period preceding 2001.

⁶ Source: *Financial Stability Review of the ECB of December 2009*.

recent months. Yet income risks have risen further: The worsening of conditions on the labor market has reduced household disposable income. Reduced incomes in turn raise the risk of house-

holds defaulting on bank loans. Moreover, this risk is exacerbated by the fact that vulnerable, low-income households are more likely to be overindebted than other households.

Austria's Financial System Benefits from Improvement in Eastern Europe, but Economic Environment Remains Challenging

Rising Risk Costs Weigh On Austrian Banks' Domestic and International Profits

Market Conditions Ease, New Business Is Sluggish, Banks Deleverage in Response to Crisis

In the second half of 2009, Austrian banks' business developments were marked by the easing of tensions in the market, hesitant new business and further deleveraging in the wake of the crisis.

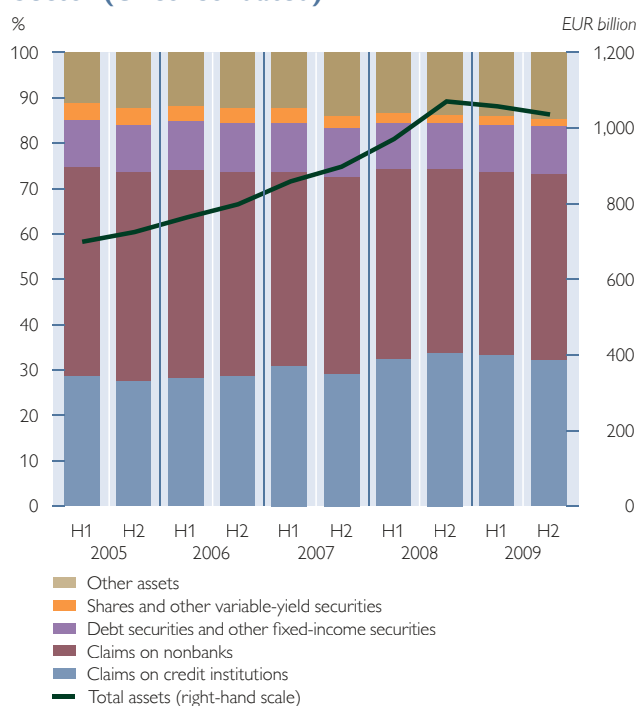
While Austrian banks' consolidated assets diminished by 1.7% to approximately EUR 1,140 billion in the second half of 2009, unconsolidated assets developed along similar lines, contracting marginally as well. The 2.3% decline

can be attributed fully to a substantial reduction in Austrian banks' international business (including claims on subsidiaries abroad in the unconsolidated breakdown). All in all, Austrian banks international claims plummeted by 7.5% in the second half of 2009; while domestic assets edged up by 0.4% in the same period.

On the liability side, interbank liabilities had fallen in the first half of 2009; in the second half, longer-term refinancing also declined somewhat. For example, not just Austrian banks' gross issues but also their volume of fixed-income securities outstanding sank by roughly 5% from the high measured in February 2009. In addition,

Chart 26

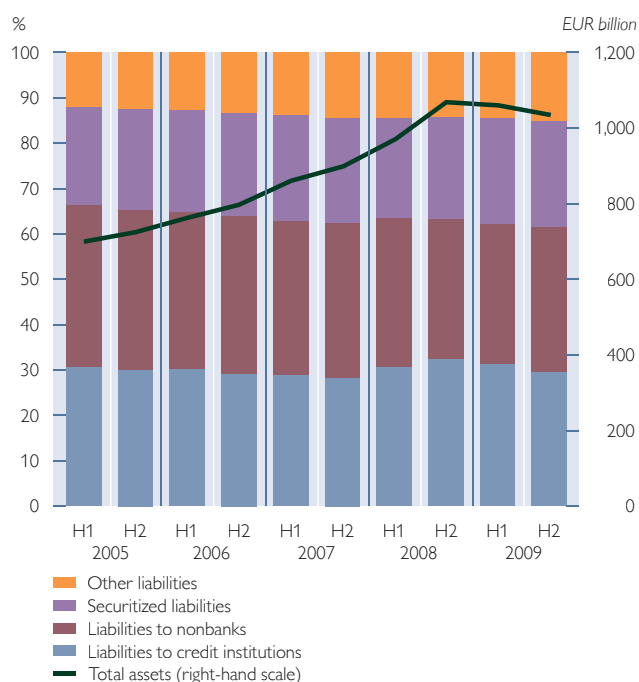
Balance Sheet Structure of the Austrian Banking Sector (Unconsolidated)



Source: OeNB.

Chart 27

Change in Liabilities 2005 to 2009



Source: OeNB.

financing through deposits measured as the ratio of nonbank loans to nonbank deposits improved by 2.1 percentage points to 128.4% on an unconsolidated basis. Moreover, in the upcoming five years, some 60% of large Austrian banks' bonds will mature, with a pronounced peak in 2011.¹ The slight downward trend of unconsolidated total assets continued in the first quarter of 2010 as well, notably featuring a contraction of customer deposits year on year (−0.9%) for the first time.

While the banking sector as a whole suffered a drop in business, local banks² succeeded in expanding total assets by roughly 0.4% in the second half of 2009. Coming to around EUR 201 billion, their total assets have grown to account for 19.5% of the Austrian banking sector's total unconsolidated assets. This development was driven above all by a 1.4% rise in claims on customers. Smaller local banks traditionally have a stronger orientation toward claims on private customers rather than other banks in structuring the asset side of their balance sheets.

End-2009 Result Marred by Higher Credit Risk Provisions

One-off effects in income from equity investment in 2008 reduced unconsolidated operating profits before risk provisioning³ by −26% to EUR 6.77 billion as per end-2009 even though interest income continued to expand year on year. The 3% drop in operating expenditure was insufficient to offset the 13.2% decline in operating income.

Consequently, the cost-to-income ratio worsened from 55.5% at end-2008 to 62.1% at the end of 2009.

Interest income as per December 2009 was boosted by 6.4% to just under EUR 8.8 billion year on year, benefiting among other things from the steep yield curve. The net interest margin recovered from 0.77% to 0.85% year on year at end-2009, but remained small by historical standards. However, rising refinancing costs could rekindle pressure on the interest margin. At the same time, fee-based income plunged by 14.6% to EUR 3.6 billion. With the markets recovering, the trading income, which had been negative in 2008, made a positive contribution of EUR 0.5 billion in 2009. But with Austrian banks' subsidiaries in Eastern Europe displaying shrinking profits income from equity shares was slashed by 53.8% to EUR 3.3 billion.⁴

With credit risk costs persistently high at EUR 8.5 billion in the fourth quarter of 2009, representing a 21.6% rise against end-2008 levels, operating profits after risk provisioning were negative at −EUR 1.8 billion. High extraordinary income brought operating profits back up to zero, though.

Operating profits of local banks contracted by 15.1% year on year in 2009, from EUR 2.14 billion to EUR 1.8 billion. Operating income went down by 7% year on year to EUR 5.4 billion, a decline that the 2.2% drop in operating expenses to EUR 3.5 billion was not large enough to offset. The

¹ Source: Bloomberg.

² The local smaller banks include certain joint stock banks; the savings banks without Erste Group Bank and Erste Bank; the Raiffeisen credit cooperatives without RZB, the regional Raiffeisen cooperatives; and the Volksbank credit cooperatives without VBAG.

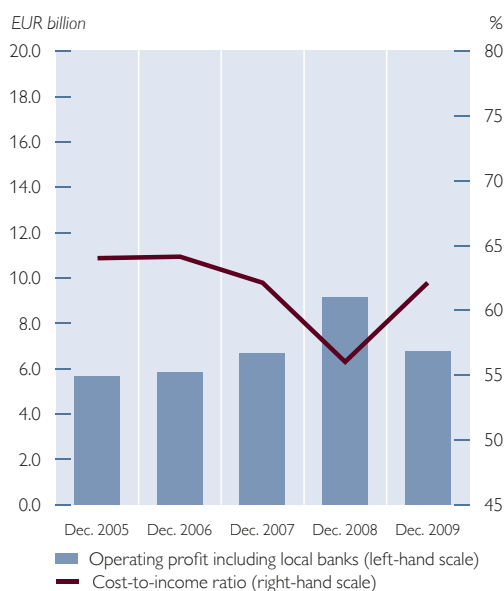
³ Not adjusted for one-off and special effects at individual banks.

⁴ However, sales of equity interests had accounted for the very high volume of income from securities and equity shares by historical standards at end-2008.

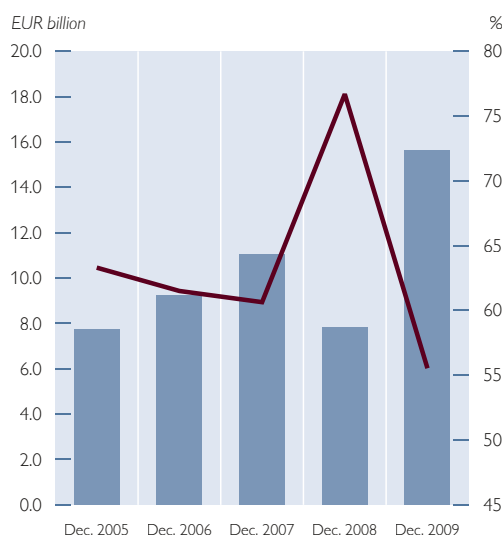
Chart 28

Austrian Banks' Unconsolidated and Consolidated Operating Profit

Unconsolidated Data



Consolidated Data



Source: OeNB.

Note: The bars reflect the operating profit at the end of each quarter (cumulated). Due to changes in the financial reporting regime at the beginning of 2008, the consolidated cost-to-income ratio for 2008 and beyond is not comparable with pre-2008 data.

cost-to-income ratio worsened somewhat from 62.8% to 66.1%. Much as in the case of the banking sector as a whole, local banks boosted risk provisions by 14.8% to EUR 1.5 billion, so that the operating result after risk provisioning decreased to EUR 0.3 billion from EUR 0.9 billion at end-2008. Their annual surplus dropped steeply, falling by 81% to EUR 0.1 billion.

CESEE Business Makes a Positive Contribution to Profits

The consolidated operating profits of the Austrian banking sector before adjustment for risk provisions⁵ shot up by 98.9% to EUR 15.6 billion year on year, driven by higher interest and trading income as well as a positive

valuation result following revaluations in line with IFRS principles, but also by sharp cost-cutting. While consolidated operating income increased by 12.5% year on year, operating expenses were cut by 13.8%. The consolidated cost-to-income ratio before adjustment for risk costs came to 58.7% at the end of December 2009, which compares to 76.7% a year earlier. The considerable 97.7% rise in credit risk provisioning – this step required the use of 70.5% of the total operating profit – resulted in a period profit of EUR 1.5 billion that was positively influenced by banks' CESEE business.

In the first quarter of 2010, the unconsolidated operating result before risk provisioning declined by 2.1% com-

⁵ Unconsolidated profits also include the Austrian banking sector's CESEE business. As banks use different accounting standards, aggregation may produce fuzzy results.

pared to the first quarter of 2009 in the wake of further growth in operating expenses and a dip in operating income. Risk costs continued to rise, albeit at a noticeably slower pace. Although Austrian banks expect a comfortably positive annual result for 2010, this forecast is subject to heightened uncertainty in light of the increase in external risks. The biggest risks to profitability – in addition to the issue of whether the trading result can be maintained and whether the yield curve, which had given interest income a lift, will remain steep – include higher market refinancing costs and a persistently high need to make provisions for risks.

Loan Growth Decelerates in the Face of Continued Difficult Conditions⁶

Following a further contraction in the growth of lending to domestic nonbanks⁷ in the second half of 2009, the annual growth rate was even marginally negative at –0.4% in the first quarter of 2010. Austrian banks' outstanding credit to domestic customers (nonbanks) came to about EUR 310.5 billion at quarter-end. But while the volume of lending to households rose slowly but surely in recent periods, lending to nonfinancial corporations dipped year on year as of end-March 2010, with loans to households coming to EUR 123.2 billion

and loans to nonfinancial corporations standing at EUR 132.9 billion.

By comparison to euro lending, banks were conspicuously careful in providing foreign currency loans. EUR 55.2 billion of the loan total were denominated in a foreign currency at the end of the first quarter of 2010, which corresponds to a cutback by roughly 4.3% year on year and a foreign currency share of around 17.8% in total loans. Most of the foreign currency lending was in Swiss francs (roughly 86.1%), followed by U.S. dollars (nearly 6.9%) and Japanese yen (about 5.5%).

Joint stock banks as well as building and loan associations generally exhibited the strongest credit growth according to the most recent figures. The results for the networks of cooperative banks present a mixed picture: Whereas the Raiffeisen credit cooperatives exhibited fair credit growth, the volume of lending by the Volksbanken credit cooperatives went down.

The financing conditions of banks improved somewhat most recently. The banks also partly passed on the easing of funding conditions to the interest rates they charge. Households profited above all from a recent drop of the annual percentage rate of charge on new housing loans. In the case of lending to the corporate sector, the rates charged declined most on short-term loans.

⁶ *The analysis of loan growth is based on unconsolidated MFI balance sheet statistics data adjusted for exchange rate effects, value adjustments and reclassifications.*

⁷ *"Domestic nonbanks" are defined as all financial market participants other than credit institutions.*

Prudential Initiatives to Curb Foreign Currency Loans and Repayment Vehicle-Linked Loans to Austrian Households

The OeNB and the FMA have taken numerous prudential measures aimed at curbing foreign currency loans and repayment vehicle-linked loans to households in Austria, the most recent of them being the extension of the FMA's respective minimum standards.

Just as the IMF has repeatedly highlighted the risks arising from foreign currency loans and repayment vehicle-linked loans in Austria in its Financial Sector Assessment Programs and Article IV consultations over the past decade, the OeNB and the FMA for years have been working to improve borrowers' and lenders' risk awareness by pursuing a wide range of measures and activities: Press conferences and the publication of the OeNB's Financial Stability Report ensure the provision of information on a regular basis; in 2003, the FMA published its Minimum Standards for Granting and Managing Foreign Currency Loans as well as Loans with Repayment Vehicles; and the OeNB and the FMA also jointly created a consumer information brochure about the risks of foreign currency loans that was first distributed at banks in 2006. Up until autumn 2008, the effects of these measures were limited, however. While there was some success in reducing the share of Japanese yen-denominated loans and the share of foreign currency loans in corporate funding, in October 2008, the overall volume of foreign currency loans to households peaked at EUR 39.1 billion as did its share in total loans to households at 31.7%.

In October 2008, the FMA issued a recommendation calling on banks to stop granting foreign currency loans to households. The OeNB and the FMA then drew up supplementary provisions to the FMA's minimum standards mentioned above, which were published in March 2010. According to these new provisions, foreign currency loans may be extended only to households¹ which earn sufficient income in the currency in which the loan is denominated or which belong to the group of customers with the highest creditworthiness. In addition, banks are called upon to pay particular attention to the risk that repayment vehicles carry in the case of euro-denominated loans linked to such (capital accumulating) instruments, and they are required to maintain a list of eligible repayment vehicle products. Furthermore, banks are requested to develop strategies for a sustained reduction in the volume of foreign currency loans and repayment vehicle-linked loans and for mitigating the refinancing risk of foreign currency loans. Finally, banks have committed themselves to fulfilling the enhanced consumer information requirements set out in the new EU Directive on credit agreements for consumers. Consumers wishing to reduce their risk from (existing) foreign currency and repayment vehicle-linked loans by converting these loans into euro-denominated loans must receive active support from their bank.

Apparently, these additional measures have proved effective: Between October 2008 and March 2010, foreign currency loans to households contracted by EUR 3.1 billion or 8% (exchange-rate adjusted), and the volume of repayment vehicle-linked loans was also reported to have diminished markedly. It can be ruled out that this decline was driven by the weak economy, since euro-denominated loans to households rose by EUR 3.6 billion over the same period.

¹ The target group of these provisions includes consumers as defined by the Austrian Consumer Protection Act; they apply to self-employed persons and members of the liberal professions only if they take out a consumer loan.

Increased Credit Risk Boosts Costs

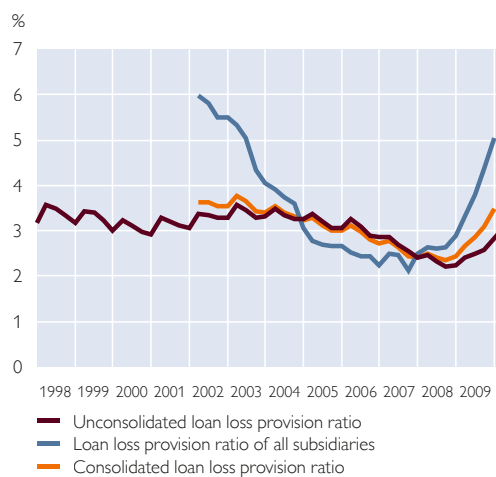
In 2009, Austrian banks undertook substantial efforts to create provisions to cover their credit risk, which had increased significantly in the wake of the global recession. In a consolidated

view, banks' credit risk costs totaled EUR 11 billion in 2009, about twice as much as one year earlier. The adjustments in credit risk provisioning were visibly influenced by regional factors. The unconsolidated loan loss provision

ratio⁸ climbed by 0.57 percentage points to 2.82% in 2009 (see violet line in chart 29). Taking into account domestic customers only reduces the increase to 0.31 percentage points. By contrast, the consolidated loan loss provision ratio,⁹ covering total credit to domestic and nondomestic customers, rose by 1.04 percentage points in 2009 (orange line in chart 29). The loan loss provision ratio of fully consolidated bank subsidiaries increased by 2.15 percentage points to 5.04% (blue line); within this aggregate, the sharpest rise by far (+6.18 percentage points) was recorded for the CIS, where the subsidiaries' loan loss provision ratio now stands at 10.38%.

Chart 29

Loan Loss Provision Ratios of Austrian Credit Institutions



Source: OeNB.

The unconsolidated figures for the first quarter of 2010 show that the uptrend seen in 2009 is set to continue; at end-March, the loan loss provision ratio came to 3.06%, which corresponds exactly to the average of the past 12 years.

Market risk¹⁰ as measured by capital requirements continued to play a subordinate role (both in the unconsolidated and the consolidated view) compared with credit risk in the Austrian banking system in 2009.¹¹ During 2009, the capital requirement for interest rate instruments in the trading book edged up somewhat, while it remained broadly constant for shares in the trading book and open foreign currency positions. Since market-based valuation regulations must be applied to trading book positions, the severe fluctuations in market risk factors seen since the onset of the crisis caused high volatility in the trading result. After –EUR 2.1 billion in 2008, this income component came to EUR 2.6 billion in 2009, which equaled two-and-a-half times the average of the pre-crisis years. Interest rate risk in the banking book (in a consolidated view) rose in the first half of 2009 but fell back to the level before the increase by the end of the year.

Liquidity Situation of Austrian Banks Stable

On an unconsolidated basis, Austrian banks' liquidity situation remained stable

⁸ Stock of specific loan loss provisions for claims on nonbanks (i.e. customers) as a share of total outstanding claims on nonbanks.

⁹ The numerator of this ratio is the stock of unconsolidated specific loan loss provisions for claims on nonbanks plus the loan loss provisions reported by the fully consolidated bank subsidiaries. The denominator is the sum of unconsolidated gross claims on nonbanks and the fully consolidated subsidiaries' gross claims on nonbanks. Due to regional differences in accounting rules, the consolidated loan loss provision ratio may convey a slightly distorted picture.

¹⁰ Market risk refers to the risk of value changes in financial instruments triggered by fluctuations of market risk factors such as interest rates, stock prices, exchange rates or commodity prices.

¹¹ At end-2009, market risk capital requirements amounted to 3.6% (on an unconsolidated basis) or 3.8% (on a consolidated basis) of credit risk capital requirements.

between mid- and end-2009. Short-term claims accounted for 72.5% of short-term liabilities, thereby standing at a level higher than the pre-crisis average (June 30, 2005, to June 30, 2007: 67.8%). Liquid assets more than offset the maturity mismatch in the short-term segment. Short-term claims plus liquid assets came to 124.8% of short-term liabilities. At 117.6%, the average of the two years preceding the outbreak of the crisis was somewhat lower.

More information compared with the unconsolidated data based on residual maturity statistics can be obtained from the data of the weekly liquidity reports, which are based on projected cash flows.¹² In addition, the reports include a simple stress scenario imputing the drying up of the unsecured money market and the foreign exchange swap markets. Under this scenario, the liquidity available after accounting for the cumulated net funding gap amounts to some EUR 96 billion after 12 months (reporting date: April 30, 2010; this reflects an increase by 18% since the reports submitted for January 8, 2010); more than one-half of this amount is unencumbered eligible collateral deposited at central banks. The aggregate short position of the Austrian banking system in the unsecured interbank market is very small, amounting to below 0.4% of the sector's consolidated total assets. At the reporting date April 30, 2009, this short position had still come to some 3% of aggregate total assets. These figures imply that

the Austrian banking system's net position on the interbank market is very conservative and therefore not vulnerable to potential effects from sovereign risk developments in the euro interbank market.

Financial Market Infrastructures Increasingly Relevant to System Stability

Financial market infrastructures are a fundamental element of the financial system enabling the settlement of transactions. They include stock exchange and trading platforms as well as downstream systems for clearing (e.g. by central counterparties – CCPs) and settling payments, financial instruments and securities (e.g. by securities depositories) and their technical infrastructures. These systems facilitate the secure and efficient processing of financial market transactions.

Due to the crucial importance of financial market infrastructures, an extensive debate has been underway at the EU level about a new regulatory framework and reinforced oversight, with proposals ranging from enhancing transparency and strengthening European cooperation in oversight to the introduction of mandatory clearing of standardized contracts through CCPs. The OeNB fulfils two roles in this area: First, it operates the large-value payment system HOAM.AT,¹³ which in the second half of 2009 processed some 700,000 transactions worth about EUR 4,800 billion. Second, the OeNB is the

¹² This report comprises detailed data both about banks' expected inflow and outflow of funds as well as data regarding the counterbalancing capacity over the 12 months following the report. The data are broken down by five maturity buckets (up to 5 days, 6 days to 1 month, 1 to 3 months, 3 to 6 months and six to twelve months) as well as by six currencies (euro, U.S. dollar, Swiss franc, pound sterling, Japanese yen and other currencies). For a detailed description of the weekly liquidity reports and the long-term development of data see Schmitz, S.W. and F. Weidenholzer. 2009. *Recent Developments in the Austrian Banking System's Liquidity Situation and the International Regulatory Debate*, Financial Stability Report 18, 60–66.

¹³ The Home Accounting Module Austria (HOAM.AT) is a real-time gross settlement system for processing euro payments provided by the OeNB to participants.

authority in charge of payment systems and financial market infrastructures oversight in line with Article 44a of the Federal Act on the Oesterreichische Nationalbank. Apart from regular monitoring activities, the OeNB carried out three system assessments in retail payments in the second half of 2009 (retail payments – which include, for instance, credit card or e-money payments – accounted for a total of 302 million transactions worth some EUR 24.3 billion in the second half of 2009).

The payment systems and financial market infrastructures operating in Austria proved stable also in a crisis-ridden environment; none of the system disturbances recorded affected the Austrian financial market.

Risks in CESEE Remain Elevated despite Improving Conditions

Against the background of massive international support for CESEE, conditions in the region over the past few months were characterized by lower interest rates, currency stabilization and – in some countries – a positive growth outlook. As a result, Austrian banks' CESEE subsidiaries can expect some improvement in their situation in 2010; the unwinding of international support measures, however, is one of the reasons why the risks in the region remain elevated nonetheless.

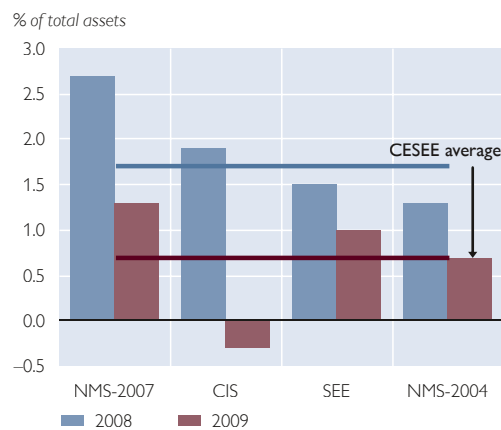
The total assets of Austrian banks' fully consolidated subsidiaries in CESEE shrank by almost 1% from EUR 256.8

billion at mid-2009 to EUR 254.4 billion at year-end. The market share of the 68 fully consolidated CESEE subsidiaries¹⁴ edged down slightly, from 15.1% at end-2008 to 14.4% one year later (excluding Russia: from 21.9% to 21.1%). The volume of on-balance sheet loans to nonbanks contracted by 3.2% from mid-2009 to end-2009 to EUR 160.2 billion. While the share of loans of Austrian banks' subsidiaries in the NMS-2004,¹⁵ Southeastern Europe (SEE)¹⁶ and the NMS-2007¹⁷ increased, that of Austrian subsidiaries in the CIS¹⁸ dropped (see table in the annex).

The profitability of Austrian banks' CESEE subsidiaries remained subdued and rather heterogeneous across countries in the second half of 2009 (see chart 30). Despite diminishing interest

Chart 30

End-of-Period Result of Austrian Banks' Subsidiaries in CESEE



Source: OeNB.

¹⁴ Excluding Bank Austria's not fully consolidated joint venture in Turkey (Yapı ve Kredi Bankası).

¹⁵ NMS-2004 refers to the ten Member States that joined the EU in 2004: here, the Czech Republic (CZ), Hungary (HU), Latvia (LV), Poland (PL), Slovakia (SK) and Slovenia (SI) are covered.

¹⁶ Southeastern Europe covers Albania (AL), Bosnia and Herzegovina (BA), Croatia (HR), Montenegro (ME), FYR Macedonia (MK), Serbia (RS) and Turkey (TR).

¹⁷ NMS-2007 refers to the Member States that joined the EU in 2007: Bulgaria (BG) and Romania (RO).

¹⁸ The Commonwealth of Independent States (CIS) aggregate includes Armenia (AM), Azerbaijan (AZ), Belarus (BY), Georgia (GE), Kazakhstan (KZ), Kyrgyzstan (KG), Moldova (MD), Russia (RU), Tajikistan (TJ), Turkmenistan (TM), Ukraine (UA) and Uzbekistan (UZ).

income, operating profits stagnated at EUR 7.1 billion thanks to extraordinarily high financial results. Risk costs were reported to have increased for all regions; the pace of this increase, however, varied very strongly at the country and regional levels. In total, CESEE subsidiaries continued to post better results than Austrian banks in 2009, earning a consolidated end-of-period result of EUR 1.8 billion or around 0.7% of total assets. Losses were reported for only three markets (Ukraine, Kazakhstan, Montenegro).

Credit risk ratios, accordingly, did not indicate an improvement, as illustrated by chart 31, which shows the share of nonperforming loans. While the loan loss provision ratio continued to increase in the aggregate – from 3.9% at mid-2009 to 5.2% at end-2009 – survey results suggest that provisions for nonperforming loans decreased further in the second half of the year. The sharpest increase in loan loss provisions was recorded in the

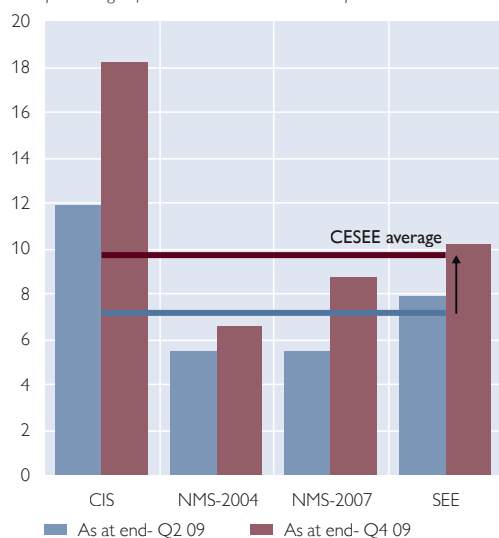
CIS, where the provisioning ratio for loans to nonbanks rose by 3.1 percentage points to 10.4% (NMS-2007: by 1.9 percentage points to 6%; SEE: by 1.8 percentage points to 5.6%; NMS-2004: by 1.1 percentage points to 3.7%). The level of loan loss provisions will remain elevated at least until end-2010.

The CESEE subsidiaries' capital buffers continued to be sound despite substantial write-downs and, in some cases, were even strengthened further. In the second half of 2009 alone, both the tier 1 ratio and the capital ratio were raised by 0.3 and 0.5 percentage points to 11.6% and 13.9% respectively. Actual excess capital varied strongly across countries, not least due to different minimum requirements. Strengthening capital ratios should generally remain an important objective; after all, Austrian parent banks still reported below-average capital adequacy compared with their CESEE peers at end-2009. The capital increases already made by parent and subsidiary banks have certainly been helpful in this context.

Chart 31

Nonperforming Loans of Austrian Banks' Subsidiaries in CESEE

As a percentage of loans to households and companies

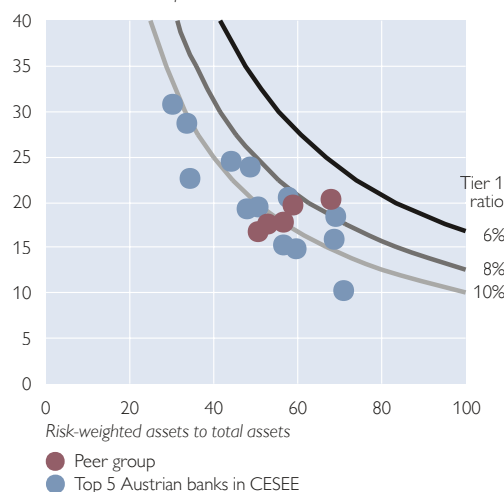


Source: OeNB.

Chart 32

Leverage and Capital Adequacy

Total assets to tier 1 capital



Source: Bloomberg, annual reports (as at 2009).

Curbing the risk exposure on the assets side at CESEE subsidiaries (in particular in the CIS) also helped reduce further refinancing risks in 2009. The loan-deposit ratio of Austrian banks' subsidiaries in CESEE was brought down by some 3.7 percentage points to 109.3% in the second half of 2009; in other words, the deposit deficit was halved from its peak in the first quarter of 2009 to EUR 13.7 billion at end-2009. The volume of intra-group interbank loans accordingly contracted (by EUR 1.9 billion from the second quarter of 2009) to EUR 49.1 billion. Still, parent banks' share in interbank liabilities stagnated at 79% over the same period. Credit growth developments at CESEE subsidiaries can be expected to take diverging paths over the next few quarters, depending on the strategic goals of their parent institutions.

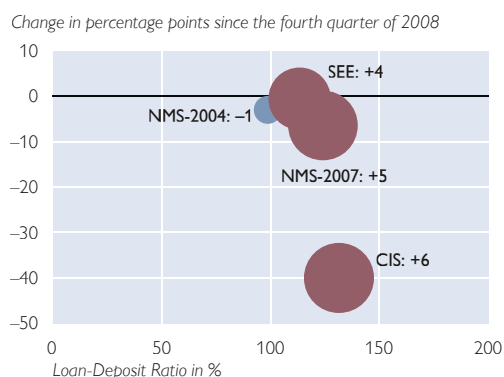
The volume of direct large loans extended by Austrian banks to non-

banks and financial institutions¹⁹ in CESEE fell by 3.8% to EUR 49 billion from mid-2009 to year-end. This decline was observed throughout the region and was strongest in SEE and the NMS-2007. The volume of direct loans to nonbanks contracted less sharply – by 1.4% to EUR 45 billion – than loans to financial institutions. Provisions for direct loans to CESEE increased but continued to be significantly lower than those for indirect loans.

Overall, from mid-2009 to year-end, Austrian banks' exposure to CESEE²⁰ rose by 9.0% from EUR 187 billion to EUR 204.2 billion (some EUR 300 billion including claims on foreign-owned banks in the region). This increase was mostly due to the nationalization of Hypo Group Alpe Adria, which implied that this institution's CESEE exposure is again considered Austria's. Although the difficult situation in CESEE (in particular CIS) markets visibly stabilized since the onset of the crisis, the

Chart 33

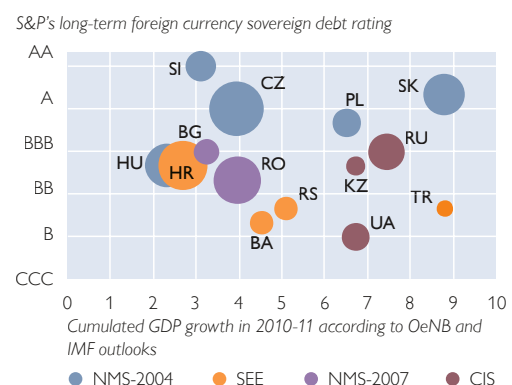
Loan-Deposit Ratio of Austrian Banks' Subsidiaries in CESEE



Source: OeNB.
Note: The size of the bubbles indicates the size of the deposit deficit. Blue denotes a negative value.

Chart 34

Country Risk Exposure of Austrian Banks in CESEE



Source: OeNB, Bloomberg, IMF.

¹⁹ This item comprises direct loans to nonbanks and financial institutions outside the lender's banking group. A historical comparison with previously published data is not feasible since intragroup loans were included until recently (up to the Financial Stability Report 18).

²⁰ According to BIS definition.

risks for Austrian banks in the region continued to be very heterogeneous. In particular, some markets are facing relatively weak growth prospects or are following fragile growth paths in economies that have suffered severely from the crisis.²¹

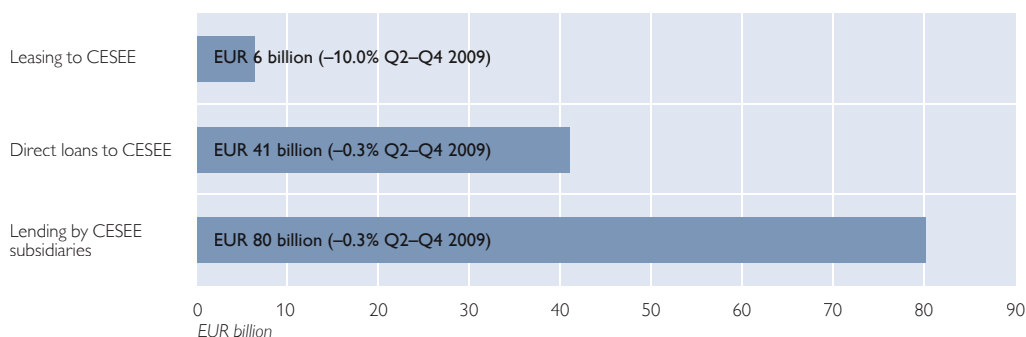
Notwithstanding its current stagnation, foreign currency lending in CESEE (and the resulting imbalances and risks) will remain a major issue. In the second half of 2009, the share of foreign currency loans held by Austrian subsidiaries fluctuated around 48.9% or EUR 80 billion, while the corresponding share of direct loans came to around 80% or EUR 41 billion in the fourth quarter.

The FMA and the OeNB have undertaken concerted efforts to reduce the concentration risk from foreign currency lending, e.g. by launching an initiative in the CESEE market aimed at gradually restricting new foreign currency loans to unhedged households and SMEs (i.e. those who do not have income or assets in the respective foreign currency). In a first step, Austrian

banks agreed to discontinue lending in Japanese yen and Swiss francs as well as extending foreign currency bullet loans linked to repayment vehicles to CESEE borrowers. Moreover, consumer loans in a foreign currency are to be granted to prime borrowers only. The next step will address longer-term mortgage and investment loans in foreign currency. For measures to be effective in this area, though, they need to be coordinated closely at the international level, involving national authorities, central banks and the relevant international organizations. Therefore, a working group was established under the auspices of the EBRD, the IMF and the European Commission within the framework of the European Bank Coordination (“Vienna”) Initiative to develop capital markets for longer-term funding in local currency. The FMA and the OeNB are taking proactive roles in this dialogue. In addition, the EU is currently discussing raising the capital requirements for foreign currency loans.

Chart 35

Austrian Banks' Foreign Currency Loan Exposure in CESEE



Source: OeNB.

²¹ The on-balance sheet exposure of all Austrian banks (including risk transfers) to Greece amounted to some EUR 4.2 billion at the end of 2009. Off-balance sheet claims stood at EUR 0.7 billion.

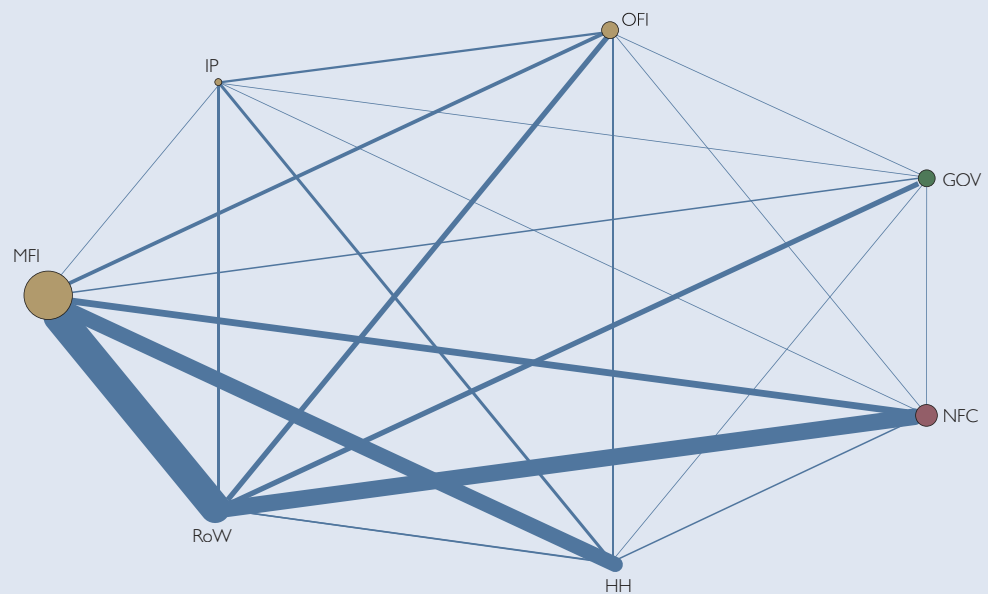
Highlighting the Financial Interlinkages between Economic Sectors for Risk-Oriented Financial Markets Analysis

The financial accounts contain data on financial assets and liabilities (currency and deposits, securities other than shares, loans, shares and other equity, insurance technical reserves and other accounts receivable) for all economic sectors: monetary financial institutions (MFIs), other financial intermediaries (OFIs), insurance companies and pension funds, general government, nonfinancial corporations, households¹ and rest of the world. The financial accounts for Austria (including the valuation approach) are compiled in accordance with the rules of the European System of Accounts (ESA). The data allow calculating a sector's financial claims and liabilities on a who-to-whom basis with all other sectors and thus allow drawing inferences about asset concentrations or asset shifts.²

As recent experience has shown, the deep and complex interlinkages both within the financial sector and between this sector and others have contributed to the intensification of the financial crisis. For instance, the U.S. insurance company AIG was considered not only too big to fail but also too interconnected to fail. A risk-oriented evaluation of interlinkages on a gross basis (e.g. without consolidation of interbank business) based on financial accounts data provides first insights into the financial ties of Austrian macroeconomic agents with each other and the rest of the world, which can be useful in financial stability analysis. The available historical data allow drawing preliminary conclusions about the impact of the economic and financial crisis thus far.

The chart highlights the degree of financial interlinkages of all sectors in the Austrian financial accounts. The size of the nodes reflects the level of intra-sectoral exposures, and the thickness of the connecting lines indicates the size of gross exposures between sectors (assets and liabilities)³.

Financial Interlinkages of Macroeconomic Sectors at the end of 2009



Source: OeNB.

Note: This visualization was done using the Pajek software. MFI stands for monetary financial institutions (including OeNB), IP for insurance companies and pension funds, OFI for other financial intermediaries, GOV for general government, NFC for nonfinancial corporations, HH for households (including nonprofit institutions serving households) and RoW for rest of the world.

¹ Including nonprofit institutions serving households.

² The ECB already used this balance sheet approach for financial assets in an analysis based on euro area financial accounts data. See www.ecb.europa.eu/pub/pdf/scpwps/ecbwp1124.pdf.

³ Changes in stocks result not only from transactions but also from changes in value and sector reallocations.

The gross exposure of Austrian MFIs (including the OeNB) to each other, for instance, increased by 82% to EUR 327 billion in the period from end-2006 (i.e. before the crisis) until end-2009, which was above all attributable to a rise in interbank deposits but also to intra-sectoral purchases of debt securities issued by banks. This sum currently represents 30% of total bank liabilities (2006: 21%) and 20% of assets held domestically (2006: 14%). The sharp increase in interbank exposures underscores that the mutual dependencies in the Austrian banking sector are growing and has made the banking sector itself the most important source of funding for MFIs; back in 2006, Austrian MFIs had still been only the third-largest creditors of MFIs after foreign creditors and households.

A look at OFIs (mainly mutual funds, holding companies of other MFIs, OFIs and insurance companies in Austria and abroad) shows that mutual funds' financial assets shrank by around EUR 30 billion from end-2006 to end-2009 (one-half of this decrease was due to the fall in the prices of tradable securities). Moreover, restructuring measures taken above all in the banking sector using financial holding companies led to a reallocation of foreign claims to domestic claims of OFIs on MFIs. Generally speaking, OFIs strongly increased their gross exposure to MFIs (+54%). This means that these intermediaries have become more important for financial stability and require special attention, given potential financial contagion risks.

For a small economy like Austria, international financial relations are naturally of key importance. In the period from 2006 to 2009, foreign creditors' claims on Austrian OFIs, nonfinancial corporations and the general government rose by 24%, 22% and 17%, respectively, while the liabilities of foreign borrowers to Austrian nonfinancial corporations and MFIs increased by 37% and 25%, respectively. The net claims (claims minus liabilities) of the rest of the world on Austria declined by more than 90% from 2006 (EUR 23 billion) to 2009 (EUR 2 billion). At end-2009, foreign creditors held one-third of Austrian debt, with domestic MFIs (EUR 321 billion) and nonfinancial corporations (EUR 250 billion)⁴ having higher liabilities than the general government (EUR 153 billion).

The refinancing sources of Austrian debtors (especially of MFIs and the general government) will play a key part in the further financial and economic recovery. Between end-2006 and end-2008, domestic MFIs increased their gross liabilities most strongly vis-à-vis other domestic MFIs (by EUR 192 billion), but reduced them again markedly in 2009 (on balance +EUR 147 billion). Over the same period of three years, MFIs also increased their liabilities to households (+EUR 42 billion), OFIs (+EUR 41 billion)⁵ and the general government (+EUR 6.5 billion or +34%). At the same time, the Austrian government mainly increased its gross liabilities to foreign creditors (+EUR 23 billion), within the government sector⁶ (+EUR 7 billion) and to MFIs (+EUR 3 billion). Using the past experience as a guide, the future refinancing situation of Austrian banks strongly depends on the financial strength of the domestic financial sector, households and foreign investors.

⁴ Nonfinancial corporations also include special purpose entities, which accounted for a volume of around EUR 80 billion in 2009.

⁵ See the above passage on restructuring in the OFI sector.

⁶ E.g. using intermediary funding transactions between the different levels of government.

Bank Support Package Increases Capital Ratios

Following its low in the third quarter of 2008, the aggregated consolidated tier 1 capital ratio (solvency ratio) of all Austrian banks improved by around 197 (236) basis points to 9.27% (12.81%) by the end of 2009. This improvement was achieved through a combination of privately raised capital and government

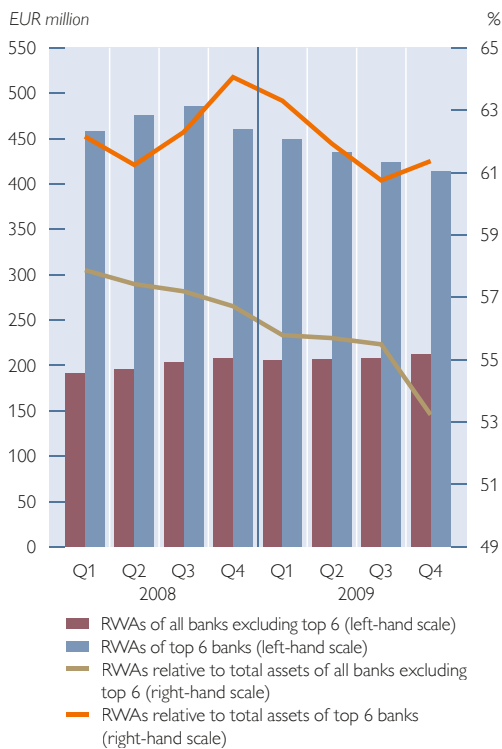
measures implemented until end-2009, which included strengthening banks' capital buffers²² by EUR 5.7 billion and providing guarantees worth EUR 1.7 billion.

At the same time, the risk-weighted assets (RWAs) of the six largest Austrian banks²³ declined from their peak in 2008, which was attributable to several partly overlapping effects. First, the government guarantees reduced the risk weight of the underlying assets.²⁴ Second, writedowns on defaulting loans and balance sheet downsizing contributed to the drop in RWAs. And third, RWAs declined owing to weak and partly even negative total asset growth.

A bank's leverage (total assets divided by tier 1 capital) is an important measure in the discussion on banks'

Chart 36

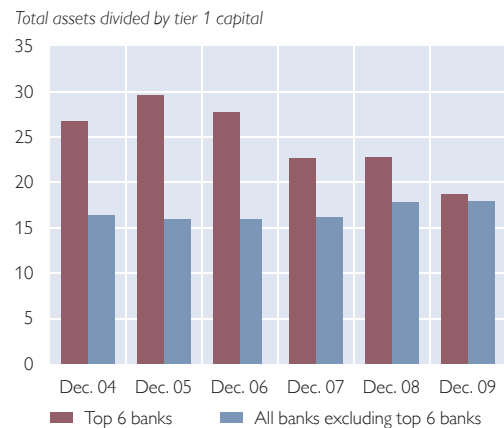
Development of Risk-Weighted Assets (RWAs)



Source: OeNB.

Chart 37

Leverage in the Banking Sector



Source: OeNB.

²² The additional limited private placements of approximately EUR 1.2 billion further increased Austrian banks' capital buffers and thus improved their risk-bearing capacity. Limited private placements refer to the capital injections that banks added to their own funds in addition to the capital provided by the government in order to reduce dividend payments to the government from 9.3% to 8% (where these private placements account for more than 25% of the total capital injected).

²³ These are UniCredit Bank Austria, BAWAG P.S.K., Erste Group, RZB, VBAG and Hypo Group Alpe Adria. To avoid distortions, the sector "all banks without top 6" was adjusted for Oesterreichische Kontrollbank, Oesterreichische Clearingbank AG and KA Finanz AG.

²⁴ In the context of the national bank aid package, the Austrian parliament passed an amendment to the Austrian law on balance of payments stabilization (Zahlungsbilanzstabilisierungsgesetz) on May 11, 2010, which allows allocating up to EUR 15 billion in unused guarantees from the national bank rescue package to stabilization measures in euro area countries experiencing difficulties, if required.

risk-bearing capacity, and specifically, on how to avoid future financial crises. The European Commission and the Basel Committee on Banking Supervision are considering introducing a maximum leverage of 25 but are still discussing certain deduction and change items for total assets and tier 1 capital (instead of balance sheet equity). The introduction of a binding leverage level as an additional measure of capital adequacy will be implemented only after the upcoming Quantitative Impact Study²⁵ has been evaluated, though. Imposing such a limit to prevent extremely high leverage levels seems reasonable in light of the problems encountered during the financial crisis.

A breakdown of the Austrian banks' leverage by the top 6 institutions and the other banks provides a very heterogeneous picture; however, based on the current definition of tier 1 capital, both groups currently have leverage levels of well below 25. While leverage has declined continuously since 2005 at the top 6 banks, it has increased slightly at the banks of the other group, so that the current levels are almost equally high in both groups. Based on a more narrow definition of tier 1 capital, leverage would be considerably higher.

Stress Tests Assume Historically High Initial Default Probabilities, Yet Provide Evidence of a Firming Trend in Aggregates

The OeNB regularly performs macroeconomic stress tests to assess the risk-bearing capacity of the Austrian banking system. In 2009, the results of these tests were mixed. While the top-

down analysis of Austria's largest banks showed that, in aggregate, capital ratios would remain above the regulatory minimum requirements even if the crisis were to deepen severely, a disaggregate look at the adverse scenarios assumed by the OeNB revealed further recapitalization needs for those banks that had already been weakened by the crisis.²⁶

Meanwhile, the outlook for the real economy has further stabilized, and even credit cycles, which tend to react with a lag, have since bottomed out in a number of countries. The brightening outlook has had a positive impact on conditions in the Austrian banking sector, as is evidenced by the backtesting exercises that the OeNB conducted to compare last year's estimates with actual developments.²⁷ In actual fact, Austrian banks fared much better in 2009 than projected even in the baseline scenario, which reflects current expectations – particularly in terms of operating income before risk provisioning.

Yet despite the turn in the credit cycle, the OeNB continues to see a need for further loan loss provisions. This assessment is reflected in the baseline scenario that the OeNB constructed for its latest stress test, based on its most recent macroeconomic projections for Austria and the OeNB and IMF outlook for the rest of the world.²⁸ To be able to assess the effects of another global economic slump – which, while unlikely from today's perspective, does provide useful benchmarks in a stress scenario – the OeNB constructed a separate “global risk premium” scenario which assumes that,

²⁵ See www.bis.org for more information.

²⁶ See the OeNB's *Financial Stability Report 18* (December 2009).

²⁷ See *Summary of OeNB Stress Test Results published on the occasion of the press conference release of Financial Stability Report 17* in June 2009.

²⁸ See IMF. 2010. *Global Economic Outlook*. April.

following the ongoing recovery in early 2010, risk premiums start to rise again after a global reassessment of risk and contribute to yet another contraction of GDP growth in the second half of 2010.

On a cumulative basis over a two-year horizon, the global risk premium scenario implies a 4.6% contraction in GDP in the CESEE countries that joined the EU in 2007 (NMS-2007) and a 3.8% contraction in Southeastern Europe (SEE). These regions are most severely hit by the stress scenarios as compared to baseline projections (+3.8% and +3.5%, respectively, see chart 38).²⁹ Such a scenario also triggers macroeconomic feedback effects on GDP growth in Austria, which would further increase the pressure on Austrian banks. As a result, GDP growth in Austria would contract to a cumulative -0.2% over the two-year horizon

rather than reach a cumulative 3.4%, as projected in the OeNB outlook for Austria of June 2010.

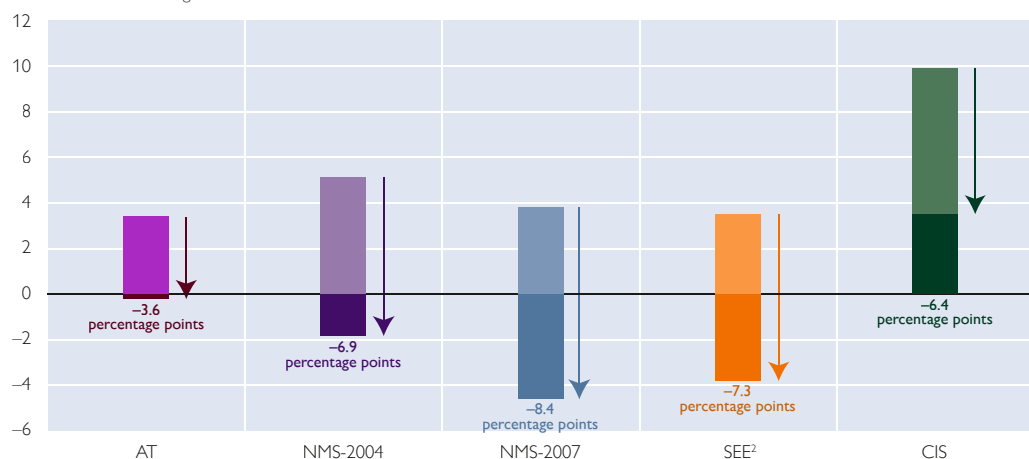
Over a two-year horizon, the global risk premium scenario produces an expected NPL ratio (nonperforming loans as a share of total loans) of almost 7% for Austrian banks in their home market and of almost 15% for their aggregate exposure in CESEE and the CIS. The CESEE and CIS subsidiaries alone would have to expect 19% of their outstanding loans to default in the stress scenario. In other words, the aggregate NPL ratio for the subsidiaries is three times as high – subject to regional differences in line with different GDP growth setbacks (see chart 38) – in the stress scenario as the aggregate ratio reported for the end of 2009.

Apart from a deterioration in loan quality and the ensuing higher need for loan loss provisions, the global risk

Chart 38

GDP Growth According to the OeNB Spring 2010 Stress Test¹

Cumulative annual GDP growth in %



Source: OeNB.

¹ Cumulative growth over the two-year stress horizon; the baseline scenario (lighter color) and the stress scenario (darker color) for Austria are based on the Austrian Quarterly Model.

² Southeastern Europe excluding Turkey.

²⁹ SEE as shown in this chart covers Albania (AL), Bosnia and Herzegovina (BA), Croatia (HR), Montenegro (ME), FYR Macedonia (MK), Serbia (RS); does not include Turkey (TR).

premium scenario produces a decline in operating income before risk provisioning and also an increase in risk-weighted assets. All three measures, in turn, drive the development of the capital ratios, of which the key ratio for assessing overall risk is the tier 1 ratio.³⁰

At an aggregate level, the stress scenario leads to a decline in the tier 1 ratio of both the six largest Austrian banks and the entire Austrian banking system.³¹ In the global risk premium scenario, the tier 1 ratio of the “big six” banks falls by 1.5 percentage points, and that of the entire Austrian banking system by 1.1 percentage points over a two-year horizon. At the same time, the tier 1 ratio remains above 8% (big six) or at 8.7% (system) even at the end of 2011 – in other words, more

than twice as high as the regulatory minimum requirements (see chart 39). As in the past, the results are rather mixed at the individual bank level. The baseline scenario, which reflects current expectations, finds Austria’s banks in aggregate to be in a position to cover their – still high – risk costs from operating results and to strengthen their capital base further from the second half of 2010 onward.

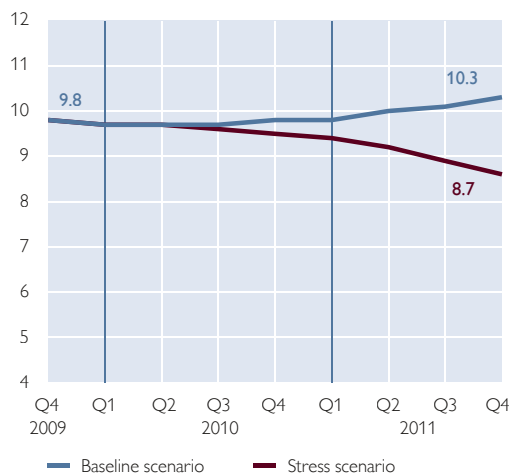
All in all, the spring 2010 stress test of the OeNB confirms the positive development path the Austrian banking system has followed since the fall of 2009. The Austrian banking system is strong enough to withstand even a severe risk scenario (which is, however, unlikely to materialize), as the operating results would suffice to offset most of the additional risk costs. At the same

Chart 39

Development of the Tier 1 Ratio in the OeNB Spring 2010 Stress Test¹

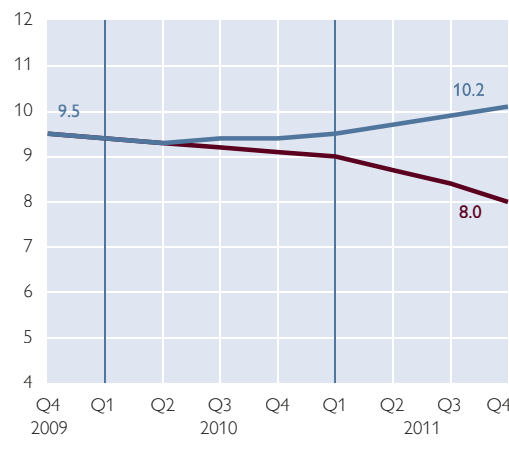
System

Evolution of the tier 1 ratio over the stress-test horizon in %¹



Big Six Austrian Banks

Evolution of the tier 1 ratio over the stress-test horizon in %¹



Source: OeNB.

¹ The initial tier 1 ratio includes recapitalization measures worth EUR 2.6 billion that are already in the pipeline.

³⁰ The impact of the macroeconomic scenarios was estimated on the basis of data reported as at end-2009 for a two-year forecast horizon. Specifically, the OeNB conducted a top-down test, and the six largest Austrian banks conducted bottom-up tests based on the OeNB scenarios.

³¹ Big Six: UniCredit Bank Austria, Erste Group, RZB, VBAG, BAWAG P.S.K. and HGAA.

time, the stress tests have confirmed that those banks which emerged fundamentally weakened from the latest crisis need to persevere with their structural adjustment and restructuring measures. Finally, in the light of the ongoing regulatory initiatives (Basel III), there appears to be a medium-term

need for the Austrian banking sector to strengthen its capital position further despite the positive developments that have prevailed since 2008. However, if current expectations are correct, at least some of the required funds will come from banks' profits.

Box 4

Basel III and Quantitative Impact Study 2010

In essence, the forthcoming changes to regulatory requirements for banks, as being worked out by the Basel Committee on Banking Supervision/BCBS (Basel III), and the European Commission (Capital Requirements Directive IV, or CRD IV) subject to guidance by the G-20 are aimed at aligning the risk-bearing capacity of banks – in terms of the size and quality of equity – more adequately with the risks banks incur. While Basel II would probably have helped contain the effects of the crisis, had it been implemented earlier, a number of items must still be adjusted, and there is also a need for some complementary measures.

The key elements of the proposals include measures to strengthen the capital framework by increasing the level of tier 1 capital, combined with more stringent eligibility criteria for the inclusion of financial instruments in this regard. This would raise both the level and the quality of the capital requirements. Furthermore, banks are expected to build up capital buffers in good times that could be drawn down during crises. Countercyclical adjustments in minimum capital requirements would contribute to financial stability and support the sustained provision of loans by banks. Moreover, a – somewhat controversial – leverage ratio is to provide a simple new metric designed to constrain the build-up of leverage at banks, thus compensating for potential shortcomings of banks' internal risk measurement models. The capital requirements for risks in banks' trading books (specifically relating to short-term transactions) are to be raised as well.

Last but not least, the reform responds to the need, as evidenced by the latest financial crisis, for regulatory constraints that will ensure an adequate liquidity supply for banks through appropriate liquidity buffers and long-term refinancing structures; in this respect, there are plans to implement new compliance ratios for banks. At the same time, enhanced accounting and disclosure requirements for banks are meant to increase transparency.

With a view to testing the impact of the changes to the Basel Capital Accord and to the CRD on the financial system, relevant data are currently being compiled within the framework of a quantitative impact study (QIS) in 2010. The QIS findings will be an essential input for calibrating the new regulatory framework. In Austria, 20 credit institutions are taking part in the quantitative impact study. These credit institutions have been selected for their size as well as for the sector and region for which they are representative. The QIS exercise was launched on February 16, 2010, with a kick-off event and the mailing of worksheets, in which participants need to enter a variety of balance sheet positions, indicators and product characteristics. The participating banks submitted the required data to the OeNB up to April 28. Following plausibility checks, the OeNB is going to send the data via the eBIS platform to the BCBS and to CEBS (Committee of European Banking Supervisors). In a next step, the data will be evaluated. The final results are to be expected in July 2010.

The OeNB sees a need for a truly comprehensive review of the planned measures. The quantitative impact study is a first step in evaluating key changes and their consequences for banks. However, the planned rules will also need to be reviewed thoroughly with regard to the impact they will have on lending and on the real economy. In this respect, the BCBS is working on a joint study with the Financial Stability Board and the IMF on the macroeconomic implications of the new framework. Initial findings are to be expected by July 2010; detailed results will be prepared for the G-20 meeting forthcoming in November.

Table 2

Ratings of Selected Austrian Banks

As at May 25, 2010

	Deposit Rating		Bank Financial Strength Rating	
	Long-Term ¹	Outlook		Outlook
UniCredit Bank Austria	A1	Negative	D+	Negative
BAWAG P.S.K.	Baa1	Stable	D	Stable
Erste Group	Aa3	Negative	C-	Negative
Hypo Alpe-Adria-Bank International	Baa2	On review for possible further downgrade	E	Stable
VBAG	Baa1	Negative	E+	Negative
RZB	A1	Stable	D+	Negative

Source: Moody's Investors Service.

¹ Domestic currency.

Downgrading of Hypo Alpe-Adria-Bank International Is the Exception, as other Ratings Remain Unchanged

The situation of Hypo Alpe-Adria-Bank International in early December 2009, before the bank was nationalized, prompted Moody's to lower its bank financial strength rating (BFSR) from E+ to E (now with a stable outlook) and its long-term deposit rating (LTDR) from Baa1 to Baa2 (placed on review for possible further downgrade). For all other large Austrian banks, Moody's has left its ratings and outlooks unchanged since end-October 2009, but negative outlooks continue to prevail.

Stock Price Recovery Has Lost Momentum since Q4/09; CDS Spreads Rising Slightly

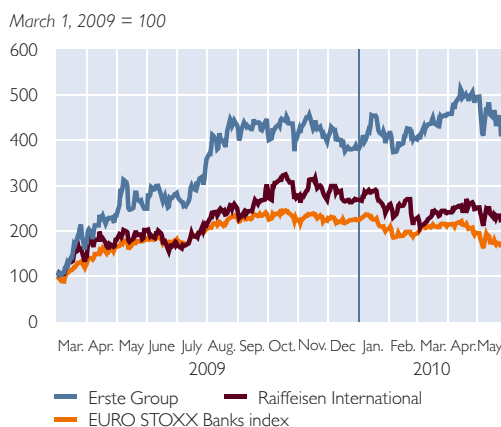
Following strong price gains for the stocks of Erste Group and Raiffeisen International since March 2009, the

upward trend lost considerable momentum towards the end of 2009. The paths of the two stocks have diverged noticeably since the beginning of 2010.³² While the stocks of Erste Group have gained 7% year-to-date, those of Raiffeisen International have lost more than 18%, reflecting investor uncertainty about the future structure of Raiffeisen International (some of the losses have, however, been recouped since the beginning of March 2010). This notwithstanding, the stocks of both Erste Bank and Raiffeisen International have outperformed the EURO STOXX Banks index, which serves as a benchmark for bank stocks of the euro area. Possible explanations include the diversified and profitable exposure of Austria's largest banks to CESEE as well as the decline in risk aversion to the region.

The CDS³³ spreads of Austria's largest banks have only partly mirrored the development of their stock prices. CDS spreads have been tightening (i.e. improving) compared with their peaks

Chart 40

Changes in Stock Prices of Banks

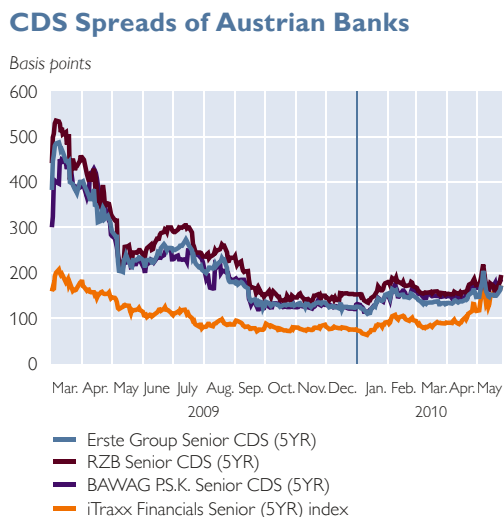


Source: Thomson Reuters.

³² Last update: May 25, 2010.

³³ Credit default swaps (CDS) are generally used as hedging instruments against the default of the underlying claim, but they may also be used for speculative purposes. CDS thus reflect the prevailing market sentiment, but not the actual refinancing costs of the respective businesses.

Chart 41



Source: Thomson Reuters, Bloomberg.

registered in March 2009 and remained broadly unchanged in the fourth quarter of 2009. While market participants have been somewhat more pessimistic again about the default probabilities of Austrian banks since the beginning of 2010, domestic banks' CDS spreads have not widened as much as the (European) iTraxx Financials Senior index (five years).

In other words, while the concerns of market participants about the public debt levels of some euro area countries also affected the stock prices and the CDS spreads of Austrian banks, the impact has not been as strong as for the European peer group.

Insurance Companies and Mutual Funds Benefit from Financial Market Recovery

Improved conditions in financial markets since March 2009 have had positive repercussions also for Austrian nonbank financial intermediaries. Given their business model, nonbank financial intermediaries are particularly dependent on developments in financial markets. After an exceedingly difficult

period at the beginning of 2009, sentiment in markets brightened; stock prices rose, risk premiums fell, and the high-yield currencies appreciated. In addition, assets under management were bolstered by strengthening capital inflows. However, these positive developments should not conceal the fact that profitability ratios are under strong pressure as a result of the financial crisis. Moreover, an important factor to note is that the financial and ownership interrelations in the financial sector can serve as channels for contagion.

Austrian Insurance Companies Benefit from Improved Climate in the Financial Markets

The pronounced upswing in financial markets in 2009 also had an impact on the Austrian insurance sector, with total assets (+4.9%), investments (+5.2%) and net income on investments (+15.1%) rising year on year. Unit- and index-linked life insurance policies benefited most from the recovery of stock markets, as the asset portfolios underlying these policies are more heavily based on stocks than those of conventional life insurance policies. Premium income in the insurance sector went up by 1.2% overall in 2009, which breaks down to 0.8% in the life insurance segments, 1.2% in the property/casualty insurance segments and 3.7% in the health insurance segment. Expenses for payouts of insurance claims augmented by 6.4%, rising in equal measure in the life insurance and in the property/casualty insurance segments. Income on ordinary activities skyrocketed by more than 80% to EUR 0.7 billion in 2009, albeit starting from a low level. At the end of 2009, the solvency ratio was nearly unchanged at 340%.

The stabilization of the CESEE region in the course of 2009 was im-

portant also for the Austrian insurance companies doing business in the area, as the stabilization was accompanied by a rise in confidence in the financial markets, which enhanced the value of insurance companies' investment, and by a slower decline in economic growth, which was important for premium growth.

The insurance sector's investment plays a key role in the analysis of financial stability and potential contagion. The OeNB's securities statistics, which, among other things, list all securities held by Austrian insurance companies, provide more detailed insights into insurance sector investment. At the end of 2009, Austrian insurance firms held roughly EUR 68 billion worth of securities (mostly debt and equity securities), which corresponds to nearly 70% of total assets (EUR 99 billion). Breaking down these assets, EUR

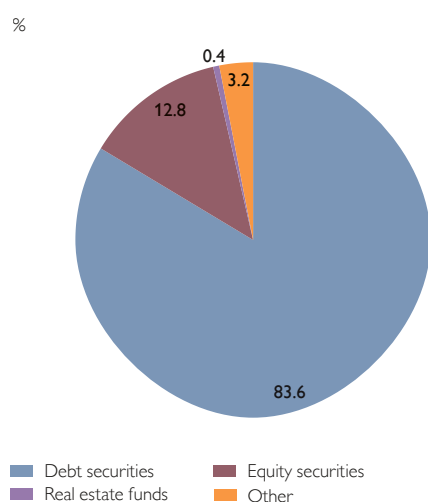
56.9 billion or 84% were invested in debt securities, EUR 8.7 in equity securities³⁴. The maturities of the debt securities are such that long-term liabilities are offset by long-term assets, which is typical of insurance companies, as more than half of the debt securities (EUR 34.5 billion) have more than ten years to run.

By type of instrument, securities issued by banks accounted for the lion's share of insurance companies' financial investment (EUR 32.7 billion), with a share of EUR 14 billion being attributable to Austrian banks. Foreign bank instruments stemmed above all from German banks (EUR 7.4 billion), U.K. banks (EUR 2.1 billion), and French banks (EUR 1.9 billion). The exposure to banks from Portugal, Ireland, Italy, Greece and Spain totaled EUR 2.3 billion. Finally, the Austrian insurance sector had EUR 0.3 billion worth

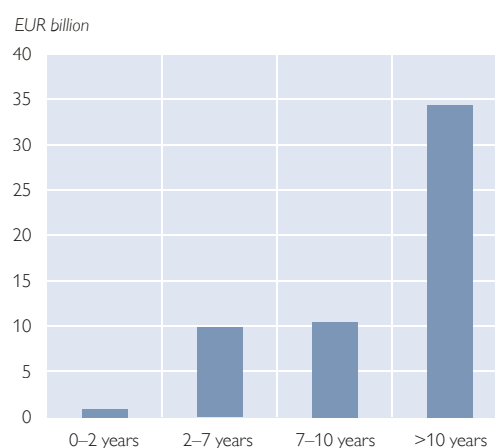
Chart 42

Breakdown of Securities Held by the Austrian Insurance Sector

Breakdown by Type of Security



Maturities of Austrian Insurance Companies' Debt Securities (Total: EUR 56 billion)



Source: OeNB.

³⁴ Debt securities include mortgage bonds, asset-backed securities, commercial papers, certificates of deposit, fixed-income securities, and fixed-income funds; equity securities include equity interest and equity funds.

of securities originating with CESEE banks in its portfolio.³⁵ The exposure to the financial sector as a whole, i.e. to banks, pension funds, financial holding companies and the like, adds up to nearly 70% or more than EUR 46 billion of total financial investment reported by insurance companies. In other words, the stability of the insurance sector is highly dependent on conditions at financial intermediaries.

Sovereign exposure amounted to EUR 13 billion or 20% of total securities investment. Against the background of the pronounced rise in sovereign risk in recent months, price risk has materialized more extensively on this investment position than in the past.

The largest exposures were to debtors from Austria (EUR 23 billion), Germany (EUR 11.4 billion) and France (EUR 5 billion). The insurance

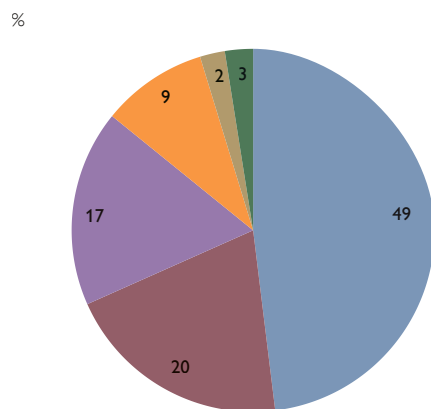
sector's total exposure in CESEE issued securities came to EUR 2.2 billion; that to securities of Portugal, Ireland, Italy, Greece and Spain to EUR 7.8 billion. Investment in Greek securities, mainly government bonds, ran to slightly more than EUR 0.8 billion at the end of 2009. The seven largest exposures were to AAA-rated countries and accounted for slightly more than three-quarters of total sovereign exposure.

The following challenges for the insurance sector risks may be identified under the current economic circumstances: increased sovereign risk, an extended period of low interest rates, setbacks in the financial markets, and low economic growth in tandem with anemic labor markets. While the contagion risk between the banking and insurance sectors has declined somewhat, it remains elevated.

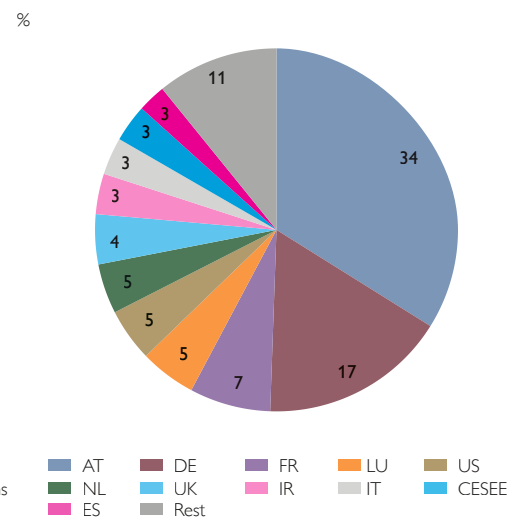
Chart 43

Breakdown of Securities Held by the Austrian Insurance Sector

Breakdown by Issuing Sectors



Breakdown by Domicile of Issuer



Source: OeNB.

³⁵ The OeNB's securities statistics cover holdings of securities only at an unconsolidated level, which means that they do not include securities held by Austrian insurance companies' CESEE subsidiaries. These securities could raise the exposure to banks operating in CESEE.

Trend Reversal for Mutual Funds after a Difficult First Quarter in 2009

After having suffered price losses³⁶ and a contraction of assets under management for seven successive quarters to the beginning of 2009, Austrian mutual funds started to recover again from the second quarter of 2009 and staged a trend reversal, with substantial price gains and income (EUR 10.8 billion) for the whole year. Total assets under management by Austrian mutual funds went up by EUR 11.2 billion (+9%) from end-2008 to end-2009 and reached EUR 140.6 billion at the end of February 2010, a level last seen in the third quarter of 2008. Mirroring these

developments, the consolidated net asset value actually invested in the market, i.e. assets under management adjusted for fund-of-fund investment, climbed to EUR 117.2 billion at the end of February 2010.

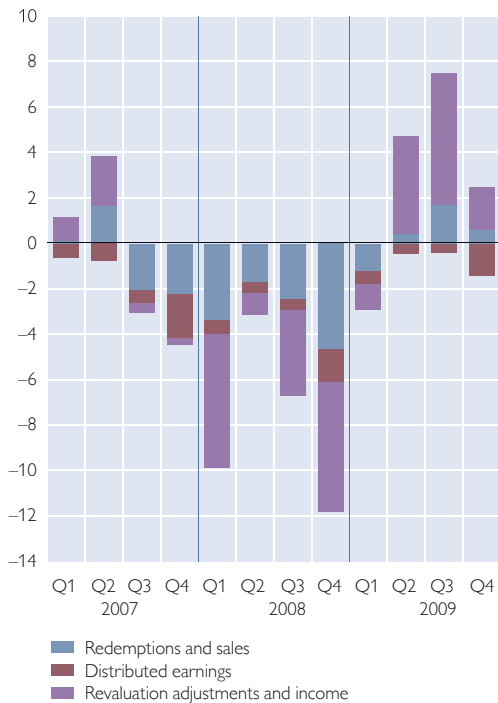
Figures on the structure of the holders of mutual fund shares, which have been compiled since end-2008, indicate that at the end of February 2010, 85% of the consolidated net asset value was held by domestic investors, more than two-thirds of which are attributable to households and nonprofit institutions serving households (EUR 36.0 billion or 36%), as well as insurance corporations and pension funds (EUR 33.8 billion or 34%).

The operating profit of Austrian investment companies³⁷ was EUR 106 million at the end of 2009, having

Chart 44

Change in the Consolidated Net Asset Value of Austrian Mutual Funds

EUR billion

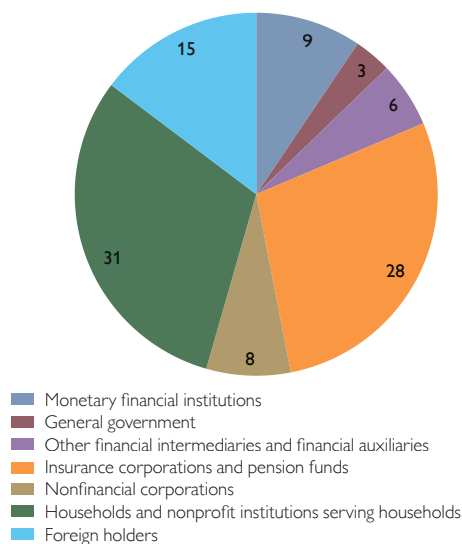


Source: OeNB.

Chart 45

Holders of the Consolidated Net Asset Value of Austrian Mutual Funds (Q4 2009)

%



Source: OeNB.

³⁶ Changes in consolidated net asset value resulting from revaluation adjustments and income.

³⁷ Austrian investment companies as defined in the Investment Funds Act and real estate investment management companies as defined in the Real Estate Investment Funds Act.

grown by 18% during the year. When considering this result, it must be borne in mind that the number of investment companies increased by 1 to 30 in the course of 2009. This positive business trend is gratifying after a very difficult period in 2008, but a comparison with 2007, when operating profit amounted to EUR 178 million, clearly indicates that investment companies are still affected by the financial crisis. Moreover, employment in the industry contracted by more than one-fifth from 963 employees at end-2008 to 763 employees at end-2009. The expected annual surplus of investment companies, finally, came to EUR 77.4 million in 2009 (+7% year on year; peak at end-2006: EUR 147 million).

The study "Assessing the Relevance of Austrian Investment Companies and Mutual Funds for Financial Stability" in the special topics section of this issue of the Financial Stability Report provides a more detailed analysis of the latest developments in the Austrian mutual fund market.

Pension Funds and Severance Funds Display Mixed Results

The recovery from the economic and financial crisis also had positive repercussions on Austrian pension funds and severance funds. Above all pension funds' nominal return on investment, which had declined by 13% in 2008, moved back into positive territory to finish the year 2009 with 9% growth. Severance funds, which tend to invest

more heavily in conservative debt securities, posted a far less pronounced negative result in 2008, but also achieved lower gains of +4% in 2009. Improving corporate governance at funds by providing more transparent information about market operations and fees would be desirable. As a case in point, it is currently difficult to assess to which degree return on capital invested, actuarial income or e.g. a change in mortality tables impact on beneficiaries. Moreover, at least for existing contracts, competition intensity must still be judged to be low.³⁸

Recent figures for 2009 show that both pension funds and severance funds continued to enjoy stable returns. Important factors with an impact on this result are the retained asset management fees, which correlate with the size of the assets under management and with the level of the regular contributions. Pension funds and severance funds receive a total of about EUR 100 million annually for management, i.e. the collection of contributions and asset management. (Assets under management came to EUR 16.6 billion in the fourth quarter of 2009, so the management fees correspond to around 0.6% of assets under management.)

In a breakdown, severance funds managed assets worth EUR 2.8 billion in the fourth quarter of 2009 (+32% year on year), and pension funds assets worth EUR 13.8 billion (+16% year on year). Assets under management are expected to continue to grow in the future.

³⁸ See also Schmitz, S. W. 2008. *Governance-Struktur und Verteilung der Risiken im österreichischen Pensionskassen-system*. In: Zotter, T. (ed.) *Pensionskassen: Europa – Österreich – Strukturen, Erfahrungen, Perspektiven*, Lexis-Nexis Verlag ARD Orac. Vienna. 107–129.

Special Topics

From Stormy Expansion to Riding out the Storm: Banking Development in Kazakhstan

Stephan Barisitz,
Mathias Lahnsteiner¹

Pushed by expanding income (on the back of rising oil prices) and by rapid external debt accumulation, the Kazakh banking sector featured one of the most dynamic credit booms in CESEE until 2007. Following the U.S. subprime crisis, banks' access to external funding plummeted and credit expansion ground to zero. The global financial and economic crisis that broke out in late 2008 forced credit institutions to drive down their external debt. Moreover, the collapse of the oil price in late 2008 and the devaluation of the Kazakh tenge in February 2009 cut domestic demand, liquidity and solvency. The share of nonperforming loans (NPLs) skyrocketed from 7% at end-2008 to 38% a year later. Large losses stemming from real estate exposure (burst of the housing bubble), lending to dubious partners and fraud played a role. Loan loss provisions were sharply ramped up, profitability was all but wiped out in 2008 and hefty losses incurred in 2009 (ROA at end-2009: -24%). Sector capital even turned negative. The authorities' crisis response measures included the nationalization of two of the country's largest banks and the recapitalization of two others (together accounting for two-thirds of banking sector assets). The two nationalized banks then defaulted on their high foreign liabilities and initiated debt restructuring negotiations that are currently in the process of completion, promising steep haircuts for creditors, which should reduce the sector's debt burden and positively impact its capital. Very high credit risk and a weak institutional environment weigh on investor sentiment. But there are also important shock-absorbing factors: the (oil price-driven) recovery of the real economy, depositor confidence, record-level official foreign currency reserves, the record-level oil stabilization fund and modest public debt.

JEL classification: G21, G28, P34

Keywords: Banking sector, banking crisis, credit boom, credit crunch, nonperforming loans, recapitalization, nationalization, shock-absorbing factors, Kazakhstan

1 Macroeconomic Background²

Following buoyant economic expansion (by over 10% p.a.) in the period from 2000 to 2007, annual GDP increases decelerated to 3.3% in 2008 and further to 1.2% in 2009. The impressively strong growth until 2007 benefited from economic recovery after a particularly deep transition depression in the 1990s, substantial energy price rises and related terms-of-trade improvements and large inflows of capital – FDI as well as debt-creating inflows. At the same time, the deterioration of the current account balance despite high oil prices signaled economic overheating. Gross external debt swelled to levels of above 90% of GDP in 2006 and 2007,

with banks' external debt growing fastest (table 1). In the period of high oil prices, gross official reserves also increased and the authorities accumulated substantial financial resources in the National Fund of the Republic of Kazakhstan (NFRK), the country's oil stabilization fund.

Kazakhstan's dependence on external financing made itself painfully felt in the second half of 2007, when the U.S. subprime crisis drastically reduced commercial banks' access to external funding. This caused a credit crunch and substantially cut back economic growth. The freezing of global financial markets and the dramatic worsening of the economic crisis in the

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² For additional information, see section 2 in Barisitz (2009).

Table 1

Selected Macroeconomic Indicators

	2005	2006	2007	2008	2009
Real GDP growth (annual change, %)	9.7	10.7	8.9	3.3	1.2
Inflation (end-of period, CPI, annual change, %)	7.5	8.4	18.8	9.5	6.2
Budget balance (general government, % of GDP)	5.8	7.5	-1.7	-2.1	-3.1
Current account balance (% of GDP)	-1.9	-2.5	-7.8	4.8	-3.2
Net FDI inflows (% of GDP)	3.7	8.3	7.5	11.2	8.9
Total gross external debt (% of GDP)	76.5	91.9	91.0	81.7	104.4
Thereof: banking sector gross external debt (% of GDP)	27.0	41.4	43.2	29.7	28.1
Gross international reserves (% of GDP)	12.5	23.7	16.5	15.1	21.7
NFRK ¹ assets (% of GDP)	14.2	17.5	19.7	20.8	22.8

Source: National Bank of Kazakhstan, Thomson Reuters, OeNB calculations, wii w.

¹ National Fund of the Republic of Kazakhstan (oil stabilization fund).

wake of the default of Lehman Brothers in September 2008 further tightened access to foreign finance and contributed to the reversal and sharp decline of oil and raw material prices, thus wiping out previous terms-of-trade gains. The Kazakh economy entered a bout of stagnation.

To cope with the renewed – and more serious – destabilization, the state took over and bailed out some of the country's largest credit institutions. The authorities' entire anti-crisis package³ provides for the allocation of about EUR 10 billion (about 12% of GDP) over 2009 and 2010 to support the banking sector, residential construction, SMEs, agriculture and infrastructure development. Worsening external balances, the strong depreciation of the Russian ruble in late 2008 and early 2009 and mounting losses of currency reserves in defending the Kazakh tenge exchange rate against the U.S. dollar eventually prompted the National Bank of the Republic of Kazakhstan (NBK) to devalue the Kazakh tenge by 20% in one stroke in early February 2009.

Whereas the country's already high external debt remained at around EUR 77 billion to EUR 78 billion during the year 2009, its ratio to GDP sharply increased – to over 100% – largely as a result of the devaluation of the national currency.⁴ Recovery of oil prices and of world economic activity in the second half of 2009 reinvigorated the Kazakh real economy. Meanwhile, as appreciation pressures increased amidst rising commodity prices, the central bank repeatedly intervened on the foreign exchange market to prevent the Kazakh tenge from strengthening too fast. At the same time, foreign currency reserves were replenished (table 1).

2 Banking Developments and Reforms

2.1 Accelerating Credit Boom (up to mid-2007)

Up to 2007, Kazakhstan had witnessed one of the most rapid credit booms of transition history. In 2005 and 2006, annual growth rates of bank loans exceeded 60% in real terms (table 2). The

³ "Joint Action Plan of the Government, National Bank and Financial Supervision Agency for Stabilization of the Economy and Financial Sector for 2009–2010", adopted in late 2008 and later slightly amended.

⁴ As to the structure of the country's external debt, intercompany loans somewhat increased (from 37% of total external debt in 2008 to 44% in 2009), whereas bank external debt declined (from 36% to 27%).

sector was mostly owned by domestic private businessmen and financial-industrial groups (conglomerates), although foreign – including Austrian – participation increased to 16% of total banking assets by end-2007. Important acquisitions by foreign strategic investors include UniCredit Bank Austria's purchase in June 2007 of a 92% stake in ATF Bank, the fifth-largest Kazakh credit institution, for EUR 1.6 billion, and South Korean Kookmin Bank's purchase in March 2008 of a 30% share (later increased to 42%) in Bank CenterCredit (BCC), the sixth-largest, for EUR 400 million.

The credit boom was fueled by expanding deposits and particularly by swelling foreign debt (leverage-led growth model). Relatively cheap syndicated bank loans and eurobond issues contributed to raising the share of non-residents in banks' liabilities from about a quarter early in the decade to over one-half in 2005 and 2006, which even surpassed the share of deposits. Banks' growing external debt (mostly medium- and long-term) was the major force pushing up the country's total foreign debt and in 2006 accounted for almost half of the latter. Mortgage, car and other consumer loans as well as trade and construction loans grew especially swiftly.⁵ Total consumer loans multiplied to reach more than one-third of the credit portfolio. In partly speculative investments, banks also increased their own holdings of real estate, financial assets and investments outside Kazakhstan. Property prices skyrocketed. The share of foreign currency loans in total domestic loans to the private sector remained high, at 48% at end-2006, while in total do-

mestic loans to households it increased markedly to 67% (table 2).

While largely externally financed banking activity constituted a key driver of economic growth and, in fact, macroeconomic overheating, sizeable financial stability risks accumulated: The sheer speed of credit expansion was liable to bear problems for risk management. The substantial share of foreign currency-denominated lending to often unhedged households and firms gave rise to sizeable indirect credit risk. Connected lending is also estimated to have surged. And the degree of dependence attained on cross-border capital inflows exposed banks to considerable refinancing and rollover risks. Moreover, off-balance sheet items⁶ had grown to over three-quarters of the size of balance sheet assets by end-2006. These problems have to be seen against the backdrop of weak corporate governance and banking supervision (see below).

2.2 Strong Impact of U.S. Subprime Crisis

The U.S. subprime crisis of August 2007 immediately heightened international investors' risk aversion and induced large-scale deleveraging, which implied withdrawals from placements in emerging markets. Market perceptions of risk on Kazakh assets rose sharply in August and September 2007, as direct exposure of some systemically important banks to the U.S. subprime market as well as the high degree of dependence on external funding raised analysts' awareness of the built-up debt burden of the Kazakh banking sector. After banks' access to external funding had plummeted, rating agencies down-

⁵ *The oil sector does not rely on domestic banks for financing.*

⁶ *Off-balance sheet items include contingent claims, contingent liabilities, transactions in foreign currencies and precious metals, and derivatives.*

graded some credit institutions and the sovereign in the fall of 2007. Confidence in the banking sector declined and household deposits contracted by about 5% in September and October 2007. Thereupon, credit institutions effectively stopped providing new

loans,⁷ which reined in growth of the nonoil economy and drastically affected mortgage and consumer finance. Property price development reversed and prices declined substantially. The Kazakh housing bubble burst, residential construction virtually stopped. Over

Table 2

Selected Banking Sector Stability Indicators

	2005	2006	2007	2008	2009
Credit risk					
Bank assets (% of GDP)	59.5	86.9	90.9	74.6	72.7
Private sector loans (% of GDP)	34.1	45.9	56.5	46.8	48.1
Real growth of loans to the private sector (annual change in %)	62.5	66.9	30.2	-6.1	-3.5
Real growth of loans to the private sector (exchange rate-adjusted, annual change in %)	61.1	69.4	32.2	-6.2	-13.0
Loans to households (% of loans to the private sector)	25.8	32.7	35.5	31.3	29.1
Nonperforming loans (% of total loans) ¹	3.3	2.4	2.7	7.1	37.8
Market and exchange rate risk					
Foreign currency loans (% of GDP)	17.6	22.2	24.1	20.7	23.3
Foreign currency loans (% of total private sector loans)	51.5	48.4	42.7	44.2	48.4
Foreign currency loans to households (% of GDP)	4.9	6.7	7.4	5.3	5.5
Foreign currency loans to households (in % of loans to households)	63.3	67.0	66.1	57.1	46.3
Foreign currency deposits (% of GDP)	9.1	10.6	9.7	12.0	17.8
Foreign currency deposits (in % of private sector deposits)	41.9	35.2	32.0	35.4	43.7
Lending rate (% p.a.) ²	13.0	12.2	14.8	16.1	14.3
Deposit rate (% p.a.) ³	9.1	9.8	11.5	11.3	10.0
Liquidity risk					
Private sector deposits (% of GDP)	21.8	30.1	30.3	33.9	40.7
Real growth of private sector deposits (annual change in %)	21.1	71.6	6.4	27.0	12.7
Real growth of private sector deposits (exchange rate-adjusted, annual change in %)	19.9	73.6	7.8	27.0	7.6
Loan-to-deposit ratio (%)	156.8	152.5	186.6	137.9	118.1
Loans-minus-deposits gap (funding gap) (% of banks' total liabilities)	23.0	20.2	32.8	19.7	9.3
Liquid assets (% of total assets)	..	16.1	13.9	4.3	19.3 ⁴
Liquid assets (% of short-term liabilities)	..	..	56.3	16.0	51.5 ⁴
Banks' external debt (% of banks' total liabilities)	50.3	52.8	54.1	45.4	35.6
Share of short-term external debt (% of banks' total external debt)	11.4	12.2	12.4	17.5	17.8
Profitability					
Return on assets (ROA, %)	1.8	1.4	2.2	0.2	-24.1
Return on equity (ROE, %)	18.7	14.6	18.4	1.9	-1190.0
Non-interest expenses to gross income (%)	..	76.26	55.08	59.01	96.1 ⁴
Shock-absorbing factors					
Capital adequacy ratio (total banking sector, %)	14.9	14.8	14.2	14.9	-8.0
Capital adequacy ratio (excluding BTA and Alliance bank, %)	..	..	..	..	16.7
Loan-loss provisions (% of total loans)	5.6	5	5.9	11.1	37.7
Memorandum items					
Foreign participation in the authorized capital of financial organizations (%)	10.5	5.6	15.4	17.9	16.7 ⁴
Banks with foreign participation (% of banks' total assets)	7.3	5.9	15.8	15.8	23.8 ⁴
Majority state-owned banks (% of banks' total assets)	..	..	..	..	23.3 ⁵

Source: National Bank of Kazakhstan, Agency on Regulation and Supervision of Financial Markets and Financial Organizations of the Republic of Kazakhstan (FSA), OeNB calculations.

¹ Broad definition of NPLs: loans overdue past 60 days and other qualified loans (FSA categories 5 and loss).

² Refers to weighted average of interest rates on credits extended to legal entities, excluding banks in tenge by maturity.

³ Refers to weighted average of interest rates on time deposits of individuals, in tenge by maturity.

⁴ September 2009.

⁵ Estimate. Source for figures on assets of Kazakhstan's largest banks: ATON.

⁷ Month-on-month credit growth ground to zero.

the year 2007, the credit-to-deposit ratio rose by over 30 percentage points to 187% – among the highest relative to peer countries (table 2).

In response to the liquidity squeeze, the NBK provided large-scale liquidity support to banks through repo agreements, foreign exchange swaps, early redemption of NBK notes and the reduction of reserve requirements. The government established a EUR 800 million (1.1% of GDP) financing facility in the form of earmarked government deposits with banks – to be on-lent to assist construction companies and support SMEs. The NBK also intervened heavily and successfully in the foreign currency market to support the Kazakh tenge. After declining by about 15% in the fall of 2007, official foreign currency assets (comprising NBK reserves and NFRK funds) recovered again and came to EUR 28.4 billion in mid-2008. The (temporary) stabilization of the situation was supported by high and spiking oil prices until the summer of 2008. Meanwhile, banks' external debt climaxed at EUR 31 billion (43% of GDP) at end-2007, and off-balance sheet items reached 90% of the size of the sector's total assets. Notwithstanding progress in strengthening the prudential framework, including the introduction of consolidated supervision, the Financial Supervision Agency (FSA)⁸ remained attached to formalistic compliance-oriented schemes instead of moving toward forward-looking risk-based supervision.

2.3 Repercussions of the Worsening Global Crisis (since late 2008)

The second wave of the U.S. and world financial crisis aggravated the Kazakh banking sector's difficulties. Global deleveraging intensified and forced credit institutions to drive down their external indebtedness. The collapse of oil and commodity prices and the sharp slowdown of growth struck the banking sector by cutting domestic income, demand, liquidity and solvency. Moreover, the devaluation of the Kazakh tenge in early 2009 added to pressures by sharply adjusting debt-servicing burdens of unhedged borrowers. After annual loan growth had more than halved to 30% in 2007 (in real terms), the credit volume shrank by 6% in 2008 and by another 4% in 2009. However, in exchange rate-adjusted terms, shrinkage accelerated in 2009 (–13%). Mainly due to numerical exchange rate effects, the share of foreign currency loans reverted back to 52% in the first half of 2009, before receding to a still high 48% at the end of the year (table 2).

The share of NPLs (broad definition, i.e. loans overdue 60 days) in total loans more than doubled to 7% in 2008 and from there more than quintupled to a disquieting 38% in 2009 (36% at end-March 2010).⁹ The devaluation of the Kazakh tenge in early 2009 certainly contributed to the deterioration. Large losses stemming from real estate exposures, lending to dubious partners, and outright fraud and embezzlement may also have played a role. It is not clear whether a turnaround is imminent, but it is expected to come in

⁸ Agency of the Republic of Kazakhstan on Regulation and Supervision of the Financial Market and Financial Organizations, established in 2004.

⁹ In a narrow definition (i.e. loans overdue 90 days) more consistent with international country comparisons, nonperforming loans rose from 5% of total loans at end-2008 to 21% a year later, which still gives rise to concern. NPLs (of whatever definition) do not include restructured loans, which may account for an additional 20% of the total volume.

2010. A considerable share of banks' external holdings turned out to be of questionable quality. This goes particularly for Bank Turan Alem (BTA), the country's largest credit institution at end-2008, which had invested about half of its assets in Russia, Ukraine and other CIS countries. Many banks have become risk averse and prefer to keep surplus liquidity on accounts with the NBK.

In reaction to the renewed crisis situation, the authorities' anti-crisis plan (see above) has focused its intervention and the largest amount of its assistance on supporting the banking sector. Kazakhstan's legislation was adjusted to enable the state to buy stakes in the country's largest credit institutions. Up to mid-2009, about half of the amount provided for by the anti-crisis plan was disbursed: The three largest and ailing credit institutions were recapitalized: In February 2009 the state holding company Samruk-Kazyna¹⁰ acquired a dominating equity stake of 75% in BTA, a minority stake of 28% in Halyk Bank (a savings bank and the country's second-largest bank), and a minority stake of 18% in Kazkommertsbank (the third-largest bank) for a total of EUR 1.7 billion. Another EUR 150 million was set aside for a majority stake in Alliance bank (the fourth-largest). These four banks together accounted for about two-thirds of the book value of banking sector assets at end-2008; none of them was foreign owned.

Samruk-Kazyna further placed deposits of EUR 1.3 billion (1.6% of

GDP) in the banking sector. Additionally, EUR 1.5 billion was channeled through the sector to support construction projects, mortgage, SME and farm lending. The lion's share of funding for the anti-crisis plan has come from the NFRK. The NBK, in turn, loosened monetary conditions by repeatedly cutting the refinancing rate and by further easing reserve requirements.¹¹ The deposit insurance fund (KDIF, established 1999) was strengthened: The KDIF's capital base was increased fourfold to KZT 100 billion (about 0.6% of GDP) and the deposit ceiling for retail customers was raised from KZT 700,000 per depositor per bank to KZT 5 million (around EUR 22,500).¹² This may have contributed to staving off possible bank runs.

After having slowed down sharply in 2007, total deposits expanded again by over a quarter in 2008 and by 13% in 2009. This was partly due to inflows from public entities (Samruk-Kazyna), and (in 2009) partly due to valuation effects from the devaluation of the national currency. In exchange rate-adjusted terms, deposit expansion in 2009 came to 8%. The loan-to-deposit ratio descended again to 113% at end-February 2010, a level not seen since 2004.

While NPLs have been rising precipitously over the last year, credit institutions have reacted by ramping up loan-loss provisions (and have thus complied with NBK instructions). At end-2009, provisions came to 38% of

¹⁰ Samruk-Kazyna is a public entity created by the end-2008 merger of the state asset holding company Samruk and the sustainable development fund Kazyna. Samruk-Kazyna employs more than 260,000 persons among 404 subsidiaries and associates spread across key sectors of the economy including energy, mining, telecommunication, transportation, finance and banking. Samruk-Kazyna estimates that total deposits by its entities in the top ten Kazakh banks account for more than one-third of the latter's deposit base (IMF 2009, p. 9). According to IMF estimates, by end-2009, Samruk-Kazyna's balance sheet exceeded EUR 35 billion (46% of GDP).

¹¹ Overall, in the assessment of NBK governor Marchenko, the authorities spent about EUR 13 billion in the period from 2008 to 2009 to shore up the banking sector (Euromoney, 2010, p. 32).

¹² However, KDIF reserves are not sufficient to cover deposits at the largest credit institutions. The KDIF has the right to borrow from the NBK (IMF, 2009, p. 11).

total loans (chart 1).¹³ Banks have also shown flexibility by restructuring part of their loan portfolio with the aim of facilitating customers' debt service. However, as a consequence, profitability was all but wiped out in 2008 and hefty losses were incurred in 2009 (ROA end-2009: -24%, table 2).¹⁴

Sector capital adequacy collapsed in the course of 2009 (end-2009: -8%, chart 1). The sector's total debt surpassed its total assets in the second quarter of 2009. Kazakh banking capital thus turned negative.¹⁵ At the end of the third quarter, the gap between banks' assets and liabilities had widened to 6% of GDP. An evaluation of banking sector stability carried out by the FSA at the end of the third quarter of 2009 confirmed a substantial deterioration of stability compared to the situation at the beginning of the year. This deterioration was largely triggered by the erosion of banks' credit portfolio quality and by the increase of provisions. Thus, the FSA assessed the sector as "unstable" at end-September 2009; at the same time, if BTA's and Alliance's

data were excluded, the sector would still be regarded as "stable, with extremely high risk levels".¹⁶ All in all, the above-mentioned "surprises" and deficiencies related to the two defaulted banks (see Box 1) point to persisting serious weaknesses of corporate governance, risk management, prudential regulation and supervision. Kazakh accounting practices do not yet correspond to IFRS.

Due to the frozen international debt market, public assistance and ongoing debt servicing, Kazakh banks reduced their external liabilities over two years by about one-third to EUR 21 billion, which corresponds to 36% of their total liabilities and 28% of the country's GDP at end-2009.¹⁷ Yet banks' total liabilities remained largely stable at around 80% of GDP. The above-mentioned anti-crisis plan thus contributed to effectively replacing banks' declining foreign debt with domestic (state) debt in order to uphold banking resources, activity and the functioning of parts of the economy.

Box 1

Bank Turan-Alem's and Alliance Bank's Default and Restructuring

Soon after BTA and Alliance Bank were nationalized, it turned out that their financial needs were higher than originally assessed: In mid-2009, the two banks' foreign liabilities were estimated to add up to about EUR 12 billion (comprising more than 40% of the banking sector's total external debt or up to 15% of the country's external debt), of which BTA owed almost three-quarters. In April 2009, both banks defaulted on their foreign obligations, which triggered payments on credit default swap (CDS) contracts written on the two banks. The

¹³ Not including Bank Turan-Alem and Alliance, NPLs at end-2009 came to around 18% of the banking sector's loan portfolio, and provisions reached about the same level.

¹⁴ Notwithstanding this dramatic deterioration, many credit institutions have apparently still been reluctant to recognize their losses (NBK-FSA, 2009, p. 51).

¹⁵ The negative equity values of the two large players Bank Turan-Alem and Alliance Bank pushed overall sector capital below zero (NBK-FSA, 2009, p. 58).

¹⁶ NBK-FSA (2009, p. 59); stability evaluation is carried out by calculating the Aggregate Financial Stability Index (AFSI), as described in the NBK-FSA (2008).

¹⁷ Net external debt of the financial sector was cut much more over this time span: It contracted by three-quarters to EUR 4.9 billion at end-2009 (Standard & Poor's 2010, p. 4). Banks' total external debt reportedly declined further in the first quarter of 2010, to EUR 19 billion. These changes do not yet incorporate any write-offs related to debt restructuring negotiations and/or arrangements with BTA and Alliance.

authorities declared that they do not intend to guarantee the loans of (nationalized) Bank Turan-Alem, Alliance Bank or of any other credit institution. In the summer of 2009, the two insolvent banks signed memoranda of understanding with their foreign creditors in which the latter principally approved to restructure the credit institutions' foreign debt. In November, Temirbank (the eight-largest bank of Kazakhstan), of which BTA – and therefore, the state – is a major shareholder, also declared default on its obligations and launched restructuring negotiations.

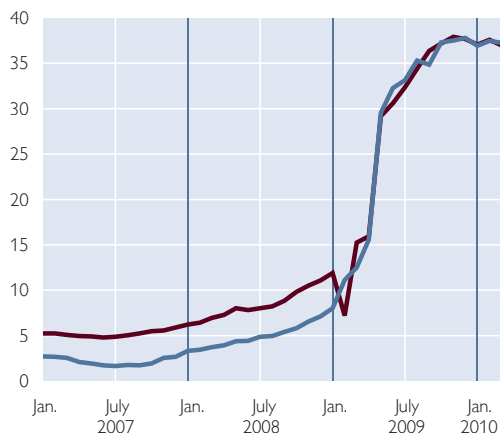
In December 2009, BTA as well as Alliance reached preliminary agreements with their creditors in which the latter accepted major haircuts (of 60% and higher). Subsequently, Samruk-Kazyna took over Alliance entirely. Temirbank reportedly reached a preliminary agreement with its creditors at end-March 2010. At around the same time, Alliance is reported to have signed its final agreement, which i.a. provides for the bank's creditors to take a 33% stake in Alliance (besides Samruk-Kazyna's remaining 67% stake) and for the bank's debt to be cut from EUR 3.3 billion to EUR 800 million (i.e. by 76%). BTA's final agreement is expected to be concluded until the summer of 2010. Once the BTA restructuring is wrapped up, Sberbank (of Russia) is widely expected to purchase a majority stake of BTA from Samruk-Kazyna.

Chart 1

Non Performing Loans, Loan Loss Provisions and Capital Adequacy

Non Performing Loans and Loan Loss Provisions

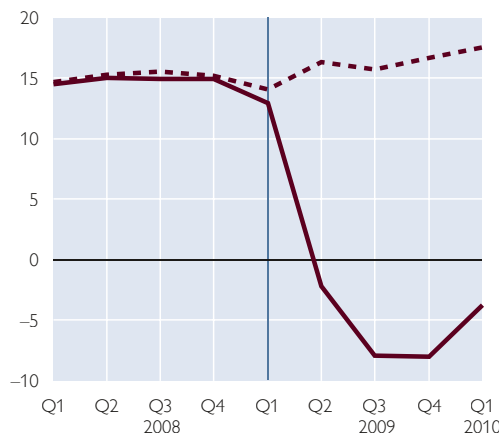
% of total loans



— Non-performing loans (loans overdue past 60 days and other qualified loans, FSA categories 5 and loss)
— Loan-loss provisions

Capital Adequacy

%



— Capital adequacy ratio
- - Capital adequacy ratio (excluding BTA and Alliance)

Source: National Bank of Kazakhstan, Agency on Regulation and Supervision of Financial Markets and Financial Organizations of the Republic of Kazakhstan (FSA).

2.4 Some Signs of Stabilization, Regulatory Reform

While they had dipped in late 2008 and early 2009, combined NFRK funds and NBK reserves subsequently benefited from the brightening external environment and the recovery of commodity prices in the second half of 2009 and expanded to EUR 38.9 billion at end-March 2010 (about 48% of GDP, their

highest-ever combined level). Meanwhile, two new foreign players entered the market in 2009: JSC “Shinkhan Bank” (of South Korea) and Vneshtorgbank (VTB, Russia) opened subsidiaries. Foreign-owned banks' share in total banking sector assets rose to almost one-quarter by end-Sept 2009; foreign-owned banks' share in total deposits also increased. While this partly re-

flects weaknesses of domestically owned banks, it is certainly not a sign of eroding confidence. Credit institutions' overall liquidity situation improved in recent months. Conditions allowing, the state plans to divest its stakes in the banking sector in the coming years.

In a regulatory response to the crisis, the authorities have recently tightened some elements of banking regulation or plan to do so: On October 1, 2009, the FSA raised banks' minimum capital requirements by more than three times to KZT 5.0 billion (approximately EUR 24 million). There are some exceptions for credit institutions that operate outside the two main cities of Almaty and Astana and are not registered there. These banks face minimum capital requirements of KZT 2.0 billion (EUR 10 million). Still, the substantial increase is expected to trigger some mergers and acquisitions in the sector. In early 2010, the FSA decided to curb new domestic foreign currency lending through higher provisioning requirements on loans to borrowers that do not have effective currency hedges (10% from mid-2010, 20% from 2011). The FSA and NBK further aim to limit banks' borrowing in foreign markets to a maximum of 30% of total funding (at end-2009 it stood at 36%), to cap the loan-to-deposit ratio at 150% and to contain the growth of off-balance sheet liabilities potentially through a ban on certain types of transactions (Standard & Poor's 2010, p. 18–19).

3 Conclusion and Assessment of Current Risks

Looking ahead, for the Kazakh banking sector a lot will depend on the further development of the external environment, especially with regard to global demand and the oil price as well as external financing conditions. So far,

signs of recovery of the real economy are not yet accompanied by signals of recovery of banking activity. With an important part of the banking sector still in default, banks are definitely not yet driving the recovery of the national economy; rather, they are preoccupied with overcoming their own serious earnings and capitalization problems. Foreign-owned credit institutions would appear to be in a comparatively good position to fill the gap and contribute to the economic recovery.

3.1 Very High Credit Risk

Very high NPLs reflect pronounced credit risk and are also largely responsible for the continuing credit crunch. This goes particularly for relatively high foreign currency lending – to an important extent to unhedged households. Mounting loan-loss provisions have wiped out profits, generated losses and pushed capital and capital adequacy into negative territory. This happened despite important recapitalization and nationalization measures in the early months of 2009. Obviously, further capitalization and/or restructuring measures appear necessary. Furthermore, despite improvements, Kazakh credit institutions remain exposed to a high share of (domestic and external) foreign currency-denominated debt in total banking debt. However, risks of a further devaluation of the Kazakh tenge are not imminent, as recent appreciation tendencies indicate.

3.2 Risk of Shaking Investor Confidence

The default of two of the largest banks (Bank Turan Alem, Alliance Bank) – after the state had taken over majority stakes in both – already affected investor confidence. Moreover, as a result of restructuring negotiations, foreign creditors are obviously putting up with

sizeable haircuts. Of course, foreign creditors have generally had a lot to cope with in the last two years of global crisis, and the authorities are obviously factoring in investors' usually short memory. In any case, strategic investors' confidence in the Kazakh banking sector has not evaporated, as witnessed by their expanding presence. At the same time, there is an emerging tendency that foreign investors substitute the establishment of subsidiaries (mainly via purchases of existing local banks) for the extension of cross-border loans.

3.3 Uncertainty Triggered by Weak Institutional Environment

Given Kazakhstan's traditional reputation of having the best managed banking sector of the CIS, some observers may not have expected the persistence of institutional shortcomings and flaws with regard to corporate governance, risk management, creditor rights, accounting (including substantial and largely intransparent off-balance sheet items), banking regulation and supervision. Problems with respect to oversight are most visibly reflected by the fact that the above-mentioned two large domestically-owned banks were able to

surprise the authorities – who had even become, or were about to become, their major owners – about their real financial state. Important regulatory and supervisory reforms that have just begun (see section 2.4) will hopefully bring about a qualitative improvement of governance and preclude hazardous faits accomplis of the kind experienced in the spring of 2009.

3.4 Important Shock-Absorbing Factors

Notwithstanding recent upheavals, including the devaluation of the Kazakh tenge, depositors have largely remained confident in the banking sector. Although official foreign exchange assets have been generously used to combat the financial and banking crisis, their combined amount has recently risen to a record level. The state's room for maneuver also stems from its low public debt (about 10% of GDP). Once the restructuring of BTA's and Alliance's external debt has been carried out, the size of the banking sector's foreign liabilities could fall further sharply, which would contribute to restabilizing the sector and may eventually even facilitate banks' re-entry into international debt markets.

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Stress Testing Austrian Households

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Over the past decades, household debt has increased sharply, both in absolute and relative terms, in almost all OECD countries. As the U.S. subprime crisis recently showed, even a relatively small number of indebted households can produce considerable turmoil if the sustainability of their debt is in question. The scope of aggregate data for analyzing these risks to financial stability is very limited, because it is neither possible to differentiate between households that hold debt and those that do not, nor is it possible to combine the data on household debt with data on their assets in a reasonable way. Therefore, many authorities concerned with financial stability are increasingly using microdata to analyze such types of financial stability risks. Combining different microdata sources, we assess financial stability risks arising from indebted households in Austria. We define a financial margin for indebted households and stress test each indebted household against a range of financial shocks (changes in interest rates, unemployment rate, asset prices, exchange rates and repayment vehicle yields).

JEL classification: D10, D14, D31, D39, E44, E17

Keywords: Stress tests, household indebtedness, ability to pay, microdata

This study is a first attempt to get some insight into Austrian households' ability to pay and their financial distress. The available data are far from ideal, especially in terms of sample size and due to the absence of a joint dataset that includes real estate wealth, financial wealth and all kinds of household debt and expenses. The study should also be regarded as a test for future possibilities of research on financial stability by stress testing that may open up as soon as data from the new Eurosystem Household Finance and Consumption Survey, which will

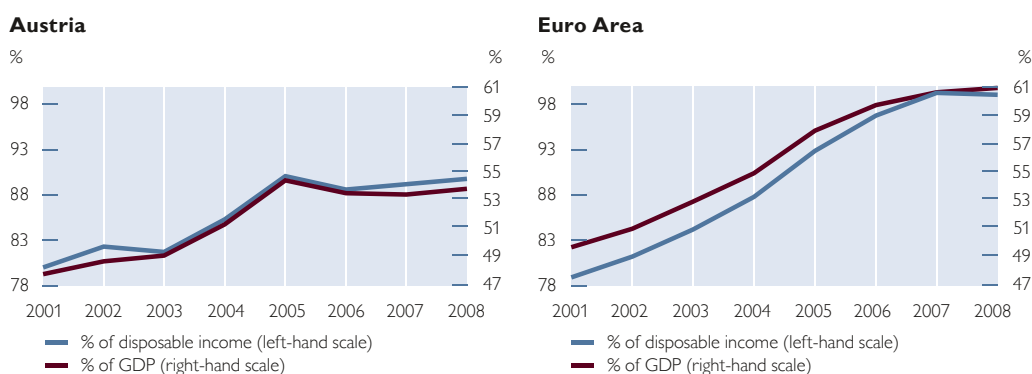
include all the necessary information in one dataset, will be available.

1 Introduction

Over the past decades, household debt increased both in absolute and relative terms in almost all OECD countries (see e.g. Girouard et al., 2006). Chart 1 illustrates this fact for Austria and the euro area by showing debt levels as a share of GDP and disposable household income. The difference in the developments observed in the euro area and in Austria from 2006 onward is mainly at-

Chart 1

Household Debt in Austria and the Euro Area



Source: ECB, OeNB.

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tributable to the strong expansion of household debt in Spain and France.

Total household debt as a percentage of households' total disposable income is a particularly common measure to assess financial stability risks. This measure is important because the debt-servicing ability of indebted households influences financial stability through different channels. Clearly, banks' losses on their loans to households is one important channel. Furthermore, households with a low or decreasing ability to service their debt may reduce spending; as a consequence, the demand for goods and services in the economy would decline, which, in turn, could have negative effects on companies and their ability to service their bank debt.

The scope of aggregate data for analyzing these risks to financial stability is very limited, as it is neither possible to differentiate between households that hold debt and those that do not, nor is it possible to combine the data on household debt with data on their assets in a reasonable way. As the U.S. subprime crisis recently showed, even a relatively small number of indebted households can produce considerable turmoil if the sustainability of their debt is in question. Therefore, many authorities concerned with financial stability are increasingly using microdata to analyze such types of financial stability risks. Similar to banks, central banks conduct stress tests of banks to assess these risks, which are a well-proven tool to assess risks in the banking sector. To this end, central banks collect data from banks to model stress scenarios in order to get an idea of possible future bank losses and their effects on the financial system as a whole. Banks, for their part, compile data on their (potential) clients at the household level to decide about the size of the loans they can grant to their customers (risk vs. profit assessment).

Under a reasonable risk management framework, these data should typically include household income, household structure and – possibly – household wealth.

To our knowledge, Austrian banks are currently using only internal data in their loan decisions, such as loan-to-value ratios, household income (if known) and maturities as well as historical probabilities of default and loss given default data by country and product. Furthermore they may use data on customers' creditworthiness provided by *Kreditschutzverband von 1870* (a company specializing in business data and debtor management). As far as we know, banks do not have access to any public registers (e.g. tax registers) or use information on households from surveys. On the basis of at least implicit assumptions about the future living expenses and behavior of these households, banks calculate the size of the loan they can grant to a customer. Usually this assessment exercise takes place before a loan (or new loan) to a household is approved.

The use of such data can entail numerous problems. First of all, the information is asymmetric. While the (potential) customers are interested in getting the highest loan levels at the best conditions, the banks aim to give their customers the worst conditions for the highest loan level the household in question could afford, given its financial situation for the duration of the loan. Second, there is uncertainty about future interest rate developments. This risk may be the banks' (in the case of fixed rate loans) or the customers' (in the case of variable rate loans). In either situation, the players need to take into account this risk to optimize their behavior. Therefore, every loan contract can be considered a game: On the one hand, in order to play these games well and ensure maximum profit (after the

decision about the level of risk has been made), banks need to gather the described information to be able to estimate the future financial situation of the household during the duration of the loan. On the other hand, customers have an incentive to overstate their financial situation and prospects. Ultimately, though, the customers' financial situation and prospects may not be overstated, because what counts is very often not only the personal finances of the borrower but those of the household as a whole; in some cases, even the wealth of people outside the household in question may be relevant, as may be forms of wealth about which banks typically do not collect data (e.g. jewelry, expected future inheritances etc.). The repayment duration may take up to 25 or 30 years, and, obviously, the financial situation of a household may change very fast because of unemployment, illnesses, divorces, inheritances and other unexpected events. It is not clear how often banks thoroughly reassess their customers' financial situation, which is a costly process. Of course, banks have some information: They can monitor withdrawals from and incoming payments on their customers' accounts. However, households may have accounts at other banks too, their financial situation may change without the bank noticing, or they may have loans at other banks or financial institutions. Even if banks have some idea about a household's probability of default, it is questionable how up to date these probabilities of default are. Likewise, in central banks' stress tests there are typically neither heterogeneous probabilities of default for households nor are there different risks of households, e.g. the probability of getting unemployed.

In addition to stress testing banks' portfolios – including household loans – some central banks recently started to

stress test households directly to complement their analysis of risks of bank losses and to assess the risk of declining demand and the risks to the economy as a whole if the share of distressed households rises.

Johansson and Persson (2006) conducted a micro analysis of Swedish households' ability to pay. After identifying financially distressed households by calculating a financial margin, i.e. household income minus debt service and other necessary running costs (such as food and clothes), the authors introduce shocks, such as an unemployment shock and an interest rate shock, to examine how the percentage of distressed households would change. Under the assumption that these households have a probability of default of 1, they calculate possible bank losses by deducting a household's wealth from its debt. Vatne (2006) finds that financial margins for Norwegian households increased substantially over the period from 1987 to 2004, implying a decreasing risk to financial stability. Zajackowski and Zochowski (2007) claim that despite strong credit growth, the payback ability of households did not deteriorate in Poland. Herrala and Kauko (2007) identify a share of 13% to 19% of distressed households in Finland for different sample years. In its report "Financial stability 2007," Danmarks Nationalbank stress tests Danish households in a way similar to that used by Johansson and Persson (2006). Danmarks Nationalbank's analysis shows that even in extreme scenarios of high unemployment and high interest rates, the debt level of the household sector would not threaten financial stability through high bank losses. These results, however, are highly sensitive to the definition of households' necessary running costs. For Chile, Fuenzalida and Ruiz-Tagle (2009) define financially distressed households

as those with excess expenses over income of 20% and a ratio of debt service to income of above 50%. According to their calculations, 14% of indebted households (holding 20% of total debt) are financially distressed. The authors also find that financial stability is not significantly affected by high unemployment levels. May and Tudela (2005) follow a different approach. Instead of calculating financial margins, they estimate predicted probabilities of mortgage payment problems in England and find that a ratio of debt service to income of 20% or above is associated with a significantly higher probability of mortgage payment problems. Holló and Papp (2007) use several approaches including financial margins and predicted probabilities to find that depending on the methods used, the average share of vulnerable households in Hungary ranged between 2% and 7.4%. According to their results, the situation is unfavorable in that debt is concentrated in the group of risky households, even though most of it is collateralized. For the case of Austria, Beer and Schürz (2007) did not have the necessary information to calculate financial margins. Instead, they define financially distressed households as those that have a debt service-to-income ratio of above 30%. They find that between 9% and 9.5% of Austrian households are distressed and that increases in repayment obligations make more households vulnerable than increases in unemployment.

In this paper, we combine different microdata sources and assess financial stability risks arising from indebted households in Austria. We define a financial margin for indebted households and stress test each indebted household included in the OeNB's Household Survey on Housing Wealth against different financial and economic shocks, i.e. changes in interest rates, asset prices,

exchange rates and repayment vehicle yields as well as a rise in unemployment.

2 Data, Definitions and Methodology

The main dataset we use in this paper is the OeNB's Household Survey on Housing Wealth 2008 (HSHW 2008). The HSHW 2008 was conducted as a pilot project for the future comprehensive Eurosystem Household Finance and Consumption Survey. The HSHW 2008 is a representative household survey investigating the housing wealth of Austrian households. The respondents were either the owners or tenants of the respective household's primary residence at the time of the interview. The survey focused on the ownership of the respective house or apartment and of additional real estate belonging to any of the household members as well as on the household's related liabilities. Furthermore, the study compiled detailed socioeconomic characteristics and data concerning intergenerational transfers in connection with housing wealth (see Wagner and Zottel, 2009, and Fessler et al., 2009).

In order to deal with item nonresponse, missing observations were multiply imputed using chained equations (see Albacete et al., 2010). To date, no dataset is available for Austria including all necessary information to calculate proper financial margins for individual households and loan losses for banks. This is why we use out-of-sample prediction to estimate the missing information from other data sources (see Johansson and Persson, 2006, and Zajackowski and Zochowski, 2007). The missing variables to be predicted are minimum expenses (for the calculation of financial margins) and financial wealth (for the calculation of bank losses). To predict the minimum expenses for the indebted households in the HSHW 2008, we use

two different data sources and an ad hoc variant to show the different impacts of each method. We use (1) the EU Statistics on Income and Living Conditions (EU-SILC) 2008 (for detailed information, see Statistics Austria, 2008), (2) the Austrian Consumption Survey 2004/05 and (3) an ad hoc method based on the minimum social benefits granted.

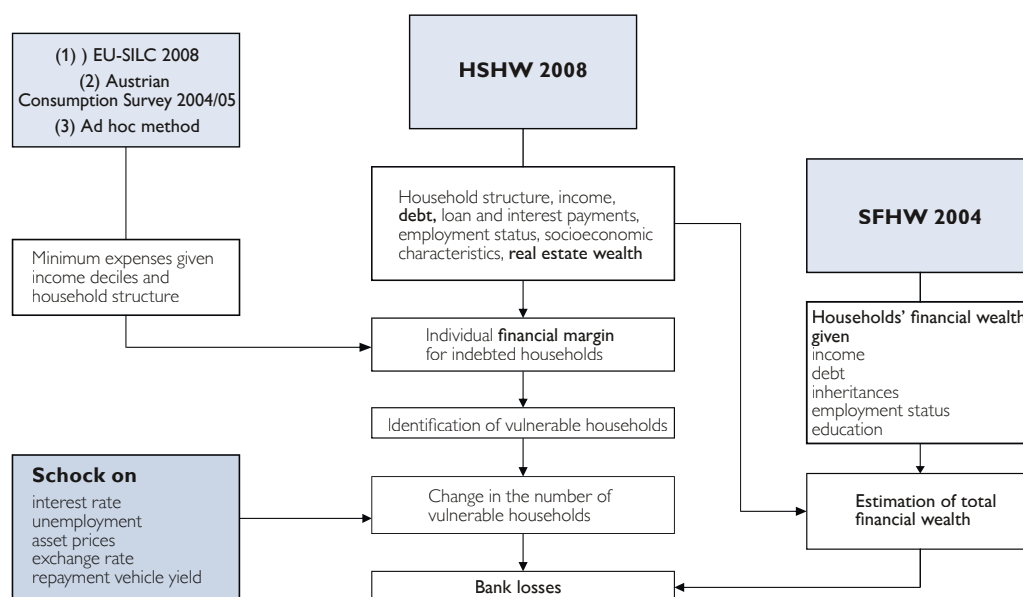
Each of these three variants gives us the information necessary for calculating financial margins for the indebted households, which in turn enables us to conduct stress tests. To assess possible bank losses, we also predict data on households' financial wealth. Whereas the HSHW 2008 includes real estate wealth, it does not include any information on financial wealth. Therefore we use data from the OeNB's Survey on Financial Household Wealth 2004 (SFHW 2004) to estimate financial wealth for the indebted households in

the HSHW 2008. Chart 2 shows a schematic representation of the different steps of our analysis.

In this study, we concentrate on the debt homeowners have taken out to build or purchase their primary residence. For these loans we have detailed information on value, interests, maturity, back payments, type and currency. We disregard housing loans taken out by tenants, loans of homeowners for other housing than their home and consumption loans because information on the latter is insufficient in the HSHW. Nevertheless, from the SFHW we know that around 85% of total household debt in Austria is housing debt. Given the fact² that around 83% of housing debt is debt taken out for the purchase of a primary residence, our study should cover around 71% of the total debt of households. Furthermore, indebted households' average consump-

Chart 2

Schematic Representation of the Analysis



Source: OeNB.

² According to the OeNB's 2007 survey on housing financing.

tion debt is in general much smaller than their average housing debt; likewise, tenants' average housing debt is much smaller than homeowners' average housing debt. The same is true for back payments. That is why we believe that excluding these loans should not have a significant impact on potential bank losses. Even in financial accounts data, which refer to the household sector (including also self-employed people, nonprofit institutions serving households and private foundations) – and do not classify all loans taken out for housing purposes as housing loans – housing loans accounted for some 61.5% of households' credit liabilities, while consumer loans accounted for 17.5% and “other lending” (e.g. loans to self-employed persons) for 21% in 2007.

Of the 2,081 households included in the HSHW survey, around 22% have housing-related liabilities. We exclude tenants' housing loans and homeowners' loans for other housing than their home, which leaves us 17% (360 observations) of the total sample of house-

holds which we consider to be relevant in our analysis.

Table 1 compares the subsample of indebted homeowners used in our analysis with the rest of the dataset. While this subsample consists of young, highly educated households with above-average household size, income and probability of employment, it is also the subsample with the highest concentration of debt.

Chart 3 shows that among indebted homeowners, too, a disproportionately large part of housing wealth and debt is held by higher-income households (Albacete and Wagner, 2009). The positive correlation between debt and wealth also exists for financial wealth (Fessler and Mooslechner, 2008).

Clearly, 360 households is a relatively small sample size. Furthermore, we apply prediction methods in order to calculate financial margins and the amount of bank losses. While these drawbacks of the analysis are problematic, we still hope to get some insight into the financial stress of households

Table 1

Descriptives of Indebted and Non-Indebted Homeowners and Tenants

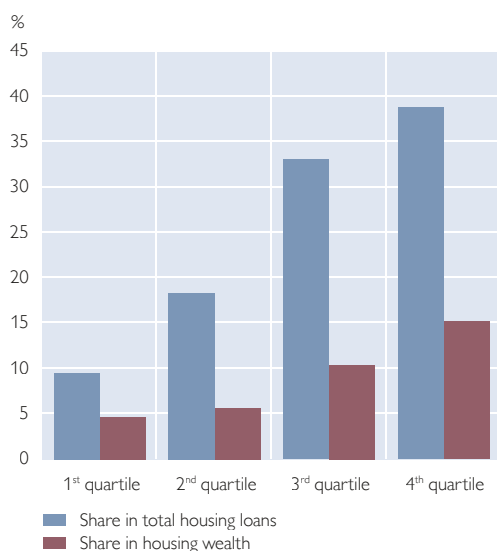
	Homeowners		Tenants
	indebted	non-indebted ¹	
Tenant/Homeowner			
Age	44	55	45
University degree	17.5%	9.2%	9.3%
Unemployed	0.9%	1.1%	4.6%
Employed	79.1%	53.5%	64.3%
Household			
Number of children (<18 years of age)	0.84	0.34	0.44
Number of adults	2.08	2.08	1.60
Mean monthly net income (EUR)	3.029	2.623	2.140
Mean imputed financial wealth (EUR)	54.047	49.105	22.006
Mean housing wealth (EUR)	314.654	389.314	131.954
Mean total housing debt (EUR)	92.850	1.855	2.604
Foreign currency housing loans for primary residence	29.8%	0.0%	0.0%
Mean number of loans among borrowers	1.3	1.2	1.1
N	360	725	996

Source: Authors' calculations.

¹ “Non-indebted” refers to households that did not take out a loan to build or purchase their primary residence; these households may have taken out other housing loans for other residences, though.

Chart 3

Distribution of Austrian Households' Debt and Wealth¹ per Income Quartile



Source: OeNB, ECB.

¹ Calculated only for households with housing loans.

under different scenarios. Also, we view the analysis as a test for possible research using data from the Eurosystem Household Finance and Consumption Survey, which will be available in 2011.

2.1 Financial Margins

To show the different impacts of using different data sources to calculate a financial margin, we use three different variants with two different data sources and one ad hoc variant. All of these are used in the existing literature.

We define the financial margin FM_i of a household i as

$$FM_i := Y_i - BC_i - DS_i, \text{ (Def. 1)}$$

where Y_i is disposable household income, BC_i is basic consumption and DS_i is debt service. BC_i should cover minimum basic consumption for a given income decile and household structure.

Financial margins are therefore a measure of how well a household is able to make ends meet. While Y_i and DS_i are available for each household analyzed in the HSHW, we need to predict BC_i . We use (1) the EU Statistics on Income and Living Conditions (EU-SILC) 2008 (for detailed information, see Statistics Austria, 2008), (2) the Austrian Consumption Survey 2004/05 and (3) an ad hoc method based on the minimum of social benefits granted to predict BC_i for the indebted households in the HSHW 2008.

(1) EU-SILC 2008

We use a question from the EU-SILC survey about the minimum amount of net income the household would need to just be able to make ends meet. This variable should in principle cover all necessary expenses. It can be split up into two parts: On the one hand, it should include basic consumption, such as expenses on food, clothes, transportation, childcare, heating, etc. On the other hand, it should include rent (for tenants) or debt service (for indebted homeowners). Therefore, to get basic consumption BC_i from this measure of basic living expenses, we subtract rent and debt service in the EU-SILC dataset.³ To map BC_i to the HSHW dataset, we estimate equation (1) on each household income decile in the EU-SILC and use the resulting coefficients to predict the corresponding values of BC_i for each household in the HSHW dataset,

$$\ln(BC_i) = \beta_1 Y_i + \beta_2 A_i + \beta_3 C_i + \gamma' S_i + \varepsilon_i, \text{ (1)}$$

where Y_i is household net income, A_i is the number of adults and C_i the number of children living in the household. S_i is

³ Note that we subtract debt service in the EU-SILC survey as we prefer to calculate the financial margin using the debt service variable from the HSHW survey, which has much richer information on the liability side.

a vector with dummies for eight of the nine Austrian provinces and ε_i is a normally distributed error term with zero mean and σ^2 variance. The fact that income and the number of adults and children are determinants of a household's day-to-day basic consumption needs is unambiguously clear. We add dummies for Austria's provinces to control for possible differences in price levels.

(2) Austrian Consumption Survey 2004/05

As a second variant, we use the expenses on food, clothes, electricity, heating and other maintenance expenses from the Austrian Consumption Survey 2004/05. We regress this measure of basic consumption, which is available for every household according to equation (1). This time, we do not apply decile regression but estimate on the whole dataset and introduce a constant.⁴ Again, we then use the resulting coefficients to predict BC_i for each household in the HSHW dataset.

(3) ad hoc method based on minimum social benefits

As a third variant, we use an ad hoc method based on minimum social benefits. Social benefit systems vary across Austria's provinces. We choose the minimum social benefits of the province of Vienna (excluding benefits for rents) granted to single-person households (\overline{BC}_{sph}) as a measure of minimum basic consumption. Basic consumption of a household is then defined for each household in the HSHW as

$$BC_i := \overline{BC}_{sph} \times ES_i, \quad (\text{Def. 2})$$

where ES_i is the inverted new OECD equivalence scale.⁵

2.2 Probabilities of Default, Exposure at Default and Loss Given Default

The percentage of vulnerable households is the key measure to monitor the resilience of households under different shocks, such as employment shocks and changes in interest rates, asset prices, exchange rates and repayment vehicle yields. It is, of course, not the key measure to monitor possible bank losses. In order to measure possible bank losses under different stress scenarios, we need to take into account the share of total debt held by vulnerable households as well as these households' assets. We assume a probability of default for each household, pd_i . A probability of default of 1 is assigned to a vulnerable household, ($FM_i < 0$), whereas a probability of default of 0 is assigned to other households, ($FM_i \geq 0$). Now we can define the exposure at default (EAD), which measures the percentage share of total debt held by vulnerable households,

$$EAD := \frac{\sum_i pd_i D_i}{\sum_i D_i} \times 100, \quad (\text{Def. 3})$$

where D_i is the debt of household i . The HSHW includes data on households' real estate wealth but no data on their financial wealth. Therefore, we define two measures of loss given default (LGD) in percent, where the first measures the share of debt held by vulnerable

⁴ We do not apply a decile regression because the income variable in the Austrian consumption survey is not as precise as that in the EU-SILC. The results are pretty robust to the methods used, though.

⁵ The weights are normally used to produce equivalence household income by multiplying household income by $1/ES$, where ES is 1 for single person households; the weight increases by 0.5 each for additional adults (>14 years of age) and by 0.3 each for children (<14 years of age).

households that is not covered by their real estate wealth,

$$LGD_1 := \frac{\sum_i p d_i N_i^1}{\sum_i D_i} \times 100, \text{ with} \quad (\text{Def. 4})$$

$$N_i^1 = \begin{cases} D_i - REW_i & \text{if } REW_i < D_i \\ 0 & \text{otherwise} \end{cases}$$

where REW_i is the real estate wealth of household i .

Since most households do not only hold real estate wealth but also financial wealth, LGD_1 can be seen as an upper limit for bank losses. For the second measure of LGD, we need to impute financial wealth from the SFHW. The HSHW includes a huge number of socioeconomic variables and indicators about whether a household holds at least some financial wealth of a certain type (e.g. stocks, savings accounts, etc.). These variables and indicators are also included in the SFHW, so we can use them for a prediction based on regression. We estimate equation (2) on SFHW data and use the resulting coefficients to estimate total financial assets (TFA) values for each household in the HSHW dataset,

$$\ln(TFA_i) = \alpha + \beta_1 Y_i + \beta_2 E_i + \beta_3 O_i + \gamma' X_i + \varepsilon_i, \quad (2)$$

where α is a constant, Y_i represents household income, E_i is the level of education of the household head⁶, O_i stands for the household head's occupational status, X_i is a vector of further control variables, such as the household head's age and age squared, a dummy for homeownership, a dummy for living

in a big city (Vienna) or not, and a dummy for holding risky assets (stocks, bonds, mutual fund shares), and ε_i is a normally distributed error term with zero mean and σ^2 variance. We adjust the resulting values using the increase in overall financial wealth from financial accounts data. While the fit of the model on SFHW data is arguably good, the necessity to predict TFA is clearly one of the many drawbacks we face because of the lack of a dataset including TFA, REW, debt, income and consumption (all these measures will be included in the upcoming Eurosystem Household Finance and Consumption Survey). After predicting via equation (2), we define our second measure of LGD in percent,

$$LGD_2 := \frac{\sum_i p d_i N_i^2}{\sum_i D_i} \times 100, \text{ with} \quad (\text{Def. 5})$$

$$N_i^2 = \begin{cases} D_i - REW_i - TFA_i & \text{if } REW_i + TFA_i < D_i \\ 0 & \text{otherwise} \end{cases}$$

3 Descriptives

Table 2 shows the percentage of vulnerable households, EAD , LGD_1 and LGD_2 for all three variants for which we calculated financial margins.

The percentage of households identified as vulnerable varies between 9.2% (variant 1) and 15.6% (variant 3), which seem to be plausible numbers. One possible benchmark against which we can compare our numbers in terms of plausibility is the EU-SILC dataset itself, which contains all the necessary information for calculating financial margins.⁷ We find a share of around 10%

⁶ In the HSHW, the household head is defined as the tenant or owner of the primary residence.

⁷ Note that EADs and LGDs cannot be calculated with EU-SILC 2008 data. For calculating the financial margin, we subtract from household income the minimum amount of net income a household needs to just be able to make ends meet (which includes debt service).

Table 2

Percentage of Vulnerable Households, Exposure at Default and Loss Given Default

Income quartile	Variant (1)				Variant (2)				Variant (3)			
	% of vulnerable households	EAD	LGD ₁	LGD ₂	% of vulnerable households	EAD	LGD ₁	LGD ₂	% of vulnerable households	EAD	LGD ₁	LGD ₂
1	56.7	5.9	1.0	0.9	59.6	6.4	1.2	1.1	70.5	7.1	1.2	1.1
2	14.3	7.1	1.3	1.1	18.3	9.2	2.3	2.0	27.6	11.8	2.4	2.0
3	1.2	0.5	0.0	0.0	5.3	4.4	1.0	0.6	7.9	5.7	1.3	0.7
4	1.0	0.8	0.2	0.1	0.9	1.9	0.5	0.3	1.1	2.0	0.5	0.3
Total	9.2	14.3	2.6	2.1	11.7	21.9	5.0	4.0	15.6	26.5	5.4	4.1

Source: Authors' calculations.

Note: Variant (1) uses EU-SILC data as the source for imputing basic household consumption, variant (2) uses the Austrian Consumption Survey 2004/05, and variant (3) uses an ad hoc method based on minimum social benefits.

of vulnerable households. Our numbers are also in line with the results of Beer and Schürz (2007), who find a 9% to 9.5% share of vulnerable Austrian households.

By predicting mean expenditure values from an expenditure survey across all income deciles, Johansson and Persson (2006) find that 6.3% of indebted Swedish households (accounting for 5.6% of total debt) are vulnerable. In his study on Norway, Vatne (2006) identifies 19% vulnerable households (holding 16% of total debt) by defining the level of necessary consumption for an average household over varying household sizes. Denmark's Nationalbank (2007) finds that the Danish EAD ranges between 4% and 15.5%, depending on the definition of basic consumption in the financial margin. In a study on Chile, Fuenzalida and Ruiz-Tagle (2009) use slightly different definitions of a negative financial margin and find that 9.5% to 13.6% of Chilean indebted households (holding 16.1% to 20.2% of total debt) are vulnerable. Zajackowski and Zochowski (2007) find that around 12% of Polish households were vulnerable in 2006 and held around 15% of total household debt. The authors use a minimum social ben-

efit concept to define basic consumption. According to Herrala and Kauko (2007), who use quite a different approach based on households' opinions, 13% to 19% of indebted Finnish households are distressed. Using several approaches such as financial margins and opinions, Holló and Papp (2007) find that the share of vulnerable households in Hungary ranges between 2% and 7.4%, while EAD is between 3.5% and 22%.

In Austria, vulnerable homeownership households have, on average, lower incomes, higher debt and a higher likelihood of a female household head than non-vulnerable households. Furthermore, it is remarkable that they have, on average, more loans (1.5 loans instead of 1.3), which could be indicative of different – maybe informal – lending channels.

Table 2 suggests that the share of vulnerable households is quite sensitive to the applied method of identification. At the same time, the patterns of these shares in relative terms over the income quartiles and concerning EAD and LGD seem to be quite robust across the different methods applied. The percentage of vulnerable households, i.e. households with a negative financial margin, decreases with household in-

come. EADs are highest in the second income quartile, even though the share of vulnerable households is much lower than in the first income quartile. In two of the three scenarios, the vulnerable households in the highest income quartile hold a disproportionately high amount of debt. The same is also true for the total in all variants. This shows that the few vulnerable households in the higher income quartiles hold, on average, much higher amounts of debt than lower-income households. LGD_1 and LGD_2 results show that most liabilities are covered by households' assets which, in the case of indebted homeowners, are mostly real estate assets.

The values of our vulnerability indicators (share of vulnerable households, EAD or LGD) should not be compared directly with those obtained in bank stress tests. We may use the same term, but there are several differences. First, our indicators additionally capture household lending channels other than banks, such as loans from other households, employers or other private lenders. These loans are probably subject to higher risks of debt default because of the lack of monitoring in these more informal channels. Second, our definition of vulnerable households assumes that as soon as a household has a negative financial margin, its probability of default is 1. This is of course a very strong assumption, because in reality, such a household is likely to find other ways of making ends meet, such as renegotiating the loan contract with the bank or asking family or friends for help. In particular, the incentive of searching for such alternative solutions could be higher in Austria than in other countries, because the cost of personal bankruptcy is much higher: In Austria, the insolvent person's entire wealth and income will be liquidated up to a

certain minimum level; by comparison, in some U.S. states, only debt securities are liquidated.

4 Stress Scenarios

In this section, we show how the share of vulnerable households shifts under different stress scenarios and calculate the resulting EADs and LGDs of those shifts. While the previous section provided some insight into the amount of vulnerable households and what this means in terms of lending risks and the risks of losses for banks, this section aims to give us some idea about the resilience of households against different shocks. Comparing the effects of different shocks could be valuable in terms of policy advice, even if the share of vulnerable households can in general be over- or understated and we cover only first-round effects.

We performed the stress tests using all three definitions of basic consumption, but for reasons of clarity, we present the results of variant (1) only, where basic consumption is imputed from EU-SILC 2008 data. We take the first variant to calculate bank losses because it delivers the most plausible share of vulnerable households compared with the EU-SILC benchmark. These results are also representative – in terms of directions and relative magnitude of the changes – of the other two definitions.

4.1 Rising Interest Rates

A rise in the interest rate is a shock to the households' debt service DS_t , but – at least in the short term – just for households which have variable interest loans. We assume that in the long run, even fixed interest loans are affected by such a shock due to a renegotiation of interest rates. A household's debt service consists of two parts, amortization and interest payments. Obviously, interest payments are the part affected by an

interest rate rise. In our sample, around 66% of indebted households hold at least one variable interest loan. For these loans we increase the debt service in line with the assumed rise in the interest rate and assuming that the loan (and interest) is still repaid according to schedule, i.e. without expanding the maturity of the loan. In the long-term scenario, we make these adjustments also for the remaining (fixed rate) loans.

Table 3 describes the resulting changes in the share of vulnerable households, EAD , LGD_1 and LGD_2 different increases in the interest rate.

Increases in interest rates have a strong positive effect on the proportion of vulnerable households. A rise by 1 percentage point raises the share of vulnerable households in the short (long) run by 0.6 percentage points (0.9 percentage points). In an extreme scenario, where interest rates increase by 3 percentage points, the share of vulnerable households rises by even 2.8 percentage points (3.8 percentage points), which is a 30% (41%) higher share than in the baseline scenario. These effects are the

strongest among the results of all stress scenarios, as every household's debt service – regardless of the type of loan – is affected by such shock.⁸ The effect on debt at risk or EAD is even stronger than that on the proportion of vulnerable households. In the extreme scenario of an interest rate increase by 3 percentage points, EAD rises by 50% in the short and 64% in the long run. This means that the debt of the newly identified vulnerable households is higher than the debt of those which are vulnerable in the baseline scenario. The former are households with higher incomes, as debt rises with household income in the group of indebted households. If we take into account wealth, the LGD indicators show that most of the debt of newly identified vulnerable households is covered by their wealth, mainly real estate. The fact that LGD_2 does not rise after the second and third increase in interest rates supports the idea that the newly identified vulnerable households are wealthier. Finally, it is worth mentioning that the short-term effects are quite substantial in comparison with the long-term effects, which can

Table 3

Short- and Long-Term Effects of Interest Rate Increases

	Interest rate increase by			
	Baseline scenario	1 percentage point	2 percentage points	3 percentage points
Short-term				
% of vulnerable households	9.2	9.8	11.1	12.0
EAD	14.3	16.8	19.8	21.4
LGD_1	2.6	3.7	3.9	4.1
LGD_2	2.1	2.9	2.9	2.9
Long-term				
% of vulnerable households	9.2	10.1	11.9	13.0
EAD	14.3	17.6	21.3	23.5
LGD_1	2.6	4.0	4.3	4.4
LGD_2	2.1	3.2	3.3	3.3

Source: Authors' calculations.

⁸ With the rare exception of zero interest loans (mainly loans from friends and family).

be explained by the high share of variable rate loans in Austria.

4.2 Rising Unemployment

When an employed household member loses his or her job, this is a shock to the household's income Y_i . As not every working person in an economy has the same probability of becoming unemployed, we first need to define the probability of becoming unemployed for each working homeowner in our sample. Note that we do not model unemployment for other working persons in the same household because we do not have enough information for a proper model. This, of course, implies that the decline in income for households with more household members may be underestimated because their contribution to household income is not affected by our unemployment stress scenario. We estimate a logistic model – which is here represented as single layer perceptron – to get probabilities of unemployment for all homeowners pu_i ,

$$\begin{aligned} pu_i &= \Pr(\text{unemployed} | X) = \\ &= A(\beta' X) = \frac{1}{1 + e^{-\beta' X}}, \end{aligned} \quad (3)$$

where $A(\cdot)$ is the cumulative distribution function of the logistic distribution, and X is a vector of independent variables including gender, education, household income, a dummy for a partner times a

dummy for employment of the partner, province, number of adults, number of children, age and age squared of the household head. Logit coefficients show expected signs, e.g. higher education significantly lowers the probability of unemployment, and having an employed partner significantly increases the probability of unemployment, which can be ascribed to the broader base of income resources in the household.

To calculate a rise in the unemployment rate, we use the resulting coefficients to estimate the probability of unemployment by increasing the constant of the model until the rate of unemployment matches a certain value. After a probability of being unemployed is assigned to each person, we draw from a uniform distribution a random real number $\eta_i \in [0;1]$ for each single person. If $pu_i \geq \eta_i$, we designate the person as unemployed, assume that he or she receives 55% of the monthly salary in unemployment benefits according to the current Austrian unemployment benefit rules, and subtract 45% of the person's wage from total household income. We repeat these steps 1,000 times using Monte Carlo simulation, each time calculate the vulnerability indicators, and finally take the mean of each one of these indicators over all simulated draws.

Table 4 describes the changes in the share of vulnerable households, EAD ,

Table 4

Effects of a Rise in the Unemployment Rate

	Increase in overall unemployment rate by			
	Baseline scenario	1 percentage point	2 percentage points	3 percentage points
% of vulnerable households (mean)	9.2	9.3	9.3	9.4
Mean EAD	14.3	14.4	14.5	14.6
Mean LGD ₁	2.6	2.6	2.6	2.6
Mean LGD ₂	2.1	2.1	2.1	2.1

Source: Authors' calculations.

LGD_1 and LGD_2 resulting from different changes in the overall unemployment rate.⁹

A 1 percentage point increase in the overall unemployment rate raises the share of vulnerable households from 9.2% to 9.3% and the share of their debt from 14.3% to 14.4%, but it does not change the risk of bank losses. Even the extreme scenario of an increase in the overall unemployment rate by 3 percentage points does not essentially change the LGD indicators. These results are in line with those of other studies. For example, Johansson and Persson (2006) find that an increase in the unemployment rate by 1 percentage point makes the proportion of vulnerable households and the EAD rise by 0.2 percentage points, while LGD remains unchanged, even in the extreme scenario.

Thus, the effects of unemployment shocks are much weaker than those of interest rate shocks. There are two reasons for this. First, an unemployment shock can be at least partially absorbed by a household using the income of other household members who are still in employment. Therefore, single or single-parent households are much more vulnerable to unemployment shocks than other households. Second, although every employed person is exposed to the risk of becoming unemployed, the group of homeowners, on which we focus, certainly has a lower probability of becoming unemployed than other groups (e.g. tenants). Table 1 shows that only 0.9% of indebted homeowners are unemployed, while this rate is 4.6% for tenants. Likewise, the share of homeowners with a university degree is considerably higher (17.5%) than the share of tenants with such a degree (9.3%), which also increases the proba-

bility that the former do not lose their job. Finally, table 4 shows that, contrary to the interest rate shock scenario, the unemployment shock scenario tends to make low-income households vulnerable, as evidenced by the fact that the relative increase in the proportion of vulnerable households in the extreme scenario of a 3 percentage point increase in overall unemployment is higher (1.6%) than the increase in EAD (0.8%), suggesting that the new debt at risk is held by poorer households with relatively low levels of debt and wealth. This result makes perfect sense because our logistic model design allows the unemployment shock to be selective on those people who have a higher probability of becoming unemployed (e.g. less educated or low-income household heads).

4.3 Changes in Asset Prices

Changes in asset prices are shocks to households' real estate wealth or their total financial assets. Such changes should in principle affect LGD_1 and LGD_2 only, but for households with bullet loans, they also affect the amount saved in the repayment vehicle (see section 4.4.2). Therefore, asset price shocks can also change the share of vulnerable households and thus EAD,

Table 5

Effects of Asset Price Changes

	Decrease in real estate wealth by			
	0%	10%	20%	30%
Decrease in total financial wealth by				
0%	2.1	2.3	2.6	2.9
10%	2.1	2.4	2.7	3.0
20%	2.1	2.4	2.7	3.1
30%	2.2	2.5	2.8	3.1

Source: Authors' calculations.

⁹ Based on the HSHW 2008 data, a change in the general unemployment rate by 1 percentage point translates into a 0.4 percentage point change in the unemployment rate of homeowners.

which is not considered in this scenario. Table 5 describes the changes in LGD_2 resulting from different changes in asset prices.

According to table 5, LGD_2 is much more sensitive to changes in real estate wealth than to changes in financial wealth. This is not very surprising, given that the real estate wealth of the households covered here is six times higher than their financial wealth (see table 1). In a scenario in which house prices and financial asset prices fall by 30%, LGD increases by 50% from 2.1% to 3.1%. These are the second strongest effects – after the long-term effects of an interest rate shock – that our stress tests showed. However, a drop in house prices by as much as 30% is a very low probability event, at least for Austria.

4.4 Other Shocks

4.4.1 Changes in Exchange Rates

A rise in the exchange rate is a shock to the households' debt service DS_t , but just for the households with foreign currency loans.¹⁰ In Austria, foreign currency loans – especially loans denominated in Swiss francs – are quite common (Beer et al., 2010). Around 29% of indebted households have at least one foreign currency loan. Mostly, these loans are bullet loans, which means that the entire principal of the loan is due at the end of the loan term and the borrower saves for repayment in a repayment vehicle. For our stress test, we construct a hypothetical debt service by defining the necessary regular payments a household has to make into repayment vehicles given the

amount and maturity of the loan and by defining an assumed typical yield for each repayment vehicle. A change in the exchange rate affects the regular payments for the rest of the maturity. For example, if the value of the Swiss franc against the euro increases, the total value of the loan rises, too, and the regular payments into the repayment vehicle rise accordingly. Note that in this scenario, we neglect possible changes in the interest for (or value of) the money already paid into the repayment vehicle before the shock occurs, and we also neglect possible changes that might occur at a later time. Furthermore, we again assume that the maturity does not change and that the households need to adapt their regular payments immediately. Table 6 describes the resulting changes in the share of vulnerable households, EAD , LGD_1 and LGD_2 for different changes in the exchange rate.

The appreciation of the foreign currency in which households hold their debt has only moderate effects on the proportion of vulnerable house-

Table 6

Effects of an Appreciation of the Loan Currency against the Euro

	Appreciation by			
	Baseline scenario	1%	2%	5%
% of vulnerable households	9.2	9.4	9.4	9.8
EAD	14.3	14.6	14.6	15.1
LGD_1	2.6	2.7	2.7	2.7
LGD_2	2.1	2.2	2.2	2.2

Source: Authors' calculations.

¹⁰ We are aware of the fact that a change in exchange rates could also be a shock to households' income if the wages of household members are denominated in foreign currencies (e.g. if people work abroad or for foreign companies which pay their wages in foreign currency). Furthermore, an exchange rate shock would be less severe for a household which holds debt in foreign currency but at the same time earns income in the same currency. We ignore both possibilities in our stress test. As far as we know, foreign currency income is very uncommon in Austria.

holds and EADs. For example, a 5% appreciation of the Swiss franc against the euro increases the share of vulnerable households from 9.2% to 9.8%, while the EAD rises from 14.3% to 15.1%. Still, even an appreciation by 1%, which translates into a rise in the share of vulnerable households by 0.2 percentage points, results in a small rise in LGDs.

Remarkably, an increase in the unemployment rate by 3 percentage points also translates into a 0.2 percentage point rise in the share of vulnerable households but has hardly any effect on LGD. Obviously, the households that are newly identified as vulnerable in the exchange rate scenario, especially those with a very small positive financial margin, hold comparably high amounts of debt. This is not surprising, as we know that foreign currency loans started to become popular in the late 1990s, and the outstanding debt in this category (mostly in terms of total debt minus cumulated payments into repayment vehicles) is still quite high, even that of higher-income households.

Furthermore, it is quite obvious that a 1% appreciation of the foreign currency is a more probable event than a 3 percentage point increase in unemployment. In the current economic situation, even appreciations by much more than 5% cannot be ruled out and would lead to much higher EADs and

LGDs. An appreciation by 30% would result in an LGD_1 of 3.4% and an LGD_2 of 2.6%, again even though just 29% are exposed to the shock.

4.4.2 Changes in the Repayment Vehicle Yield

In this scenario, we test the effect of a decrease in the assumed yields of the repayment vehicles. This is a shock to the households' (hypothetical) debt service DS_t , but just for those households which have bullet loans. Note that as in the last scenario, we neglect possible changes in the interest for (or value of) the money already paid into the repayment vehicle before the shock occurs, and we also neglect possible changes at a later point in time. Furthermore, we again assume that the maturity of the loans does not change and that the households need to adapt their regular payments immediately. Table 7 describes the resulting changes in the share of vulnerable households, EAD , LGD_1 and LGD_2 for different changes in the repayment vehicle yield.

The effects are very similar to those of the previous scenario, in which the foreign currency appreciates. A decrease in the repayment vehicle yield by 3 percentage points leads to a moderate rise in the proportion of vulnerable households from 9.2% to 9.6% and of the EAD from 14.3% to 15.4%. LGD_2 changes from 2.1% to

Table 7

Effects of a Decrease in the Assumed Yield of Repayment Vehicles for Bullet Loans

	Baseline scenario	Decrease in yield by		
		1 percentage point	2 percentage points	3 percentage points
% of vulnerable households	9.2	9.2	9.5	9.6
EAD	14.3	14.3	15.2	15.4
LGD_1	2.6	2.6	2.7	2.8
LGD_2	2.1	2.1	2.2	2.2

Source: Authors' calculations.

2.2%. This similarity is not surprising as most (72%)¹¹ foreign currency loans are bullet loans and therefore, the same households are hit by both shocks. The difference resides in the channel through which the shock is transmitted. While exchange rate shocks change the entire amount of the loan that has to be paid back at maturity, yield shocks increase the amount the household has to save regularly in order to pay back the whole loan amount at maturity. Through these two different channels, the two shocks increase the household's regular and/or its hypothetical debt service. Nevertheless, a decrease in the yield by 3 percentage points can be considered as quite a low probability event, because the majority of repayment vehicles used are life insurance products.

4.4.3 Combined Scenarios

We combine the two scenarios of a decrease in asset prices and an appreciation of the foreign currency in which loans are denominated to document the risks arising from foreign currency loans, which are mostly bullet loans linked to a repayment vehicle. In the unemployment scenario, an increase in vulnerable households by 0.2 percentage points has no effect on LGD_2 . By contrast, in the combined scenario, a rise in the share of vulnerable households by 0.2 percentage points resulting from an appreciation of the foreign currency by 1% that goes hand in hand with a 20% decrease in wealth translates into a rise of LGD_2 by 0.8 percentage points. These differences clearly result from the heterogeneous structure of household debt among different

types of households. Note that whereas most households are just exposed to interest rate shocks, unemployment shocks and asset price shocks, households with foreign currency bullet loans are exposed to all our shock scenarios – including exchange rate shocks and repayment vehicle yield shocks. In particular, the asset price shock reduces not only households' wealth but also parts of their cumulated payments into repayment vehicles, which our scenario does not cover.

In an unstable economic environment, combined scenarios may be quite likely. Under these scenarios, the households that are exposed to many of the risks assumed in the scenarios are hit hardest, and the banking sector's risk of loan losses increases as the risks multiply. Still, to model multiple shocks in a meaningful way, we would need much better data that allow much more elaborated models using micro simulations.

5 Conclusions

The sharp increase in household debt over the past decades has raised questions about the sustainability of this debt and about possible risks for the banking sector. As the U.S. subprime crisis and its repercussions recently demonstrated, even a relatively small number of indebted households can produce heavy turmoil if the sustainability of their debt is in question.

In the case of Austria, the relatively high share of foreign currency loans – usually bullet loans linked to repayment vehicles – is a reason for additional concern. In this case, a household takes on exchange rate risk combined with

¹¹ We think that this number could be understated as some households taking part in the survey may not have realized that paying into a repayment vehicle (instead of directly paying back the loan) implies having a bullet loan. This fact may also lead to a downward bias for the repayment vehicle scenario.

the risk of a change in the value and yield of the repayment vehicle, i.e. the household acts as a carry trader.

Macrodata are of limited use in the analysis of the risks to financial stability resulting from household debt, as it is neither possible to differentiate between households that hold debt and those that do not, nor is it possible to combine data on households' debt with data on their assets. Furthermore, macrodata do not include information about which households hold the risky forms of debt, e.g. foreign currency loans, and which households hold enough assets to cover their debt. In addition, it remains unclear how up to date and complete the information of banks is about the vulnerability of their clients, as we discuss in section 1.

Given all these facts, many authorities dealing with financial stability are increasingly using microdata to analyze and predict financial stability risks resulting from household debt. We employ available Austrian microdata to get first insights into these risks. These data are far from ideal, and more comprehensive surveys, which include detailed information on households' assets and liabilities, like the upcoming Euro-system Household Finance and Consumption Survey, are urgently needed.

Stress tests of banks usually use big datasets gathered from banks; information on individual households is very limited, though. In the recently conducted stress tests of households (using survey data), it is the other way round: The datasets are, in general, relatively small but the information on individual households is usually quite rich. Therefore, the stress tests are not substitutes but complements.

Stress tests of banks are arguably better suited for estimating the aggregate amounts of EAD and LGD and, therefore, better suited for getting an

idea of possible bank losses under different scenarios. Stress tests of households using survey data may be superior in showing the mechanisms of possible default at the micro level and may, therefore, help identify groups of debtors which are especially vulnerable. Furthermore, they can show what shocks are particularly dangerous for different groups of households. Another advantage may be that certain measures of probabilities of default are not inferred from the past but can be based on an assessment of the actual household budget. Clearly, further research and the development of more elaborate methods are necessary.

Still, we find that the households holding the biggest part of total household debt, i.e. indebted homeowners who took out loans for their primary residence, have higher levels of education, income and wealth than the others. This finding ties in with international evidence (e.g. Johansson and Persson, 2006).

We analyze the debt of homeowners for their primary residence; our study therefore covers around 71% of households' total debt. Using different approaches, we find that around 9.2% to 15.6% of those are vulnerable, i.e. they have a negative financial margin. Under the assumption that all households with a negative financial margin have a probability of default of 1, the EAD is 14.3% and $LG D_1$ is 2.6% (considering only real estate wealth to cover debt) and $LG D_2$ is 2.1% (considering real estate and financial wealth). We stress the indebted households' finances by assuming different types of shock scenarios. The rising interest rate scenario has the strongest impact (even in the short term), due to the fact that around two-thirds of debtors in Austria have variable rate loans. The rising unemployment scenario shows fairly moderate effects. On the one hand, the probability

of homeowners getting unemployed is much lower than that of tenants, and the indebted homeowners group is, on average, better educated and has a higher income. Furthermore, those who get unemployed in the group of indebted homeowners are more likely to have a lower level of education, income and outstanding debt. This is why the increase in EAD is relatively small in relation to the increase in the share of vulnerable households compared with the other stress scenarios. We also check how changes in asset prices change LGD_2 and find that changes in real estate wealth are much more harmful than changes in total financial wealth.

Our stress tests of households holding debt denominated in foreign currency or holding bullet loans focused on an appreciation of the respective foreign currency relative to the euro and on changes in the repayment vehicle yield. Given the fact that just a small subsample of households is affected, the effects of these changes on the share of vulnerable households and the other measures are remarkable. Obviously, in particular households holding bullet loans that are denominated in foreign currency and linked to a repayment vehicle could suffer from a combination

of the asset price, the exchange rate and the repayment vehicle yield scenarios, which, in turn, could multiply effects. Clearly, these households bear the highest risks in relation to their debt, as they are exposed to all the shock scenarios described here, and multiple shocks are by no means implausible.

All in all, the potential loan losses for banks resulting from shocks to Austrian households do not compromise financial stability as a whole. The risk that households bear is particularly high for those with foreign currency loans and bullet loans; since these loans are often a combination of the two, the resulting risks are multiplied.

However, the fact that around 10% of indebted households may have problems and need to reduce expenses to be able to service their debt if a shock occurs is worrisome. Also, it should be noted that this analysis does not include consumption credit debtors, who – even if the amount of their debt is, on average and in total, much smaller and therefore does not pose a threat to financial stability at all – are not as well off as indebted homeowners and may suffer more under their debt servicing duties.

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Effects of the Payment Services Act on the Austrian Financial Market

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On November 1, 2009, the Directive on Payment Services in the Internal Market (Payment Services Directive), which defines the legal framework for the establishment of a single market for payment services in the European Economic Area² and introduces a new category of payment service providers (known as “payment institutions”), was implemented in Austrian law by means of the Austrian Payment Services Act (Zahlungsdienstegesetz). The essential areas governed by the Payment Services Act are market access and licensing requirements for payment institutions (including the relevant supervisory provisions) as well as the issues of transparency, liability and recourse in the execution of payment services.

The definition of payment institutions now allows nonbanks to provide payment services (subject to certain licensing and supervisory provisions), which – as classic banking transactions – were previously the exclusive domain of credit institutions in Austria. From the European Commission’s perspective, this change should facilitate access to the financial market for new payment service providers.

Against this backdrop, this article provides an overview of the most important supervisory provisions in the Payment Services Act. The article then assesses the current significance of these newly defined payment institutions for the Austrian financial market and takes a look beyond Austria’s borders to discuss the situation in selected countries.

1 Introduction

In response to legal and technical fragmentation on Europe’s markets for payment services, the European Commission has endeavored since the 1990s to promote the integration of payment systems throughout Europe. While uniform technical standards and processes with regard to credit transfers, direct debits and card payments have been established under the heading of “SEPA” (Single Euro Payments Area),³ the European Commission is also pursuing the “New Legal Framework for Payments in the Internal Market”⁴ initiative in order to harmonize the legal framework for payment services.⁵ The purpose of the new legal framework is to ensure that Member States imple-

ment harmonized supervisory requirements and to eliminate legal barriers to market entry and encourage competition as well as the use of efficient payment systems by introducing a new category of payment service providers (known as “payment institutions”).⁶

In this context, the European Commission cooperated closely with the European System of Central Banks (ESCB), whose fundamental duties under Article 3.1 of the Statute of the ESCB and the European Central Bank include promoting the smooth operation of payment systems. This work was completed (for the time being) with the adoption of Directive 2007/64/EC of the European Parliament and of the Council of 13 Novem-

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² The European Economic Area (EEA) includes the Member States of the EU as well as Liechtenstein, Iceland and Norway.

³ This initiative has been carried out in cooperation with the European Payments Council (EPC), a self-regulatory body of European banks.

⁴ See Consultative Document COM(2003) 718 final.

⁵ For further details, see Abele et al. (2007), pp. 23 ff.

⁶ See recitals 4, 5 and 10 in the PSD.

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ber 2007 (Payment Services Directive – PSD) and its implementation in national law by the Member States.

2 Key Supervisory Provisions

2.1 General Overview of the Austrian Payment Services Act

The Austrian Payment Services Act (*Zahlungsdienstegesetz*) went into effect on November 1, 2009, and essentially reflects the structure introduced in the PSD.⁷ The term “payment institutions” defined in the new EU legislation was also introduced in the Austrian law (*Zahlungsinstitute*) and refers to commercial payment service providers⁸ which offer certain payment services on the basis of a payment institution license issued under the supervisory rules of the Payment Services Act⁹ and not on the basis of a banking license issued under the Austrian Banking Act (*Bankwesengesetz*). Credit institutions have thus lost their previous monopoly position on the market for payment services and will now have to compete with payment institutions in this field.

Like the PSD, the Payment Services Act basically comprises (i) provisions regarding the prudential supervision and authorization of payment institutions, (ii) provisions governing access to payment systems, and (iii) provisions concerning the execution of payment services, including the rights and obligations of providers and users.¹⁰ The

discussion below focuses on the provisions under (i).

2.2 Scope of the Payment Services Act

The Payment Services Act applies to the provision of payment services as a regular occupation or business activity in Austria. According to the explanatory memorandum on Article 1 paragraph 1 of the Payment Services Act, Article 2 paragraph 1 of the Value-Added Tax Act 1994 (*Umsatzsteuergesetz 1994*) is applicable to the identification of such commercial activities, as is the case with institutions under the Austrian Banking Act. Therefore, the provision of payment services free of charge – unless it is a service provider’s main activity – is not within the law’s scope of application (as stipulated in recital 6 of the PSD). For example, three-party transactions such as leasing or cash on delivery consignments are not subject to the Payment Services Act because the provision of payment services is not the main purpose of those activities.¹¹ This also generally applies to payment services such as those provided by collection agencies, attorneys, notaries and the like. The client is not charged separately for these funds transfers, which only constitute an ancillary service to the actual main service provided.¹²

Likewise, the European Central Bank, the central banks of other EU

⁷ The Austrian Act on Cross-Border Credit Transfers (*Überweisungsgesetz*) was repealed when the Payment Services Act went into effect. At the EU level, Regulation (EC) 924/2009 on cross-border payments in the Community replaced Regulation (EC) 2560/2001 on cross-border payments in euro and Directive 97/5/EC on cross-border credit transfers.

⁸ Apart from payment institutions, credit institutions, electronic money institutions, post office giro institutions, the OeNB as well as Austria’s central, regional and local authorities (when not acting in their capacity as public authorities) are allowed to provide payment services (see Article 1 paragraph 3 ZaDiG).

⁹ See Koch (2009), p. 869.

¹⁰ For a more detailed discussion, see Gapp and Landschützer (2009), pp. 170 ff. or Haghofner (2009), pp. 747 ff.

¹¹ See Annex 207, XXIVth legislative period, explanatory remarks on Article 1 paragraph 1.

¹² See Explanatory Memorandum on the German Payment Services Oversight Act (*Zahlungsdienstenaufsichtsgesetz – ZAG*), General Part, pp. 32 ff.

Member States, and the Oesterreichische Nationalbank (when acting in their capacity as monetary authorities), Austria's central, regional and local authorities (when acting in their capacity as public authorities) as well as the Oesterreichische Kontrollbank are explicitly excluded from the scope of the Payment Services Act (see Article 2 paragraph 1 Payment Services Act).

2.3 Supervisory Powers

In Austrian legislature's view, the licensing arrangements applied under financial market supervisory law to date have proven to be an effective means of ensuring the proper functioning of the market as well as customer protection.¹³ With regard to supervisory powers (and licensing provisions), the Payment Services Act therefore mirrors the system set forth in the Austrian Banking Act, providing for joint responsibility and a clear division of powers between the Financial Market Authority (FMA) and OeNB in this regard. In addition to its macroprudential tasks, which involve analyzing the overall economic situation and systemic risks in banking and payments, the OeNB also performs a microprudential function; these activities include analyzing the economic situation of individual institutions, including the periodic receipt and processing of supervisory reporting data, as well as performing regular on-site inspections of individual institutions. The primary duty of the FMA is to consider the results of the OeNB's analyses and inspections as the responsible public au-

thority; the FMA is an independent, integrated financial supervisor,¹⁴ that has the power to issue official orders and take official measures, meaning that the authority decides whether licenses are issued and can conduct official investigations, order supervisory measures and impose administrative fines. In a very broad sense, the FMA's supervisory activities also include monitoring compliance with organizational and anti-money laundering regulations, which are ultimately designed not only to mitigate systemic risks and ensure the solvency and integrity of payment institutions, but also to support the smooth and legally compliant provision of payment services (based on rules of conduct).¹⁵

Within the FMA, supervisory duties (i.e., licensing and ongoing supervision) are assigned to Department I, Banking Supervision; at the OeNB, the Financial Stability and Bank Inspections Department is responsible for the supervision of payment institutions. With the introduction of the "single point of contact" (SPOC) scheme, one contact person each at the OeNB and FMA was appointed for each individual institution.

2.4 Licensing Procedure and Ongoing Supervision

In order to take up activities as a payment institution, it is necessary to obtain a license pursuant to Article 5 Payment Services Act. The licensing procedure set forth in this act borrows heavily from the procedure defined in the Austrian Banking Act. This is espe-

¹³ See Annex 207, XXIVth legislative period, explanatory remarks on General Part; Leixner (2009) comment 2 on Article 1.

¹⁴ The FMA is responsible for supervising payment institutions as well as credit institutions, insurance companies, financial conglomerates and pension funds. Likewise, the FMA is also in charge of securities market and securities supervision.

¹⁵ Leixner (2009) comment 31 on Article 1.

cially true with regard to information requirements and the evidence to be submitted to the FMA in the course of the licensing process. Due to their limited scope of activity and the lower resulting risk propensity,¹⁶ payment institutions are subject to less extensive supervisory requirements compared to credit institutions.¹⁷

The prerequisites for licenses are set forth in Article 6 paragraph 1 in conjunction with Article 7 paragraph 1 Payment Services Act and call for the following in particular:

- A program of operations which shows the type of transactions envisaged. The license application must refer to specific payment services.¹⁸
- A business plan including a forecast budget calculation for the first three years. The practice of breaking these budget calculations down into worst-case and best-case scenarios has proven useful for licenses pursuant to the Austrian Banking Act, but to date this has not been required for applications pursuant to the Payment Services Act.
- Evidence that the license applicant holds the necessary initial capital (see below for details).
- A description of measures designed to safeguard client funds, for which two options are possible: a fiduciary solution or insurance coverage (see below for details).
- A description of the applicant's governance arrangements and internal control system, especially in connection with measures designed to prevent money laundering and terrorism financing.
- Information which demonstrates the reliability of the owners. In this

regard, Article 11 paragraph 2 Payment Services Act refers to the corresponding provisions in the Austrian Banking Act (Articles 20 et seq. in conjunction with the FMA regulation on ownership monitoring (Eigentümerkontrollverordnung));

- A description of the organizational structure of the undertaking and information on its management, legal status, articles of association, and the location of its head office.

In addition, payment institutions are required to hold sufficient own funds at all times (Article 16 paragraph 1 Payment Services Act). As for the definition of items which constitute own funds, the Payment Services Act refers to the corresponding provisions in the Austrian Banking Act (Article 23 paragraph 1 nos. 1 and 2). However, in contrast to the requirements imposed on credit institutions, the minimum own funds requirement for payment institutions is not defined as an absolute value (see Article 5 paragraph 1 Austrian Banking Act), but ranges from EUR 20,000 to EUR 125,000 depending on the payment services the institution intends to provide (see Article 15 paragraph 1 Payment Services Act). Moreover, Article 16 Payment Services Act requires payment institutions to hold additional own funds commensurate to their business activities. To this end, the Payment Services Act defines three calculation methods of varying complexity based on the risk involved. In the course of the licensing process, payment institutions are required to submit a proposal regarding the method chosen; however, the FMA may also prescribe a different method by way of

¹⁶ See Annex 207, XXIVth legislative period, preceding Article 1; Abele et al. (2007), p. 30.

¹⁷ Especially with regard to own funds requirements and liquidity requirements.

¹⁸ See Wagner and Eigner (2008), p. 644.

an administrative ruling (Article 16 paragraph 3 Payment Services Act).¹⁹

As for the measures to safeguard client funds, it is important to note that client funds received for the purpose of providing payment services and credit balances in the accounts of payment institutions do not constitute deposits, as is explicitly stipulated in Article 5 paragraph 3 Payment Services Act. Moreover, client funds received by payment institutions must not be remunerated and are not covered by deposit insurance.²⁰ However, the Payment Services Act stipulates different requirements for the safeguarding of client funds, and compliance with those rules is to be verified in ongoing supervisory activities (analysis of reporting data and financial statements, management and supervisory interviews, and on-site inspections as necessary). Payment institutions can choose one of two options for safeguarding client funds: Option A offers a fiduciary solution for client funds which are still in the payment institution's possession at the end of the day following their receipt by the payment institution, while option B provides for insurance or a similar guarantee from an insurance company or credit institution to secure client funds. Furthermore, the client funds paid to payment institutions must not be used to finance payment services.

Under Article 6 paragraph 2 Payment Services Act, the FMA is required to review license applications along with the enclosed documentation and issue an administrative ruling either granting the applicant a license or re-

jecting the license application within three months of the date on which the application is deemed complete. In this regard, the licensing procedure for payment institutions differs from the procedure applied to credit institutions in that licensing decisions under the Austrian Banking Act must be issued within six months after receipt of the complete application (general obligation of authorities to issue decisions pursuant to Article 73 paragraph 1 of the General Administrative Procedure Act (*Allgemeines Verwaltungsverfahrensgesetz*)).

The administrative ruling by which the license is granted is to be issued for the provision of specific payment services. In cases where a payment institution later wishes to expand its business activities to include additional payment services, it is necessary to apply for an expansion of the license and to fulfill the licensing requirements applicable to those services.²¹ In reviewing the application, the FMA is required to consult the OeNB in accordance with Article 7 paragraph 2 no. 1 Payment Services Act. In addition, the OeNB is responsible for performing a business analysis of the license application. Such analyses are performed by the OeNB's Off-Site Banking Analysis Division with due consideration of insights from payment systems oversight activities, which are handled by the OeNB's Financial Markets Analysis and Surveillance Division.²² The OeNB passes the results of its analysis on to the FMA, which then issues a decision on the license application with due consideration of other legal requirements.

¹⁹ For detailed information, see Gapp and Landschützer (2009), p. 116.

²⁰ For detailed information, see Leixner (2009), comment no. 9 on Article 5.

²¹ See Leixner (2009), comment no. 1 on Article 5.

²² In this context, it is important to note that the supervisory duties defined in the Payment Services Act are without prejudice to the oversight of payment systems, which, in line with the fourth indent of Article 105(2) of the Treaty on European Union, is a task to be carried out by the European System of Central Banks. In Austria, this duty has been assigned to the OeNB under Article 44a Nationalbank Act since the year 2002.

In formal terms, the licensing procedure for payment institutions therefore does not differ substantially from the procedure defined under the Austrian Banking Act. However, given the narrower scope of business activities and lower documentation requirements, the licensing procedure will generally be easier for payment institutions compared to credit institutions. The fees charged for licenses under the Payment Services Act are also lower than those applicable to banking licenses. According to the FMA Fee Regulation (Section 2 no. 33a), the fee for a license pursuant to the Payment Services Act is EUR 3,000. In contrast to the fees charged in e.g. Germany or the United Kingdom, this fee is not based on the scope of the license application (i.e. the number of different payment services envisaged in the application). Likewise, license applications under the Austrian Banking Act are liable to a flat fee of EUR 4,000 (part 2 chapter 2 no. 6 FMA Fee Regulation). Practical experience to date has shown that the EUR 3,000 fee has a deterrent effect on potential license applications and is criticized as excessively high.²³ Critics have also found fault in the fact that the FMA recommends the appointment of two directors at payment institutions on the basis of its interpretation of Article 7 paragraph 1 nos. 9 to 15 Payment Services Act. This interpretation is based on the wording of the act, which consistently mentions multiple directors, and on an analogy to the Austrian Banking Act (see Article 5 Austrian Banking Act). From a business perspective, this is certainly a welcome

recommendation, as it ensures that the four-eye principle is upheld.

2.5 European Passport, Freedom of Establishment and Freedom of Cross-Border Service Provision

Under Article 25 PSD, payment institutions licensed in one Member State of the European Economic Area (the home Member State as defined in Article 3 no. 1 Payment Services Act) may operate in a host Member State (as defined in Article 3 no. 2) on the basis of the freedom of establishment and of cross-border service provision. Payment institutions which wish to exercise this right pursuant to Article 12 Payment Services Act are to communicate their intentions to the competent authorities in their home Member State; in turn, the authorities in the home Member State are required to inform the competent authorities in the host Member State accordingly within one month of receiving such a notification. This is known as the notification procedure or the “European passport,” which has created uniform requirements for market entry and thus a level playing field for all providers of payment services in the EEA.²⁴

The supervisory requirements imposed on such a payment institution are the responsibility of the competent authorities in the institution’s home Member State, while responsibility for monitoring compliance with obligations in the interest of the client is assigned to the host Member State. Under the freedom of cross-border service provision, responsibility for supervision of the payment institution is assigned

²³ This criticism is largely underpinned by comparisons to the fee for a full banking license, which is not markedly higher.

²⁴ See Hohensinn (2008), p. 189; Karasu (2009).

entirely to the competent authority in the home Member State.²⁵

The Member States are required to maintain publicly available registers of authorized payment institutions. In Austria, the FMA maintains this public register, in which all payment institutions established in Austria must be entered and which is available on the FMA's website.²⁶ The register is updated on a regular basis and also contains a directory of payment institutions authorized to provide payment services in Austria on the basis of the European passport (see Article 10 Payment Services Act).

2.6 Reporting Requirements for Payment Institutions

The PSD generally does not stipulate any ongoing reporting obligations regarding the business activities of payment institutions. In the interest of financial stability, however, the Austrian legislature empowered the FMA to issue regulations on reporting requirements in Article 5 paragraph 5 no. 4 and Article 20 paragraph 5 Payment Services Act. On this basis, the FMA issued the Payment Institution Reporting Regulation (*Zahlungsinstitute-Meldevordnung*) and the Regulation on the Annex to the Audit Report for Payment Institutions (*Verordnung über die Anlage zum Prüfbericht für Zahlungsinstitute*). According to those regulations, payment institutions – like credit institutions – are required to submit data from their balance sheets and income statements as well as information for the assessment and monitoring of risks to payment institutions, information for the verification of compliance with own funds requirements, company

master data, financial statements and an annex to the audit report. Moreover, payment institutions are required to report statistical information on the payment services provided (e.g. number of payment cards issued, number and values of transactions, availability, etc.) on a quarterly basis. This information is necessary in order to enable a comprehensive survey of payment institutions' risks; in this respect, they represent a risk statement of sorts. In practice, these reports are submitted in standardized electronic form to the OeNB, which provides the FMA with access to the data by way of a joint database.

3 Current Significance of Payment Institutions on the Austrian Financial Market

3.1 Situation in Austria

In Austria, no licenses have been issued to payment institutions since the Payment Services Act went into effect on November 1, 2009. Up to now,²⁷ only one license application has been submitted to the FMA, and that application concerned payment remittance services as defined in Article 1 paragraph 1 no. 5 Payment Services Act.

In addition, the FMA has received three license applications in connection with the transitional provision under Article 75 paragraph 2 Payment Services Act. The provision in question stipulates that undertakings which already began providing payment services pursuant to Article 1 paragraph 2 no. 4 or 6 Payment Services Act prior to December 25, 2007, will be allowed to continue those business activities without a license for the time being. As certain forms of payment instruments (no. 4) as well as digital payments (no. 6)

²⁵ See Annex 207, XXIVth legislative period, explanatory remarks on section 2.

²⁶ www.fma.gv.at/cms/site/EN/einzel.html?channel=CH0531

²⁷ As at April 11, 2010.

were not entirely covered by licensing obligations in Austria before November 1, 2009 – and in order to prevent companies which already pursue such activities from operating without a license – the act provides for a transition period of 18 months (i.e. until April 30, 2011). During the transition period, however, the authorization to provide these services is limited to Austria and does not allow cross-border activities based on the European passport. This is subject to the requirement that the undertakings in question demonstrate compliance with the applicable provisions for the prevention of money laundering and terrorism financing.²⁸ In order to exercise this privilege under the transitional provision in Article 75 paragraph 2 Payment Services Act, providers were required to submit a license application to the FMA by October 31, 2009, at the latest. The licensing procedures concerning those three providers are currently underway.

Furthermore, under Article 75 para. 1 Payment Services Act, credit institutions which are only authorized to provide payment remittance services pursuant to Article 1 paragraph 1 no. 23 Austrian Banking Act and which will lose that license on May 1, 2011 due to the implementation of the Payment Services Act may also submit license applications to the FMA. The explanatory remarks on the legislative bill indicate that those credit institutions will undergo a more lenient licensing procedure,²⁹ but in practice this can only refer to the use of data previously reported under the reporting regulations issued in connection with the Austrian

Banking Act).³⁰ As providers already licensed under the Austrian Banking Act also have to fulfill the licensing requirements under Articles 6 and 7 Payment Services Act ex lege, the FMA is also obliged to request and review all legally required documents and information in those licensing procedures. To date, no license applications based on Article 75 paragraph 1 Payment Services Act have been submitted in Austria. However, in contrast to the deadline stipulated under Article 75 paragraph 2 Payment Services Act, the credit institutions in question are allowed to submit applications until April 30, 2011. Therefore, it is conceivable that one or more of the five credit institutions which currently only hold a license pursuant to Article 1 paragraph 1 no. 23 Austrian Banking Act may still exercise their privileges under this transitional provision.

Strictly speaking, however, it is not possible to describe cases subject to the transitional provisions as “new licenses” given the requirement of prior operations in the relevant business areas. Under a strict definition of new license applicants (i.e. companies which plan to provide financial services for the first time), only one such application has been submitted to the FMA. However, the FMA has received numerous inquiries from potential applicants, indicating that more applications can be expected in the future.

3.2 EEA Payment Institutions Operating in Austria

At present, 29 EEA payment institutions have notified services in Austria pursuant to Article 12 Payment Ser-

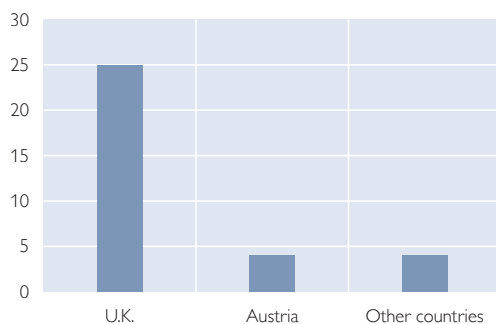
²⁸ See Annex 207, XXIVth legislative period, explanatory remarks on Article 75 paragraph 2.

²⁹ See Annex 207, XXIVth legislative period, explanatory remarks on Article 75 paragraph 1.

³⁰ FMA Regulation on Asset, Income and Risk Statements (*Vermögens-, Erfolgs- und Risikoausweis-Verordnung*); FMA Regulation on Proof of Compliance with Regulatory Standards (*Ordnungsnormenausweis-Verordnung*); FMA Regulation on Financial Statements and Consolidated Financial Statements (*Jahres- und Konzernabschluss-Verordnung*).

Chart 1

Payment Institutions Operating in Austria¹



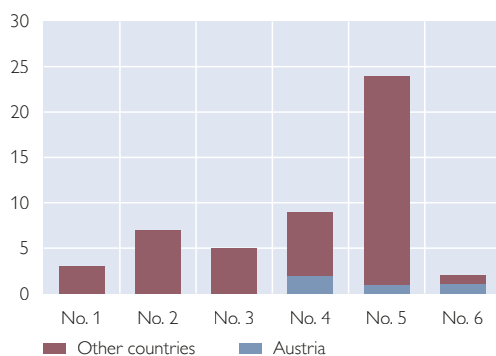
Source: OeNB.

¹ Including license applications pending FMA approval.

(no. 2) and for payment instruments (no. 4), with seven licensed institutions each, while only one payment institution is authorized to provide digital payment services (no. 6). It is striking that 20 out of the 29 payment institutions only offer one payment service each; none of them are authorized to provide all of the payment services defined (nos. 1 to 6). This can probably be attributed to the fact that the individual payment services defined in the Payment Services Act are rather diverse and thus require very different technical infrastructures.

Chart 2

Types of Payment Services Offered by Payment Institutions from Austria and Other EEA Countries



Source: OeNB.

vices Act and are listed in the FMA's public register of payment institutions. 25 of those institutions are established in the United Kingdom, 2 in Ireland, 1 in Denmark and 1 in Slovakia (see chart 1). A vast majority (23 in total) of those payment institutions hold licenses to provide payment remittance services as defined in Article 1 paragraph 2 no. 5 Payment Services Act. This is followed by licenses for payment transactions

3.3 Austrian Payment Institutions Operating in EEA Member States

As mentioned above, the FMA has not yet issued a license to a payment institution with its place of establishment and head office in Austria. Accordingly, no Austrian payment institutions are currently operating in other EEA Member States.

3.4 Excursus: Current Situation in Selected EEA Member States

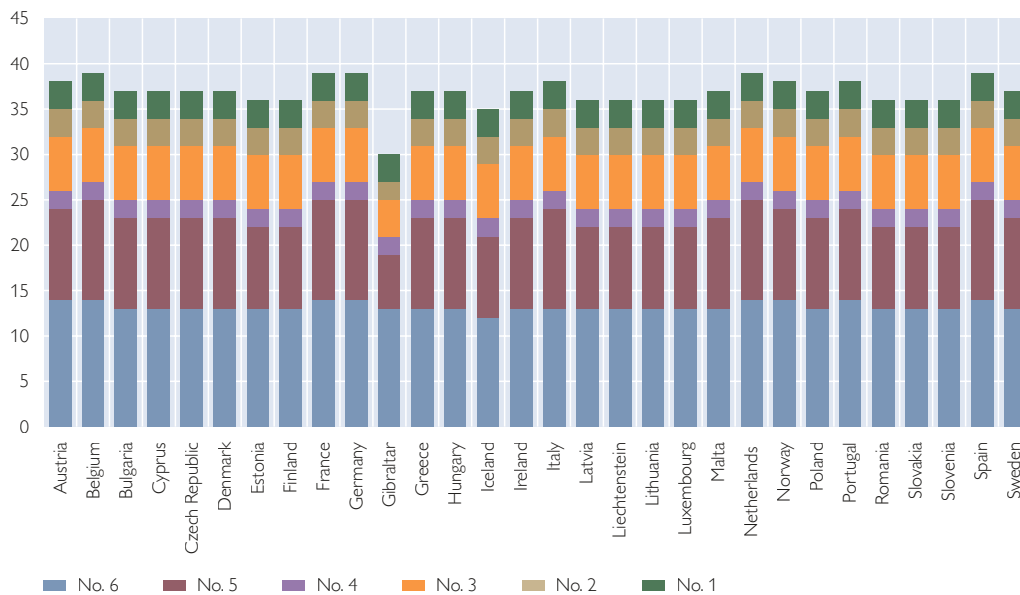
In light of the situation in Austria – namely the absence of domestic payment institutions coupled with a large number of EEA payment institutions operating under a European passport – this section provides an overview of the corresponding situation in selected EEA Member States (Germany, France, Netherlands).

In Germany, the PSD was implemented by way of the Payment Services Oversight Act (*Zahlungsdiensteaufsichtsgesetz*),³¹ which entered into effect on October 31, 2009. To date,³² seven payment institutions established in Germany have received authorizations

³¹ *Payment Services Oversight Act as published in Federal Law Gazette I of July 25, 2009, p. 1506.*

³² *As at April 11, 2010.*

Chart 3

Cross-Border Activities of U.K. Payment Institutions Notified in Austria

Source: OeNB.

from the Federal Financial Supervisory Authority³³ (BaFin) to provide payment services pursuant to section 8 of the Payment Services Oversight Act. The authorizations issued to those payment institutions cover all of the payment services defined in the Payment Services Oversight Act.³⁴ In addition, 32 EEA payment institutions have notified their services in Germany on the basis of the European passport.

The situation in France and the Netherlands is similar to that in Austria. To date, no payment institutions established and headquartered in France have been issued a license by the Commission bancaire (which will be renamed Autorité de contrôle prudentiel).³⁵ At the same time, 22 payment institutions from EEA Member States

have notified services in France on the basis of the European passport; 19 of those institutions are also authorized to provide payment services in Austria based on the European passport. Similarly, De Nederlandsche Bank has not yet licensed any Dutch payment institutions. All 14 of the EEA payment institutions notified in the Netherlands are also authorized to provide payment services in Austria on the basis of the European passport.

4 Conclusions

4.1 Summary

The PSD (and its transposition into national law) was expected to contribute to the opening of payment services markets. The definition of payment institutions as new market participants

³³ Germany's public register of payment institutions can be found at www.bafin.de/clin_152/nn_722764/SharedDocs/Artikel/DE/Verbraucher/Recherche/db___register___zag.html

³⁴ The payment services defined in section 1 (2) of the Payment Services Oversight Act basically match those defined in Article 1 paragraph 2 of the Austrian Payment Services Act; only the order is reversed in the case of nos. 5 and 6.

³⁵ France's public register of payment institutions is available at www.banque-france.fr/fr/supervi/agrement/popetscred/li.htm

was meant to create a level playing field between nonbanks and banks in the competitive provision of payment services. Moreover, the new legislation was designed to create a uniform legal framework for all payment services, regardless of whether they are provided domestically or across EEA borders. The motive for standardizing the regulations applicable to functionally equivalent products and services was to mitigate distortions of competition between various products and providers.³⁶

The Austrian market, too, was expected to benefit from increased dynamics and more competition between payment institutions and credit institutions in the payment services segment, which had been highly lucrative for credit institutions.³⁷ In addition, new players were expected to enter the market,³⁸ especially as Article 5 paragraph 2 no. 3 Payment Services Act allows payment institutions to act as hybrid institutions which also offer other products or services in addition to financial services. In this regard, the PSD was mainly designed to account for telecommunications companies³⁹ which can handle payments between their customers (consumer to consumer or business to consumer). Furthermore, the new legal framework was intended to enable small and medium-sized banks in particular to focus on their core business areas and to outsource payment-related activities to payment institutions at the national as well as the European level.⁴⁰

However, as mentioned above, new (Austrian) payment service providers have not entered the market as expected, nor have we observed an increasing number of providers from other industries entering the market (e.g. tax consultants, Internet service providers, technical service providers or retail businesses which may decide to offer payment services themselves). Moreover, none of the credit institutions in Austria have opted to outsource or restructure their activities in this field. Since the Payment Services Act went into effect, no Austrian banks have relinquished their licenses or outsourced payment-related activities to payment institutions.

Only those Austrian service providers which had previously operated in the field of payment services and did not have a banking license (e.g. operators of terminals,⁴¹ data processing services, acquirers, telecommunication service providers, etc.) have applied for the relevant license under the transitional provision pursuant to Article 75 paragraph 2 Payment Services Act.

Although numerous inquiries have been received from potential license applicants, the Austrian market has shown only limited interest in obtaining licenses under the Payment Services Act; strictly speaking, only one new license has been requested. At the same time, 29 payment institutions from other EEA countries are now operating in Austria on the basis of the freedom to provide services. The vast majority

³⁶ See Annex 207, XXIVth legislative period, preceding Article 1; Schrank and Marx-Rajal (2009), p. 808.

³⁷ See Elsenhuber and Schimka (2005), pp. 73 f., Peintner (2009) or Zuffer (2009).

³⁸ See Elsenhuber and Schimka (2005), pp. 73 f. or Peintner (2005), p. 377.

³⁹ See Annex 207, XXIVth legislative period, explanatory remarks on Article 5 paragraph 2 no. 3; Leixner (2009), comment no. 3 on Article 5.

⁴⁰ See Karasu (2009).

⁴¹ Independent cash dispenser service providers which only provide customers with cash and usually do not belong to a banking network (e.g., cash dispensers in supermarkets or nightclubs) are exempt from the Payment Services Act. See Annex 207, XXIVth legislative period, explanatory remarks on Article 2 paragraph 3 no. 15.

of those cross-border payment institutions are established in the United Kingdom and have notified services in nearly all EEA Member States (see chart 3). It therefore appears that only U.K. service providers have shown interest in operating as payment institutions. Furthermore, the public registers maintained by EEA Member States show that it is almost exclusively the same 25 U.K. service providers which offer cross-border services in each country. Information on the economic weight (transaction volumes, market shares, etc.) of those providers is not yet available, but their significance in Austria currently appears to be rather low. Therefore, it seems that those companies have simply registered throughout the EU as a matter of routine and do not constitute serious, sizable competitors on the Austrian market.

4.2 Assessment and Outlook

At least as far as the Austrian market is concerned, the European legislature's expectations with regard to the opening of the market and increased competition have not yet been fulfilled. In the six months or so since the Payment Services Act went into effect, no fundamental structural changes have arisen

on the Austrian payment services market. New domestic competitors to the banking sector have not emerged on the market, but 29 cross-border payment institutions, mostly from the U.K., have been authorized to provide payment services in Austria.

The development of new payment products, services and infrastructures expected from the PSD⁴² is still advancing, especially with regard to the relatively new innovations in the field of payment instruments (such as pre-paid cards and contactless payments⁴³ as well as overlay payments⁴⁴) but these advances have not primarily been driven by newly established payment institutions. However, the implementation of the PSD did achieve one of the European legislature's objectives: Financial service providers are now required to comply with uniform standards throughout the Community. However, this also gives rise to the fundamental question of whether the mere standardization of the legal framework is sufficient to bolster competition in the payments industry. There are probably other fundamental economic barriers which stand in the way of enhancing cross-border competition and which can hardly be dismantled by legislative means alone.⁴⁵

⁴² See Karasu (2009).

⁴³ This technology allows users to transfer small amounts "in passing" by means of radio frequency identification (RFID) technology.

⁴⁴ In overlay payment services, independent service providers act as intermediaries between consumers and banks in online shopping transactions. This business model relies on security features such as secret PINs and TANs which customers must enter in order to use payment services online.

⁴⁵ See Schaefer (2008, pp. 23 f.).

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Assessing the Relevance of Austrian Investment Companies and Mutual Funds for Financial Stability

This paper looks at the role Austrian investment companies and the mutual funds managed by them play in the context of financial stability. At the end of the third quarter 2009, the 30 Austrian investment companies (of which 5 manage real estate funds) had invested around EUR 114 billion in the market. Given the repercussions arising from interlocks between investment companies and other financial intermediaries (such as credit institutions, insurance companies, pension funds and severance funds) in the event of a financial crisis, this study explores the underlying risks and makes an attempt at quantifying the mutual dependencies, focusing above all on market and reputational risks.

Areas that are relevant for financial stability include the contribution of investment companies to the profitability of banks and the potential risks related to the role of custodian banks. Furthermore, the distribution and administration of mutual funds issued by investment companies affiliated with banks is a source of commission income for the banking sector. Finally, the use of mutual funds (in unit-linked life insurance plans) as repayment vehicles for foreign-currency bullet loans may cause funding gaps in the event of poor fund performance, which could increase the credit risk exposure of the banks involved.²

JEL classification: G20

Keywords: Mutual funds, financial stability, investment companies

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1 Introduction

Under the Austrian Investment Funds Act, a mutual fund is a portfolio of assets invested collectively with a view to risk diversification. Investors become co-owners of the given portfolio of securities and/or money market instruments and/or other liquid financial assets by buying mutual fund shares, which they may resell at the applicable repurchase price. A mutual fund may issue either “unit certificates evidencing a claim to annual distributions of annual income to the unit holders (income-distribu-

ting unit certificates)” or “unit certificates not evidencing a claim to distributions of annual income to the unit holders (income-retaining unit certificates).”³ Domestic companies managing mutual funds must be licensed as banks, which means that their operations are subject to the Austrian Banking Act and to banking supervision.⁴ Among other things, the Austrian Investment Funds Act distinguishes between retail and institutional funds, with investment in the latter being limited to no more than ten investors and subject to a minimum invest-

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² See “Extension of the FMA Minimum Standards for Granting and Managing Foreign Currency Loans and Loans with Repayment Vehicles of 16 October 2003; Extension of 22 March 2010” (www.fma.gv.at/cms/site/attachments/5/2/6/CH0217/CMS1272028701173/fma-fxtt-ems_final_en.pdf).

³ Article 22 paragraph 2 no. 7 Austrian Investment Funds Act.

⁴ The activity of managing mutual funds (under the Austrian Investment Funds Act) and real estate funds (under the Austrian Real Estate Investment Funds Act) qualifies as a banking activity under Article 1 paragraph 1 nos. 13 and 13a of the Austrian Banking Act and must be licensed by the Financial Market Authority.

Refereed by:
Robert Hellwagner,
Austrian Financial
Market Authority

ment of EUR 250,000 for natural persons.⁵

When the framework for financial market supervision was reformed in Austria in 2008, the OeNB's financial stability mandate was spelled out explicitly in Article 44b of the Federal Act on the Oesterreichische Nationalbank: *"In the public interest, the Oesterreichische Nationalbank shall monitor all circumstances that may have an impact on safeguarding financial stability in Austria."* To fulfil this responsibility, the OeNB gathers individual data from mutual funds⁶ and investment companies, which enable it to undertake comprehensive stability analyses.⁷

At the end of September 2009, 25 domestic investment companies and 5 domestic real estate investment companies were managing a total of 2,224 securities mutual funds and 6 real estate mutual funds. The 5 real estate investment companies had total (balance sheet) assets of EUR 35 million at the end of Q3/09, and between them they had EUR 1.8 billion under management, which is a share of 1.3% of the entire assets under management by all 30 companies. In other words, their impact on aggregate results is very limited. In the following and for the sake of simplicity, we generally refer to funds and investment companies irrespective of the different underlying legal provisions.

Taken together, the total (balance sheet) assets of all investment companies added up to almost EUR 600 mil-

lion at the end of Q3/09, which corresponded to just 0.06% of the aggregated unconsolidated total assets of the Austrian banking system. Yet this small ratio is put into perspective by the net asset value (NAV) those companies have invested in the market on behalf of mutual fund buyers, namely EUR 114 billion, which is sufficiently high to be of potential relevance for the stability of the Austrian financial system. Typical buyers of mutual funds include households, insurance companies, pension funds, severance funds as well as credit institutions. Given the high degree of integration between investment companies and other financial intermediaries, the purpose of this paper is to identify the key risks for the stability of the Austrian financial market and to analyze potential channels of contagion. Unless indicated otherwise, the data for this study relate to the end of the third quarter of 2009. In section 2, we provide a summary overview of the latest developments in the Austrian mutual fund market. Section 3 highlights the interlinkages with, and potential channels of contagion to, banks and other financial intermediaries. Section 4 concludes with a summary of key results.

2 Latest Developments in the Austrian Mutual Fund Market

Having invested a consolidated NAV of approximately EUR 114 billion in the market on behalf of investors at the end of Q3/09, Austrian investment compa-

⁵ In this study we refer only to products that are covered by either the Investment Funds Act or the Real Estate Funds Act, i.e. we disregard closed real estate funds, private equity funds, dividend-right certificates of collective investment schemes other than investment funds, etc. Similarly, we do not refer to foreign mutual funds with sales licenses in Austria under Articles 30 and 36 of the Investment Funds Act.

⁶ In line with the Regulation of the ECB concerning statistics on the assets and liabilities of investment funds (ECB/2007/8).

⁷ Statistical information is collected on a security-by-security basis for securities held by funds and on an aggregate basis for all other assets (such as deposits, financial derivatives and property). Since investment companies must be licensed as banks, they are also subject to the reporting requirements imposed on banks, which provides the OeNB with quarterly data on the structure and profitability of such companies.

nies play a prominent role in the Austrian financial market. In total, i.e. including the assets invested in Austrian mutual funds, Austrian investment companies were managing EUR 137 billion.⁸ Austrian mutual funds thus accounted for 2% of the European mutual fund market, which is the second-biggest in the world (with 38% of global assets) after the United States (44%).

At the end of Q3/09, 25 investment companies plus 5 real estate investment companies managing a total of 2,230 mutual funds were subject to supervision in Austria.⁹ Following a steady rise in the number of mutual funds from 1,893 in Q4/03 to 2,337 in Q1/08, those numbers have since gone down by 4.6% (107 mutual funds) until the end of Q3/09. While this decline reflects a combination of factors, the merger of commercially unviable smaller funds and the unwinding of funds with unsatisfactory returns appear to have been the driving factors.¹⁰ The lion's share – 85% of the consolidated NAV of mutual funds – is held by domestic investors, with households and nonprofit institutions serving households (EUR 35 billion) as well as insurance companies and pension funds (EUR 33 billion) being the biggest domestic investor groups.

Annual growth of assets under management averaged 4% from end-

2003 until Q3/09.¹¹ However, this period was highly heterogeneous, including both boom years (2005: +25%) as well as the latest financial crisis (2008: –23%), which clearly took its toll on the mutual fund industry and visibly affected investor confidence.¹² In a quarterly comparison, aggregated funds under management dropped seven consecutive quarters from Q3/07 to Q1/09, whereas annual growth rates have been negative since Q4/07. Interestingly, institutional fund assets (+10.4% growth per annum since 2004) have recorded higher growth rates than retail fund assets (+0.7%) every single year since 2004. This pattern was particularly pronounced in 2008, when retail fund volumes contracted by 30% whereas institutional fund assets declined by just 7%. As a result, the share of institutional funds in total funds under management increased further during the crisis, jumping from 28% in mid-2007 to 38% in Q3/09. Besides possible performance differentials, this increase most likely reflects the fact that investors in institutional funds shifted assets between their funds, while retail investors liquidated some of their mutual fund holdings and invested the proceeds in government-guaranteed savings deposits.

For reasons of data availability over the entire review period, an assessment

⁸ The difference between the assets actually invested in the market (consolidated net asset value) and assets under management results from domestic mutual fund shares/units that are held by Austrian mutual funds themselves. For instance, the assets of a pure fund-of-funds are disclosed under assets under management, but have not been invested directly in the market. Thus, the change in assets under management reflects not only the performance of mutual funds and net capital inflows but also changes in fund structures.

⁹ At the same time, 5,234 foreign funds were licensed for sale in Austria (source: VÖIG (Association of Austrian Investment Companies)), and Austrian investors had placed EUR 26.36 billion with them (source: OeNB).

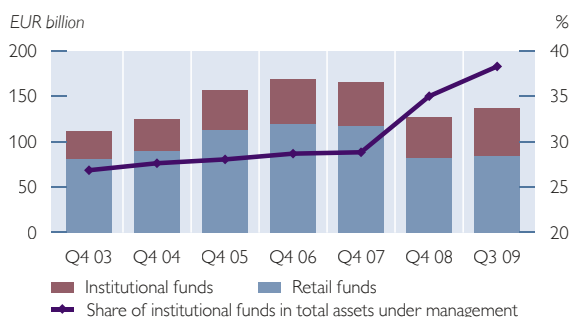
¹⁰ The profitability of investment companies is discussed in section 3.2.

¹¹ This figure is a compound annual growth rate, which corresponds to an aggregate rise of assets under management by 23.7%. In the European market, assets under management increased by 43.9% to EUR 6,840 billion over the same period of time.

¹² See also Probst and Sedlacek (2009).

Chart 1

Development of Mutual Funds' Assets under Management



Source: OeNB.

by category of funds has to be limited to retail funds: It is noteworthy that from Q4/03 to Q3/09, both equity and bond funds suffered a decline in assets under management (-2.3% and -0.8% per annum, respectively), whereas money market funds¹³ and mixed funds grew during that period ($+4.8\%$ and $+3.3\%$ per annum, respectively). Real estate and hedge funds, which had still played a negligible role among Austrian retail funds at end-2003, became increasingly popular with investors over the years, accounting for respectively EUR 1.7 billion and EUR 527 million, at the end of Q3/09.¹⁴

As of the third quarter of 2009, institutional funds and retail funds reflected rather a mixed investor behavior: While the majority of institutional funds were classified as mixed funds (51%), the bulk of retail funds were classified as bond funds (54%). Fur-

thermore, as much as 39% of institutional funds were classified as bond funds and only 8% as equity funds, whereas 24% of retail funds were classified as mixed funds and as much as 15% as equity funds.¹⁵ In terms of geographical allocation, more than three-quarters of the consolidated NAV of Austrian mutual funds were invested abroad (53% in other euro area countries, 24% in the rest of the world) and less than one-quarter in Austria itself.

An analysis of the factors that explain the change in value of assets invested in the market shows that both investors' appetite¹⁶ as well as the funds' performance and income started to decline as early as 2006, even before the financial crisis erupted. This trend continued through 2008, with net sales of fund shares by investors in 2007, 2008 and Q1/09 as well as price losses being recorded in 2008 and in Q1/09. In Q2/09 and Q3/09, the consolidated NAV of mutual funds was rising again. On balance, it increased by a total of 8% in the first three quarters of 2009 to EUR 114 billion, which was nonetheless considerably below the peak recorded in Q2/07 (EUR 145 billion). The recent recovery reflected above all the rally on stock exchanges that started in March 2009, while the inflow of new funds from investors remained subdued. Price gains and in-

¹³ Reported in line with regulation ECB/2001/13.

¹⁴ In this study, the term "hedge fund" covers only funds of hedge funds which are governed by the Austrian Investment Funds Act and which are in line with the definition given in the Regulation of the ECB concerning investment funds (ECB/2007/8), for which reporting began with data for December 2008. Therefore, those funds represent only part of the Austrian hedge fund market. In general, reclassifications of funds over recent years have distorted time series, which had an impact on some of the growth rates indicated. In particular, some bond funds were reclassified as money market funds and some hedge funds were reclassified as other funds following the implementation of the ECB's regulation concerning investment funds at the end of 2008.

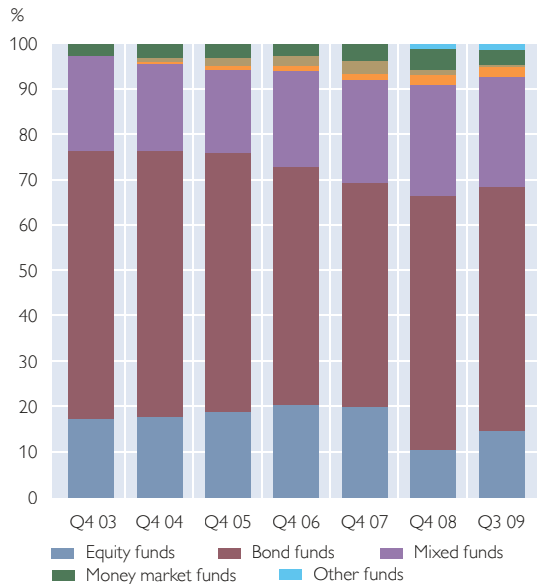
¹⁵ Given that institutional funds tend to be able to change their asset allocation more flexibly than retail funds, changes in asset allocation strategies need not necessarily lead to a change in the fund categories.

¹⁶ Measured in terms of the net balance of newly issued and repurchased mutual fund shares.

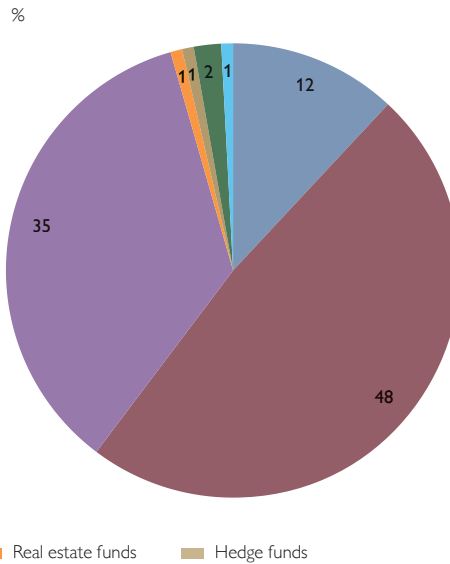
Chart 2

Allocation of Assets among Individual Fund Categories

Categories of Retail Funds



Assets under Management by Retail and Institutional Funds in Q3 09



Source: OeNB.

come increased the consolidated NAV of mutual funds by EUR 9.0 billion in the first nine months of 2009, while net capital inflows added just EUR 950 million. Thus, investor confidence in domestic mutual funds is returning only gradually and slowly after the crisis.

3 Interlocks with Other Financial Intermediaries and Possible Repercussions on Financial Stability

The strong ownership and asset interlocks of investment companies with other financial corporations, such as credit institutions, insurance companies, pension funds and severance funds, may give rise to spillovers among financial market agents that are of relevance for the stability of the Austrian financial market. This aspect

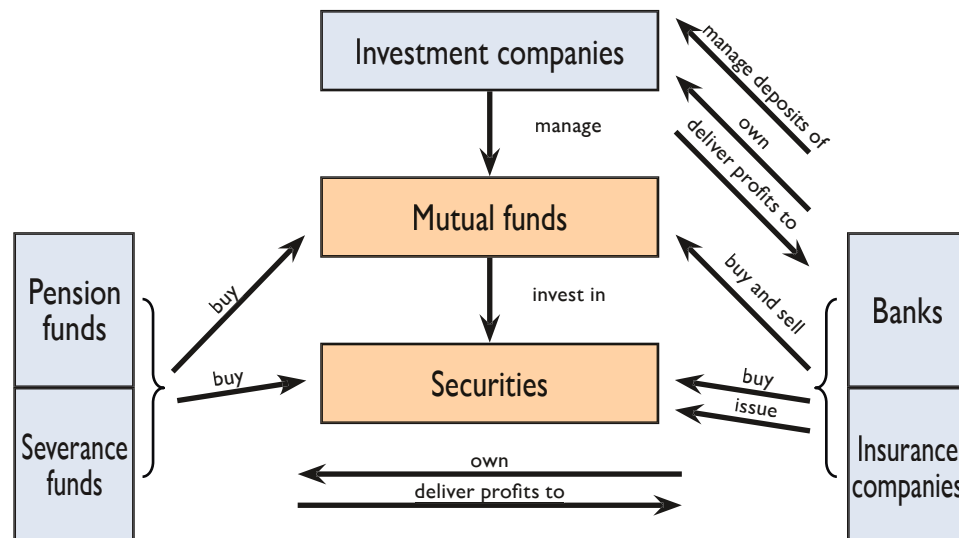
will be dealt with in the following section.

3.1 Mutual Contagion Risks of Banks, Investment Companies and Mutual Funds

At the end of September 2009, domestic banks held mutual fund shares worth some EUR 9.9 billion, which is close to 1% of total unconsolidated assets of the Austrian banking system. In turn, close to 7% (EUR 7.5 billion) of the consolidated NAV of Austrian mutual funds was invested in (debt and equity) securities issued by Austrian credit institutions.¹⁷ These EUR 7.5 billion represent roughly 40% of the mutual fund assets invested in domestic securities. This does not imply, however, that investment companies have invested a disproportionately high share with banks, as banks accounted for almost

¹⁷ National accounts sector 122 in line with ESA 95.

Interlocks between Investment Companies and Other Financial Intermediaries



50%¹⁸ of (debt and equity) securities issued by Austrian entities that were outstanding at the end of Q3/09.

At the same time, a comparison of individual investment companies shows that companies which are not closely affiliated with any of the domestic banks have smaller investment interlocks with the banking sector. In this context, price losses of domestic bank instruments may have a material impact on the performance of Austrian mutual funds and reinforce liquidity constraints when there is an excess of bank instruments on offer (danger of fire sales). In the event of a banking crisis, investment companies affiliated with banks thus face not only a reputational risk resulting from ownership interlocks and brand association, but also the risk that price and liquidity losses suffered by bank instruments may feed through to their mutual funds. Hence a combination of factors may trigger capital outflows from investment compa-

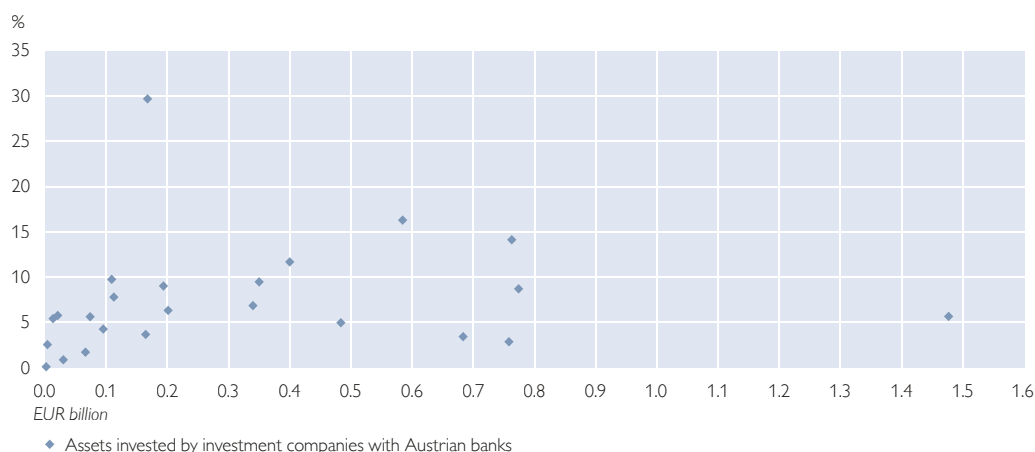
nies, which would add to the predicament of the investment company and its parent bank.

Investment companies subject to supervision in Austria (see the corresponding data points in chart 4) have different exposures to bank instruments. As is evident from chart 4, there is one investment company which has invested as much as 30% approximately of its assets with domestic banks. In this respect, investments made with parent banks might give rise to a conflict of interest if fund managers were to sell bonds or shares of their parent bank, or to remove deposits from their parent bank, in the interest of their clients upon evidence of problems at the parent bank. In order to limit this exposure, the Austrian Investment Funds Act stipulates that “an investment fund may not combine investments in securities or money market instruments issued by, deposits made with, and/or exposures arising from OTC derivative transactions to a

¹⁸ Source: OeNB issuance statistics for September 2009.

Chart 4

Assets under Management by Investment Companies Invested with Austrian Bank Instruments¹



Source: OeNB.

¹ In absolute figures (EUR billion) and as a percentage share of volume invested by each investment company; excluding investment companies that have not invested in bank instruments.

single credit institution in excess of 20 per cent of its assets.”¹⁹

Another way in which banks may be exposed to mutual funds is through capital guarantees they may have assumed for such funds. In Austria, approximately EUR 4.8 billion have been invested in capital-guaranteed mutual funds, with banks having offered guarantees for as much as EUR 3.7 billion thereof.²⁰ At the same time, the corresponding exposure of banks is limited, as most mutual funds come with quantitative models that will cause assets to be shifted into fixed-income securities before the guaranteed amount of capital becomes underfunded.²¹ All that remains in this case is the overnight risk, which is defined as the price loss for invested securities within the period in which the investment may not be changed; but the overnight risk is typically small.

To sum it up, we can say that adverse market developments may cause additional negative effects and feedback effects as a result of strong interlocks between banks and investment companies.

3.2 The Importance of Investment Company Performance for the Banking Sector

Most Austrian investment companies (80% measured in terms of balance sheet assets) are subsidiaries of Austrian banks, which benefit from their stakes in those companies one way or other. On the one hand, parent banks stand to receive profit transfers from affiliated investment companies; the contribution of such transfers to the aggregate annual surplus of the Austrian banking sector came to 2.6% in Q3/07, close to 2% in Q3/08, and close to 5% in

¹⁹ Article 20 paragraph 3 no. 8d Austrian Investment Funds Act.

²⁰ The remainder of guarantees have been provided by foreign banks (EUR 0.8 billion) and insurance companies (EUR 0.4 billion).

²¹ For example, a value protection strategy such as a constant proportion portfolio insurance.

Q3/09.²² This implies that the banking industry suffered a sharper decline in profitability in recent years than investment companies. When we take the annual surplus of investment companies that are affiliated with domestic banks as an upper limit for approximating profit transfers, investment companies may have transferred up to EUR 44 million to the Austrian banking system in 2009 – which means that they had a rather limited impact on the stability of Austrian banks in this respect. On the other hand, banks earn commissions when they sell shares in mutual funds (typically those issued by their affiliated investment companies), and the fees for trading securities and holding securities in safe custody boost the income of the respective parent

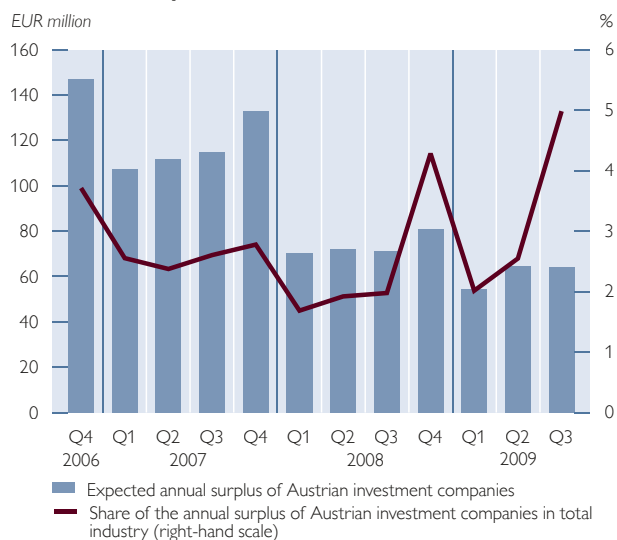
banks, which tend to do most of the trading. Thus, the profitability of domestic investment companies contributes to the stability of the Austrian banking sector.

The UCITS IV directive,²³ which was adopted in 2009 and is to be transposed into national law by 2011, commits EU Member States to introducing best execution principles which will ensure that investment companies conduct their business activities in the best interests of the funds they manage. The best execution policies are going to fuel competition for the services of custodian banks and brokers (which have often been provided by one and the same credit institution so far) and may thus possibly limit the profitability of custodian banks and brokers.

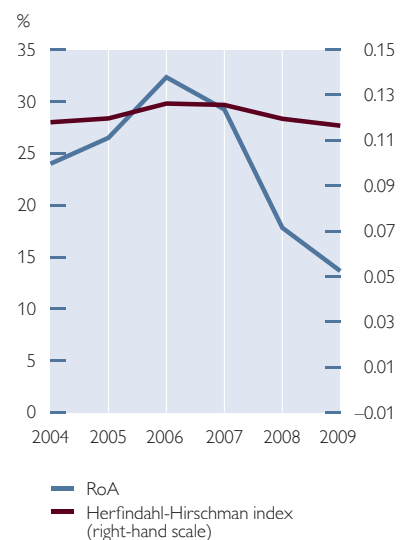
Chart 5

Austrian Investment Companies: Profitability and Competition

Annual Surplus of Investment Companies and Shares in Total Industry



Return on Assets and Herfindahl-Hirschman Index



Source: OeNB.

²² Annual surplus of all domestic investment companies in Q3/09: EUR 64 million, aggregate annual surplus of the Austrian banking sector as a whole: EUR 1.3 billion.

²³ Directive of the European Parliament and of the Council of 13 July 2009 on the coordination of laws, regulations and administrative provisions relating to undertakings for collective investment in transferable securities (UCITS). This directive does not cover real estate funds.

The profitability of investment companies has been limited already in the past through the relatively high degree of competition in the mutual fund market. In particular, measured in terms of the Herfindahl-Hirschman index²⁴ the concentration of the mutual fund market (excluding companies managing real estate funds) was rather low in the third quarter of 2009 with around 0.12, and has been going down since 1998. Given the relatively high number of investment companies with market shares of between 1% and 4%, the fund market is indeed competitive. At the same time, more than 50% of assets under management are concentrated at three investment companies.

The return on assets (RoA) of investment companies dropped sharply from more than 30% in 2006 to below 15% in 2009, and the Herfindahl-Hirschman index declined slightly over the same period.

At the same time, the fact that most Austrian investment companies are affiliated with domestic banks gives rise to mutual reputational risks. If, say, the parent bank were to run into financial difficulties, investors might withdraw funds deposited with affiliated investment companies, which might in turn trigger distress sales of securities and lower the income of the parent bank. Other systemically relevant aspects of such interlocks with regard to the role of custodian banks will be discussed in greater detail below.

3.3 The Relevance of Custodian Banks for Investment Companies

The 24 Austrian custodian banks fulfil an important task for domestic mutual

funds, as they are appointed to “*issue and repurchase the unit certificates as well as to keep the securities belonging to an investment fund in safe custody and to keep the accounts belonging to the fund.*”²⁵ This stringent definition of the role of custodian banks would not leave any room for a systemically relevant channel of contagion, as the securities held by mutual funds are kept in segregated accounts and are therefore unaffected by creditor claims against the custodian bank.

This is not the case, however, for deposits that mutual funds have made with banks in order to optimize their asset allocation and ensure the liquidity of their mutual fund shares. Such deposits are not covered by the Austrian deposit insurance scheme under Article 93 paragraph 5 no. 5 of the Austrian Banking Act. Moreover, in order to keep administrative overheads low and for reasons of logistical efficiency, these deposits are often held with the custodian bank of the mutual fund. In the event of bankruptcy of the credit institution entrusted with these deposits, two problems would arise for the affected mutual funds: First, their deposits would be part of the bankruptcy estate and would thus be exposed to a risk of loss like any other ordinary investment. Second, the mutual funds would not have immediate access to their deposits, which might give rise to liquidity constraints. Potentially, they might be forced to sell securities in order to restore their liquidity and regain investment flexibility. In this respect, there is a potential channel of contagion running from banks to mutual funds and, under a worst case scenario, even

²⁴ The Herfindahl-Hirschman index is a measure of market concentration and can range between 1 and $1/N$ (N being the number of firms operating in a given market). An index of 1 would indicate a monopoly; the lower the index, the lower the degree of market concentration is.

²⁵ Article 23 Austrian Investment Funds Act.

to the financial market, if securities sales under distress were to depress prices. At the same time, the volatility of deposits made by mutual funds makes liquidity management more difficult for custodian banks, as, unlike other clients, fund managers tend to adjust the size of their deposits rapidly, depending on the prevailing market conditions.

While in Q3/09 Austrian mutual funds had invested more than 90% of their assets in securities, they also held short-term liquid deposits with domestic and foreign monetary financial institutions (MFIs) totaling EUR 11.5 billion, of which 98% were with domestic MFIs. This corresponds to approximately 10% of mutual funds' consolidated NAV and to around 2% of the aggregate deposits made by banks and nonbanks with domestic MFIs. At the same time, mutual funds had credit liabilities of approximately EUR 4.5 billion. In general, the share of mutual

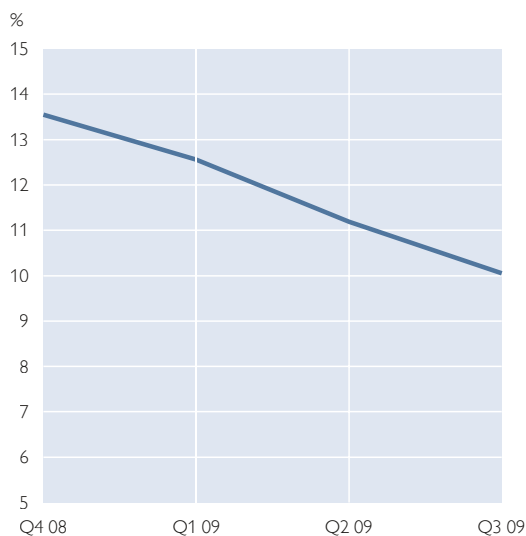
funds' deposits with domestic and foreign MFIs relative to their consolidated NAV has been constantly declining since Q4/08, from 13.6% to 10.1%, which points to a lower liquidity preference and reduced defensive deposits in 2009 – a development that helped to support the financial market recovery.

Since Austrian mutual funds do not report deposits on an individual bank basis, it is not possible to provide an exact quantitative analysis of the interlocks between mutual funds and individual MFIs. The heavy concentration of assets under management with just three custodian banks (59% in Q2/08, 57% in Q3/09) reflects the large market share of the three investment companies affiliated with these parent banks, and also suggests a high degree of concentration of deposits with those custodian banks. This would be problematic insofar as the risk for the liquidity of the Austrian mutual fund indus-

Chart 6

Mutual Fund Deposits with MFIs and Allocation of Assets among Custodian Banks

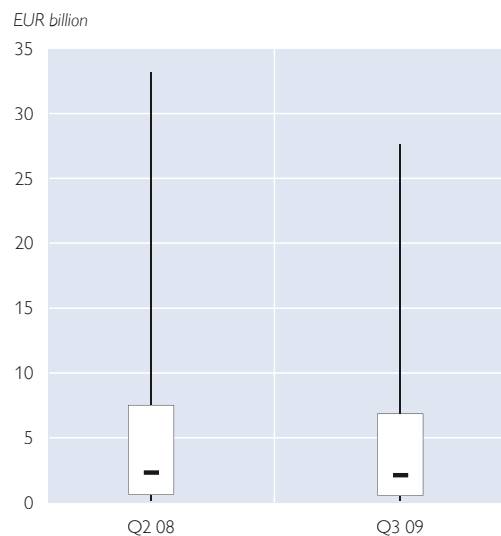
Share of Deposits with MFIs in Consolidated NAV



Source: OeNB.

Note: NAV stands for net asset value.

Assets under Management with Austrian Custodian Banks (Quartile Ranges)



This chart shows the lowest and the highest level, the first and second quartiles, and the median (horizontal line).

try and its investors would be concentrated with those three financial institutions.²⁶ The uneven distribution of mutual fund assets among Austrian custodian banks is also evident from chart 6.

Should a bank with which a mutual fund has placed deposits run into trouble, the fund manager might decide to withdraw his deposits, which would reduce the bank's deposit base and cause its refinancing situation to deteriorate. Given that most Austrian investment companies are owned by Austrian banks, which often provide custodian services for their funds, the aforementioned situation would create a conflict of interest for fund managers of affiliated investment companies. While withdrawing the deposits from a distressed parent bank might be in the interest of investors, it would at the same time exacerbate the situation of the parent bank. In order to counteract such corporate governance issues, Article 2 paragraph 9 of the Austrian Investment Funds Act provides for the separation of organizational and personal responsibilities at investment companies and custodian banks.²⁷

The effects of strong interlocks have also been evidenced in 2008 by the case of Constantia Privatbank AG,²⁸ which served as a custodian bank for many external investment funds but did not have the backing of a major bank. As a result, it was more dependent on fund-

ing through mutual funds' deposits and the interbank market. In this particular case, the combination of a bank with a small balance sheet, a large custodian business and a dependence on liquidity lines with larger banks, who had no ownership relations and interests, proved to be problematic.

3.4 Insurance Companies and Investment Companies

With insurance companies owning less than 2% of total (balance sheet) assets of investment companies, ownership interlocks between the two industries are negligible. Yet with the business model of insurance companies calling for long-term investment strategies, domestic mutual fund shares accounted for almost EUR 20 billion of insurance companies' assets in Q3/09²⁹ – which is more than 20% of the balance sheet assets of the insurance sector and close to 18% of the NAV invested in mutual funds. In this respect, insurance companies are exposed to operational and market risks. The investment risk of insurance companies may materialize when negative investment income causes claims of insurance holders to become underfunded, or when traditional life insurance plans fail to generate the guaranteed investment income. Of the EUR 20 billion that insurance companies held in mutual funds in Q3/09, unit-linked life insurance plans accounted for some EUR 7.5 billion,

²⁶ Article 20 paragraph 3 no. 8d Austrian Investment Funds Act.

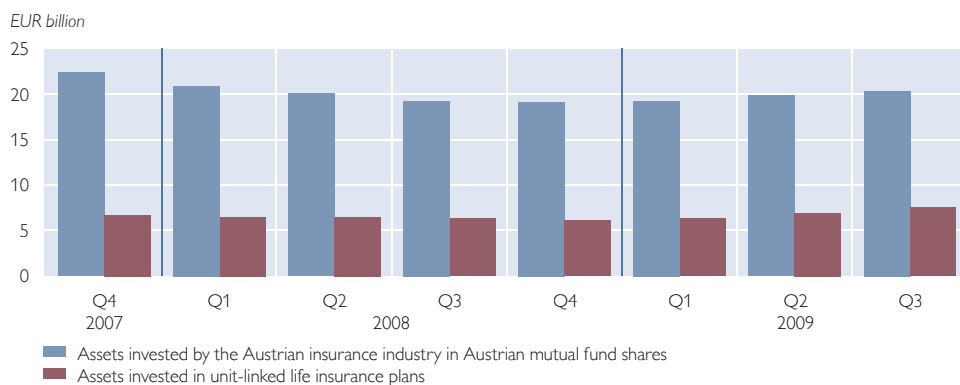
²⁷ The relevant clause reads as follows: "No manager of the custodian bank and no member of the custodian bank's supervisory board shall be a member of the supervisory board of the investment company. No manager or authorised signatory of the custodian bank and no member of the custodian bank's supervisory board shall be a manager or authorised signatory of the investment company." In addition, the relevant agents in Austria are subject to self-regulation commitments, which have been approved by the FMA (quality standards of the Austrian mutual fund industry 2008).

²⁸ www.oenb.at/de/presse_pub/aussendungen/2008/2008q4/20081017_constantia_privatbank.jsp#tcm:14-91868 (press release, available in German only).

²⁹ Unit-linked life insurance plans could not be broken down into domestic and foreign mutual fund shares because there is a lack of corresponding data.

Chart 7

Assets Invested by Austrian Insurance Companies in Austrian Mutual Fund Shares



Source: OeNB.

the underlying investment risk of which is borne by policy holders alone.

Unit-linked and index-linked life insurance plans have been very popular also as repayment vehicles for foreign-currency bullet loans, with Austrian households currently relying on such plans to generate as much as half of the amounts they will need to repay (some EUR 15 billion). Thus, such plans constitute yet another link between credit institutions, insurance companies and mutual funds. Through unit-linked life insurance plans, the malperformance of mutual funds may cause foreign currency-denominated bullet loans to become underfunded³⁰ and may thus add

to the risk that the borrower may default. A survey among domestic banks (which considers data up until Q4/08) shows that, at the lowest point of the crisis, accumulated savings fell approximately 16% short of planned values, with varying consequences depending on the maturity of the loan and the underlying investment strategy of the mutual fund. The ensuing additional credit risks for banks are mitigated by collateral, such as property holdings.

Reverse interlocks arising from the investment of mutual fund assets in securities issued by Austrian insurance companies were rather limited with a size of EUR 156 million (Q3/09).

Box 1

Role of Pension Funds and Severance Funds with Regard to Interlocks between Banks and Investment Companies

In Austria, pension funds and severance funds are majority-owned by the financial sector: On an asset-weighted basis, 65% of all such funds are controlled by domestic banks. Between them, pension and severance funds had accumulated approximately EUR 16 billion by the end of Q3/09, with pension funds accounting for EUR 13.3 billion and severance funds for EUR 2.7 billion (with the latter posting an annual growth rate of 33.5% in 2009). Of those EUR 16 bil-

³⁰ See "Extension of the FMA Minimum Standards for Granting and Managing Foreign Currency Loans and Loans with Repayment Vehicles of 16 October 2003; Extension of 22 March 2010" (www.fma.gv.at/cms/site/attachments/5/2/6/CH0217/CMS1272028701173/fma-fxtt-ems_final_en.pdf).

lion, 91% had been invested in securities, the remainder being cash balances or balances with credit institutions. In turn, 91% of the assets invested in securities were invested domestically, either directly in Austrian securities (only around EUR 340 million) or indirectly through Austrian mutual funds (EUR 12.8 billion). In other words, pension and severance funds had invested 80% of their total assets in domestic mutual funds at the end of September 2009. In particular, they had invested EUR 671 million in bank instruments, either directly or indirectly through mutual funds, which is rather a limited share, given the total outstanding amount of almost EUR 280 billion invested in bank instruments.

Investment Volume of Domestic Pension and Severance Funds by Debtor Sectors (EUR 1.5 billion)



In addition to their deposits with banks, pension and severance funds had invested as much as 14% of their cash balances with domestic banks or into instruments issued by the latter. In the event of bank defaults, these interlocks would have a – mixed – negative impact on the performance of pension funds and severance funds. With respect to pension funds, the direct exposure to investment risks is limited, as most of these risks are borne either by the employers (to the extent that they are obliged to make supplementary contributions) or by the beneficiaries of the pension plans. Only 27%¹ of the pension assets are subject to a minimum return guarantee. Even so, the underlying stability risk for pension funds is relatively small at present, as – following a legislative change in 2003 – this minimum return must be provided only when the pensions actually become due.²

The exposure of severance funds is somewhat higher: Severance funds, which invest 69% of their capital into mutual fund shares, are subject to a nominal capital guarantee under Article 24 of the Severance Fund Act, which means that beneficiaries are entitled to receive

the amounts they originally paid in irrespective of associated administrative costs. Thus, a prolonged negative performance of mutual funds (scenario: three consecutive years at 2008 performance levels) would deplete the reserves of individual severance funds, as a result of which their owners would have to inject more capital.³ As the capital guarantee is of a nominal nature, severance funds should, however, be able to defuse the situation by shifting funds in a timely manner, for instance such that they track the secondary market yield (which is approximately 3% at the time of writing). Adjusted for inflows and outflows and for costs, severance funds were able to realize an average increase in capital of 1.4% in the period from 2004 to 2009.⁴

From a liquidity perspective, the situation would appear to be less critical, as in the early stages of the new severance pay system – under which all staff taken on from January 2003

¹ As of December 2008.

² On the one hand, only 11% of pension plan members were already entitled to pension payments at the end of 2008; on the other hand, pension funds had accumulated EUR 56 million in terms of minimum return reserves, which they started to build from premiums in 2003.

³ The scenario figures are based on a survey that the OeNB conducted in 2009.

⁴ In line with capital-weighted OeNB calculations based on data reported by severance funds. Note that these calculations are based on the assumption that capital guarantees would have to be redeemed for every single beneficiary account. These figures are not tantamount to a performance report. Performance reports can be accessed under www.oekb.at.

(and all new self-employed persons from January 2008) accrue entitlements to severance payments – inflows exceed outflows up to four or five times. Here, too, the sector and/or the system is getting increasingly vulnerable to (another) market crisis the closer the system gets to its equilibrium state. Irrespective of the performance of pension and severance funds for beneficiaries, they are going to be a source of stability for companies managing mutual funds. After all, premiums paid into pension funds and severance funds add up to almost EUR 2 billion each year, and the bulk of this amount is invested indirectly, i.e. into mutual funds, thus providing the financial system with stable returns and a steady supply of liquidity.

4 Summary of Key Results

Given the relatively small balance sheets of investment companies, they do not pose a systemic danger for credit institutions. Yet the net asset value they have invested in the market adds up to EUR 114 billion and thus does have an impact on financial stability.

In particular, the overlapping roles of custodian banks, parent banks and banks with which the liquid assets of mutual funds are invested, warrant further observation. This study provides a thorough overview of the interlocks between mutual funds and all other financial intermediaries. In addition, we were able to quantify the ownership in-

terlocks of credit institutions, investment companies, severance funds and pension funds. On balance, the underlying risks to financial stability would appear to be limited.

What the paper did not look into are operational risks (which should not be underestimated as the Madoff scandal in the U.S.A. has shown) and the effects of the UCITS IV directive.³¹ Likewise, we did not include any indirect feedback effects on financial stability (and, thus, on the real economy) resulting from price loss risks which are borne by nonfinancial corporations and households; these issues would warrant further research.

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³¹ Directive 2009/65/EC of the European Parliament and of the Council of 13 July 2009 on the coordination of laws, regulations and administrative provisions relating to undertakings for collective investment in transferable securities.

Appendix

Austrian Investment Companies, Funds under Management, Custodian Banks

Name of the investment company	Assets under management (EUR million) ¹	Custodian bank for most (>50%) assets under management
Raiffeisen Kapitalanlage-Gesellschaft mit beschränkter Haftung	26,654	Raiffeisen Zentralbank Österreich Aktiengesellschaft
ERSTE-SPARINVEST Kapitalanlagegesellschaft m.b.H.	26,073	Erste Group Bank AG
Pioneer Investments Austria GmbH	20,034	UniCredit Bank Austria AG
Allianz Invest Kapitalanlagegesellschaft mbH	9,803	Allianz Investmentbank Aktiengesellschaft
KEPLER-FONDS Kapitalanlagegesellschaft m.b.H.	8,907	Raiffeisenlandesbank Oberösterreich Aktiengesellschaft
DWS (Austria) Investmentgesellschaft mbH	5,883	State Street Bank GmbH Filiale Wien
3 Banken-Generali Investment-Gesellschaft m.b.H.	4,476	Oberbank AG, BKS Bank AG ²
CPB Kapitalanlage GmbH	4,249	Aviso Zeta Bank AG (formerly CONSTANTIA PRIVATBANK)
Carl Spängler Kapitalanlagegesellschaft m.b.H.	3,693	State Street Bank GmbH Filiale Wien
RINGTURM Kapitalanlagegesellschaft m.b.H.	3,583	UniCredit Bank Austria AG
Gutmann Kapitalanlageaktiengesellschaft	3,437	Bank Gutmann Aktiengesellschaft
BAWAG P.S.K. INVEST GmbH	3,422	BAWAG P.S.K. Bank für Arbeit und Wirtschaft und Österreichische Postsparkasse Aktiengesellschaft
Volksbank Invest Kapitalanlagegesellschaft m.b.H.	3,186	Österreichische Volksbanken-Aktiengesellschaft
HYPO-Kapitalanlage-Gesellschaft m.b.H.	2,573	Vorarlberger Landes- und Hypothekenbank Aktiengesellschaft
Schoellerbank Invest AG	2,230	Schoellerbank Aktiengesellschaft
Sparkasse Oberösterreich Kapitalanlagegesellschaft m.b.H.	2,139	Allgemeine Sparkasse Oberösterreich Bankaktiengesellschaft
Security Kapitalanlage Aktiengesellschaft	1,431	Aviso Zeta Bank AG (formerly CONSTANTIA PRIVATBANK)
Raiffeisen Salzburg Invest Kapitalanlage GmbH	1,296	Raiffeisen Zentralbank Österreich Aktiengesellschaft
C-QUADRAT Kapitalanlage AG	1,071	Aviso Zeta Bank AG (formerly CONSTANTIA PRIVATBANK)
Tirolinvest Kapitalanlagegesellschaft m.b.H.	562	Tiroler Sparkasse Bankaktiengesellschaft Innsbruck
Bankhaus Schelhammer & Schattera Kapitalanlagegesellschaft m.b.H.	349	Bankhaus Schelhammer & Schattera Aktiengesellschaft
JULIUS MEINL INVESTMENT Gesellschaft m.b.H.	228	MEINL BANK Aktiengesellschaft
INNOVEST Kapitalanlage AG	155	Allianz Investmentbank Aktiengesellschaft
Valartis Asset Management (Austria) Kapitalanlagegesellschaft m.b.H.	115	Valartis Bank (Austria) AG
Erste Asset Management GmbH	2	Erste Group Bank AG
Bank Austria Real Invest Immobilien-Kapitalanlage GmbH ³	1,108	UniCredit Bank Austria AG
Raiffeisen Immobilien Kapitalanlage-Gesellschaft m.b.H. ³	335	Raiffeisen Zentralbank Österreich Aktiengesellschaft
Immo Kapitalanlage AG ³	221	Österreichische Volksbanken-Aktiengesellschaft
CPB Immobilien Kapitalanlage GmbH ³	116	Aviso Zeta Bank AG (formerly CONSTANTIA PRIVATBANK)
ERSTE Immobilien Kapitalanlagegesellschaft m.b.H. ³	22	Erste Group Bank AG
Total	137,352	

Source: OeNB.

¹ Data refer to Q3/09.

² Mutual funds issued by 3 Banken-Generali Investment-Gesellschaft m.b.H. are handled by either Oberbank AG or BKS Bank AG.

³ Real estate investment companies.

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Cutoff date for data: May 25, 2010

Conventions used in the tables:

x = No data can be indicated for technical reasons.

.. = Data not available at the reporting date.

Revisions of data published in earlier volumes are not indicated.

Discrepancies may arise from rounding.

International Environment

Table A1

Exchange Rates

	2006	2007	2008	2009	2006	2007	2008	2009
Year					2 nd half			
	Period average (per EUR 1)							
U.S. dollar	1.26	1.37	1.47	1.39	1.28	1.40	1.41	1.45
Japanese yen	146.06	161.25	152.35	130.27	149.98	162.87	144.16	130.28
Pound sterling	0.68	0.68	0.80	0.89	0.68	0.69	0.82	0.89
Swiss franc	1.57	1.64	1.59	1.51	1.58	1.65	1.12	1.51
Czech koruna	28.34	27.76	24.96	26.45	28.19	27.36	24.73	25.76
Hungarian forint	264.1	251.3	251.7	280.5	267.71	252.36	249.81	271.10
Polish zloty	3.90	3.78	3.52	4.33	3.90	3.72	3.54	4.18
Slovak koruna ¹	37.21	33.78	31.27	x	36.87	33.50	30.33	x
Slovenian tolar ¹	239.6	x	x	x	239.63	x	x	x

Source: Thomson Reuters.

¹ From 1 January 2007 (Slovenian tolar) and 1 January 2009 (Slovak koruna); irrevocable conversion rate against the euro.

Table A2

Key Interest Rates

	2006		2007		2008		2009	
	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31
	End of period, %							
Euro area	2.75	3.50	4.00	4.00	4.00	2.50	1.00	1.00
U.S.A.	5.25	5.25	5.25	4.25	2.00	0.25	0.25	0.25
Japan	0.03	0.28	0.61	0.46	0.57	0.1	0.11	0.09
United Kingdom	4.50	5.00	5.50	5.50	5.00	2.00	0.50	0.50
Switzerland ¹	1.00–2.00	1.50–2.50	2.00–3.00	2.25–3.25	2.25–3.25	0.00–1.00	0.00–0.75	0.00–0.75
Czech Republic	2.00	2.50	2.75	3.50	3.75	2.25	1.50	1.00
Hungary	6.25	8.00	7.75	7.50	8.50	10.00	9.50	6.25
Poland	4.00	4.00	4.50	5.00	6.00	5.00	3.50	3.50
Slovak Republic ²	4.00	4.75	4.25	4.25	4.25	2.50	x	x
Slovenia ³	3.50	3.75	x	x	x	x	x	x

Source: Eurostat, Thomson Reuters, national sources.

¹ SNB target range for 3-month LIBOR.

² From 2009 onwards: see Euro area.

³ Official interest rate from 2007 onwards: see Euro area.

Table A3

Short-Term Interest Rates

	2006	2007	2008	2009	2006	2007	2008	2009
Year					2 nd half			
<i>3-month rates, period average, %</i>								
Euro area	3.08	4.28	4.63	1.23	3.35	4.55	4.60	0.80
U.S.A.	5.20	5.30	2.92	0.69	5.40	5.25	2.81	0.34
Japan	0.31	0.73	0.85	0.59	0.44	0.81	0.86	0.53
United Kingdom	4.80	5.95	5.49	1.22	4.97	6.23	5.19	0.74
Switzerland	1.51	2.55	2.57	0.37	1.73	2.74	2.36	0.30
Czech Republic	2.30	3.10	4.04	2.19	2.50	3.52	4.01	1.87
Hungary	7.00	7.75	8.87	8.64	7.75	7.54	9.57	7.64
Poland	4.21	4.74	6.36	4.42	4.20	5.16	6.60	4.20
Slovak Republic ¹	4.32	4.34	4.15	x	4.93	4.33	4.00	x
Slovenia ¹	3.58	x	x	x	3.54	x	x	x

Source: Bloomberg, Eurostat, Thomson Reuters.

¹ From 2007 onwards: see Euro area.

Table A4

Long-Term Interest Rates

	2006	2007	2008	2009	2006	2007	2008	2009
Year					2 nd half			
<i>10-year rates, period average, %</i>								
Euro area	3.83	4.31	4.24	3.71	3.91	4.42	4.23	3.62
U.S.A.	4.88	4.80	4.22	4.07	4.86	4.76	3.98	4.33
Japan	1.74	1.67	1.49	1.34	1.76	1.68	1.47	1.33
United Kingdom	4.45	5.00	4.49	3.66	4.53	4.94	4.33	3.77
Switzerland	2.52	2.93	2.90	2.20	2.55	3.06	2.56	2.11
Czech Republic	3.80	4.30	4.63	4.84	3.90	4.55	4.52	4.70
Hungary	7.00	7.75	8.87	8.64	7.32	6.72	8.53	7.94
Poland	5.23	5.48	6.07	6.12	5.40	5.70	6.12	6.16
Slovak Republic	4.41	4.49	4.72	4.71	4.69	4.63	4.93	4.55
Slovenia	3.85	4.53	4.61	4.38	3.95	4.63	4.70	4.00

Source: Eurostat, national sources.

Table A5

Corporate Bond Spreads

	2006	2007	2008	2009	2006	2007	2008	2009
Year					2 nd half			
<i>Period average, percentage points</i>								
Spreads of 7- to 10-year euro area corporate bonds against euro area government bonds of same maturity								
AAA	0.18	0.27	0.70	0.69	0.19	0.34	0.86	0.42
BBB	1.24	1.26	3.55	4.65	1.25	1.51	4.51	3.03
Spreads of 7- to 10-year U.S. corporate bonds against U.S. government bonds of same maturity								
AAA	0.33	0.65	2.09	1.64	0.38	0.87	2.65	0.80
BBB	1.03	1.50	4.16	4.51	1.14	1.87	5.20	3.00

Source: Merrill Lynch via Thomson Reuters.

Table A6

Stock Indices¹

	2006	2007	2008	2009	2006	2007	2008	2009
	Year				2 nd half			
	Period average							
Euro area: EURO STOXX	357	416	314	234	367	417	269	258
U.S.A.: S&P 500	1,311	1,477	1,221	948	1,339	1,492	1,082	1,042
Japan: Nikkei 225	16,124	16,984	13,592	9,348	16,044	16,455	10,730	10,052
Austria: ATX	3,940	4,618	3,361	2,131	3,935	4,598	2,695	2,460
Czech Republic: PX50	1,480	1,776	1,359	962	1,483	1,814	1,138	1,107
Hungary: BUX	22,528	26,086	19,744	16,043	22,551	27,329	16,729	19,393
Poland: WIG	43,100	58,988	40,681	32,004	46,267	60,426	34,117	37,237
Slovak Republic: SAX16	403	422	431	318	400	434	412	298
Slovenia: SBI20	5,223	9,818	7,563	4,030	5,699	11,545	5,986	4,228

Source: Thomson Reuters.

¹ EURO STOXX: December 31, 1991 = 100, S&P 500: November 21, 1996 = 100, Nikkei 225: April 3, 1950 = 100, ATX: January 2, 1991 = 1,000, PX50: April 6, 1994 = 1,000, BUX: January 2, 1991 = 1,000, WIG: April 16, 1991 = 1,000, SAX16: September 14, 1993 = 100, SBI20: January 3, 1994 = 1,000.

Table A7

Gross Domestic Product

	2006	2007	2008	2009	2006	2007	2008	2009
	Year				2 nd half			
	Annual change in %, period average							
Euro area	2.9	2.7	0.6	-4.1	0.7	0.5	-1.2	0.2
U.S.A.	2.7	2.1	0.4	-2.4	0.4	0.7	-1.1	1.0
Japan	2.0	2.4	-1.2	-5.2	0.5	0.2	-2.0	0.4
Austria	3.5	3.5	2.0	-3.6	1.2	0.8	-1.0	0.5
Czech Republic	6.8	6.1	2.5	-4.2	6.8	5.7	1.6	-3.9
Hungary	4.0	1.0	0.6	-6.3	3.9	0.5	-0.6	-5.6
Poland	6.2	6.8	5.0	1.8	6.8	6.6	3.9	2.5
Slovak Republic	8.5	10.6	6.2	-4.7	9.3	12.1	4.2	-3.8
Slovenia	5.8	6.8	3.5	-7.8	6.3	6.5	1.4	-6.9

Source: Eurostat, national sources.

Table A8

Current Account

	2006	2007	2008	2009	2006	2007	2008	2009
	Year				2 nd half			
	% of GDP, cumulative							
Euro area	0.3	0.4	-0.9	-0.7	0.2	0.6	-1.5	0.1
U.S.A.	-6.0	-5.2	-4.9	-3.0	-6.1	-5.1	-4.7	-3.2
Japan	3.9	4.8	3.2	1.8	4.0	4.7	2.2	..
Austria	2.5	3.3	3.3	1.4	2.1	2.4	2.5	..
Czech Republic	-2.4	-3.2	-3.1	-1.1	-4.2	-5.0	-4.7	-1.7
Hungary	-7.2	-6.5	-7.1	0.2	-6.5	-5.8	-8.4	1.6
Poland	-2.7	-4.7	-5.0	-1.6	-3.0	-4.6	-4.7	-2.3
Slovak Republic	-7.0	-5.4	-6.6	-3.2	-7.2	-6.7	-6.6	-3.2
Slovenia	-2.5	-4.8	-6.2	-1.0	-4.5	-6.9	-7.3	-1.2

Source: Eurostat, European Commission, Thomson Reuters, national sources.

Note: Due to seasonal fluctuations, the comparability of half-year figures with yearly figures is limited. The half-year figures for the U.S.A. are based on seasonally adjusted nominal GDP data.

Table A9

Inflation

	2006	2007	2008	2009	2006	2007	2008	2009
	Year				2 nd half			
	Annual change in %, period average							
Euro area	2.2	2.1	3.3	0.3	2.0	2.4	3.1	0.6
U.S.A.	3.2	2.8	3.6	-0.5	2.9	3.2	3.5	-0.4
Japan	0.3	0.0	1.4	-1.4	0.5	0.2	1.6	-0.6
Austria	1.7	2.2	3.2	0.4	1.7	2.6	3.0	0.6
Czech Republic	2.1	3.0	6.3	0.6	1.7	3.8	5.4	0.0
Hungary	4.0	7.9	6.0	4.0	5.5	7.2	5.2	4.9
Poland	1.3	2.6	4.2	4.0	1.4	3.0	4.0	4.0
Slovak Republic	4.3	1.9	3.9	0.9	4.1	1.9	4.2	0.2
Slovenia	2.5	3.8	5.5	0.9	2.4	4.6	4.6	0.6

Source: Eurostat.

The Real Economy in Austria

Table A10

Financial Investment of Households

	2006	2007	2008	2009 ³	2006	2007	2008	2009 ³
Year					2 nd half			
Transactions, EUR million								
Currency and deposits ¹	7,850	14,536	14,247	9,393	3,698	5,269	4,763	1,440
Securities (other than shares) ²	1,485	3,812	5,338	-344	641	1,989	2,803	129
Shares (other than mutual fund shares)	2,357	14	1,301	938	410	602	550	51
Mutual fund shares	2,078	-341	-4,138	953	380	-1,001	-2,702	1,221
Insurance technical reserves	5,214	3,424	2,726	4,135	2,927	1,089	854	2,248
Total financial investment	18,984	21,445	19,474	15,075	8,056	7,948	6,268	5,089

Source: OeNB.

¹ Including loans and other assets.

² Including financial derivatives.

³ Preliminary data.

Table A11

Household Income, Savings and Credit Demand

	2006	2007	2008	2009
Year				
Year-end, EUR billion				
Net disposable income	154.9	161.7	168.8	168.9
Savings	16.8	18.4	20.3	18.7
Saving ratio in % ¹	10.8	11.3	12.0	11.0
MFI loans to households	115.48	123.24	125.31	125.48

Source: Statistics Austria (national accounts broken down by sectors), OeNB (financial accounts).

¹ Saving ratio = savings / (disposable income + increase in accrued occupational pension benefits).

Table A12

Financing of Nonfinancial Corporations

	2006	2007	2008	2009 ¹	2006	2007	2008	2009 ¹
Year					2 nd half			
Transactions, EUR million								
Securities (other than shares)	2,704	4,595	2,895	5,386	1,557	2,722	2,303	2,922
Loans	6,687	14,075	11,604	-1,237	1,897	6,100	4,403	213
Shares and other equity ²	8,301	37,762	9,996	3,153	1,880	29,498	3,518	1,316
Other accounts payable	728	1,583	1,038	834	170	529	-280	386
Total debt	18,420	58,015	25,533	8,136	5,504	38,849	9,944	4,837

Source: OeNB.

¹ Preliminary data.

² Including other equity of domestic SPE held by nonresidents (data are included from 2005 onwards).

Table A13

Insolvency Indicators

	2006	2007	2008	2009	2006	2007	2008	2009
	Year				2 nd half			
	<i>EUR million</i>							
Default liabilities	2,569	2,441	2,969	4,035	1,468	1,290	1,859	2,057
	<i>Number</i>							
Defaults	3,084	3,023	3,270	3,741	1,537	1,475	1,651	1,837

Source: Kreditschutzverband von 1870.

Table A14

Selected Financial Ratios of the Manufacturing Sector

	2006	2007	2008	2009
	<i>Median, %</i>			
Self-financing and investment ratios				
Cash flow, as a percentage of turnover	8.49	8.59	7.56	..
Investment ratio ¹	1.60	1.83	1.88	..
Reinvestment ratio ²	50.00	58.33	66.86	..
Financial structure ratios				
Equity ratio	16.59	18.56	23.13	..
Risk-weighted capital ratio	21.78	23.91	29.77	..
Bank liability ratio	39.09	37.41	30.85	..
Government debt ratio	9.04	8.85	8.43	..

Source: OeNB.

¹ Investments x 100 / net turnover.² Investments x 100 / credit write-offs.

Financial Intermediaries in Austria¹

Table A15

Total Assets and Off-Balance-Sheet Operations

	2006		2007		2008		2009	
	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31
<i>End of period, EUR million</i>								
Total assets on an unconsolidated basis	765,258	797,758	859,343	899,542	971,976	1,069,100	1,058,394	1,033,954
of which: total domestic assets	493,966	504,237	518,713	548,516	581,756	692,565	693,466	678,937
total foreign assets	271,292	293,521	340,630	351,027	390,220	376,535	364,928	349,339
Interest rate contracts	1,278,429	1,360,613	1,450,249	1,689,633	1,513,399	1,722,585	1,754,974	1,836,205
Foreign exchange derivatives	264,876	279,686	369,009	347,248	393,964	506,924	454,203	418,971
Other derivatives	21,751	20,103	21,067	19,381	22,075	27,639	29,590	25,351
Derivatives total	1,565,056	1,660,402	1,840,325	2,056,262	1,929,438	2,257,148	2,238,767	2,280,527
Total assets on a consolidated basis	874,322	927,751	1,037,390	1,073,258	1,161,704	1,175,646	1,159,213	1,139,961

Source: OeNB.

Note: Data on off-balance-sheet operations refer to nominal values.

Table A16

Profitability on an Unconsolidated Basis

	2006	2007	2008	2009	2006	2007	2008	2009
	1 st half				Year			
<i>End of period, EUR million</i>								
Net interest income	3,562	3,568	3,978	4,396	7,170	7,399	8,248	8,778
Income from securities and participating interests	1,198	1,387	1,470	1,492	2,878	3,521	7,193	3,327
Net fee-based income	2,169	2,453	2,157	1,810	4,301	4,710	4,218	3,603
Net profit/loss on financial operations	446	361	-55	338	688	290	-812	486
Other operating income	686	758	826	739	1,581	1,592	1,710	1,653
Operating income	8,062	8,527	8,376	8,773	16,618	17,512	20,557	17,846
Staff costs	2,624	2,654	2,870	2,870	5,451	5,468	5,776	5,697
Other administrative expenses	1,706	1,800	1,880	1,839	3,516	3,703	3,952	3,765
Other operating expenses	838	843	757	734	1,828	1,678	1,688	1,615
Total operating expenses	5,168	5,297	5,507	5,443	10,795	10,849	11,416	11,077
Operating profit/loss	2,894	3,230	2,869	3,331	5,823	6,663	9,141	6,769
Net risk provisions from credit business ¹	1,637	1,257	1,867	3,043	1,845	2,012	4,201	4,422
Net risk provisions from securities business ¹	-723	-404	-180	421	-2,875	-430	2,801	4,090
Annual surplus ¹	3,931	4,702	3,766	2,535	3,957	4,787	1,891	36.8
Return on assets ^{1,2,3}	0.49	0.51	0.36	0.24	0.50	0.53	0.18	0.00
Return on equity (tier 1 capital) ^{1,2,3}	8.6	7.4	6.0	3.7	9.5	8.2	2.80	0.1
Interest income to gross income (%)	44	42	48	50	43	42	40	49.2
Operating expenses to gross income (%)	64	62	66	62	65	62	56	62

Source: OeNB.

¹ Data referring to the first half of the year are expected year-end values.² Annual surplus in % of total assets and tier 1 capital, respectively.³ Retrospective modified due to a change of calculation.

¹ Since 2007, the International Monetary Fund (IMF) has published Financial Soundness Indicators (FSI) for Austria (see also www.imf.org). The tables below have therefore been expanded to include FSI as computed by the OeNB for banks operating in Austria.

Table A17

Profitability on a Consolidated Basis

	2006	2007	2008	2009	2006	2007	2008	2009
	1 st half				Year			
	End of period, EUR million							
Operating income	11,713	13,929	16,811	19,215	23,993	28,093	33,642	37,850
Operating expenses ¹	7,224	8,184	8,054	7,794	14,758	17,041	16,530	15,502
Operating profit/loss	4,488	5,745	5,617	8,450	9,235	11,052	7,855	15,620
Result before minority interests	3,712	4,087	3,805	3,535	8,696	8,015	1,100	1,530
Return on assets ^{2,4}	0.87	0.92	0.69	0.47	0.98	0.79	0.09	0.18
Return on equity (tier 1 capital) ^{2,4}	20.3	21.0	15.2	9.7	24.0	18.2	2.0	3.6
Interest income to gross income (%)	60	61	54	50	62	64	57	51
Operating expenses to gross income (%) ³	62	59	67	56	62	61	77	59

Source: OeNB.

¹ As from 2008 on, operating expenses refer to staff costs and other administrative expenses only.² End-of-period result expected for the full year before minority interests as a percentage of average total assets and average tier 1 capital, respectively.³ All figures represent the ratio of total operating expenses to total operating income.⁴ Retrospective modified due to a change of calculation.

Note: Due to changes in reporting, the comparability of consolidated values as from 2008 with earlier values is limited.

Table A18

Sectoral Distribution of Loans

	2006		2007		2008		2009	
	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31
	End of period, EUR million							
Nonfinancial corporations	114,171.0	116,078	118,012	121,992	127,711	133,608	131,971	130,155
of which: foreign currency-denominated loans	14,006	12,586	10,501	9,884	10,667	12,134	11,263	11,055
Households ¹	109,255	111,404	114,998	117,601	119,778	124,221	122,378	124,081
of which: foreign currency-denominated loans	34,395	34,266	33,383	32,279	34,758	38,182	36,271	36,127
General government	29,856	28,662	27,296	26,303	26,795	25,073	25,993	26,116
of which: foreign currency-denominated loans	2,159	1,862	1,489	1,603	1,736	1,652	1,709	1,742
Other financial intermediaries	20,523	22,001	20,758	21,646	22,032	25,770	25,251	24,567
of which: foreign currency-denominated loans	3,491	3,353	3,142	2,930	3,079	3,529	3,381	3,398
Foreign nonbanks	74,014	80,985	88,217	103,983	113,057	125,694	121,922	117,726
of which: foreign currency-denominated loans	29,280	31,378	33,961	38,027	39,182	42,600	38,319	36,100
Nonbanks total	347,820	359,129	369,282	391,524	409,372	434,366	427,515	422,645
of which: foreign currency-denominated loans	83,331	83,445	82,476	84,723	89,421	98,096	90,943	88,422
Banks	218,833	230,320	264,854	263,344	313,897	363,123	353,198	333,865
of which: foreign currency-denominated loans	62,313	62,467	70,077	69,652	84,560	108,405	96,271	83,728

Source: OeNB.

¹ Sector "Households" consists here of the sectors "Households" and "Nonprofit institutions serving households".

Note: Figures are based on supervisory statistic and therefore differ from monetary figures used in the text.

Table A19

Foreign Currency-Denominated Claims on Domestic Non-MFIs

	2006		2007		2008		2009	
	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31
<i>End of period, % of total foreign currency-denominated claims on domestic non-MFIs¹</i>								
Swiss franc	89.9	90.8	90.0	88.7	88.8	86.4	86.4	86.3
Japanese yen	3.0	2.8	2.8	3.6	3.3	5.5	5.4	5.4
U.S. dollar	6.5	5.5	5.4	5.1	6.1	7.0	6.7	6.7
Other foreign currencies	0.6	0.9	1.8	2.6	1.8	1.1	1.5	1.6

Source: OeNB, ECB.

¹ The indicated figures refer to claims of monetary financial institutions (MFIs, ESA definition) on domestic non-MFIs. Given the differences in the definition of credit institutions according to the Austrian Banking Act and of MFIs according to ESA and differences in the number of borrowers, comparability to "Claims on Domestic Nonbanks" is limited. Due to rounding, figures do not add up to 100% for every year.

Table A20

Loan Quality

	2006		2007		2008		2009	
	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31
<i>End of period, % of claims</i>								
Specific loan loss provisions for loans to nonbanks (unconsolidated)	3.1	2.9	2.7	2.4	2.3	2.2	2.5	2.8
Specific loan loss provisions for loans to nonbanks (consolidated) ¹	3.0	2.7	2.6	2.4	2.4	2.4	2.9	3.6
Nonperforming loans (unconsolidated)	x	2.1	x	1.7	x	2.0	x	..
<i>End of period, % of tier 1 capital</i>								
Nonperforming loans (unconsolidated)	x	39.0	x	25.5	x	31.5	x	..

Source: OeNB.

¹ Estimation.

Table A21

Market Risk¹

	2006		2007		2008		2009	
	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31
<i>End of period, EUR million and % respectively</i>								
Interest rate risk								
Basel ratio for interest rate risk, % ²	6.3	5.6	5.2	4.5	4.5	3.9	3.7	3.7
Capital requirement for the position risk of interest rate instruments in the trading book	792.6	737.3	980.0	1,082.6	856.9	953.3	911.3	780.9
Exchange rate risk								
Capital requirement for open foreign exchange positions	101.8	75.2	89.1	74.1	99.7	110.3	89.1	75.2
Equity price risk								
Capital requirement for the position risk of equities in the trading book	94.0	101.0	211.6	180.6	204.8	186.9	166.1	176.9

Source: OeNB.

¹ Based on unconsolidated data. The calculation of capital requirements for market risk combines the standardized approach and internal value-at-risk (VaR) calculations. The latter use previous day's values without taking account of the multiplier. Capital requirements for interest rate instruments and equities are computed by adding up both general and specific position risks. As long as reporting is according to Basel II mutual funds and nonlinear option risks are included in the data according to their risk categories.

² Average of the Basel ratio for interest rate risk (loss of present value following a parallel yield curve shift of all currencies by 200 basis points in relation to regulatory capital) weighted by total assets of all Austrian credit institutions excluding banks that operate branches in Austria under freedom of establishment. For banks with a large securities trading book, interest rate instruments of the trading book are not included in the calculation.

Table A22

Liquidity Risk¹

	2006		2007		2008		2009	
	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31
<i>End of period, %</i>								
Short-term loans to short-term liabilities	67.4	66.2	70.1	64.0	69.8	67.0	74.2	72.5
Short-term loans and other liquid assets to short-term liabilities	117.7	115.0	118.7	109.9	112.7	109.0	125.0	124.8
Liquid resources of the first degree: 5% quantile of the ratio between available and required liquidity of degree 11	173.0	152.4	134.4	140.0	140.2	149.4	143.3	139.9
Liquid resources of the second degree: 5% quantile of the ratio between available and required liquidity of degree	118.7	111.5	114.1	110.2	113.1	113.5	116.8	110.8

Source: OeNB.

¹ Short-term loans and short-term liabilities (up to 3 months against banks and non-banks). Liquid assets (quoted stocks and bonds, government bonds and eligible collateral, cash and liquidity reserves at apex institutions). The liquidity ratio relates liquid assets to the corresponding liabilities. Article 25 of the Austrian Banking Act defines a minimum ratio of 2.5 % for liquid resources of the first degree (cash ratio) and of 20% for liquid resources of the second degree (quick ratio). The 5% quantile indicates the ratio between available and required liquidity of liquidity surpassed by 95% of banks on the respective reporting date.

Table A23

Solvency

	2006		2007		2008		2009	
	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31
<i>End of period, eligible capital and tier 1 capital, respectively, as a percentage of risk-weighted assets</i>								
Consolidated capital adequacy ratio	12.0	11.3	12.1	11.6	11.0	11.0	12.1	12.8
Consolidated tier 1 capital ratio	8.5	7.8	8.5	8.1	7.7	7.7	8.7	9.3

Source: OeNB.

Note: Unconsolidated data are not published anymore.

Table A24

Exposure to CESEE

	2006		2007		2008		2009	
	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31
<i>End of period, EUR million</i>								
Total assets of subsidiaries ¹	142,987	158,736	201,394	231,742	261,400	267,484	256,842	254,370
of which: NMS-2004 ²	97,093	92,805	103,482	115,377	132,770	131,809	127,693	126,916
NMS-2007 ³	9,947	26,095	32,059	36,776	39,855	40,679	41,044	40,488
SEE ⁴	23,525	26,303	41,068	43,876	45,559	46,745	47,292	48,676
CIS ⁵	12,423	13,533	24,786	35,713	43,216	48,251	40,813	38,285
Exposure according to BIS in total ⁶	x	x	168,848	190,775	191,672	199,493	187,363	204,228
of which: NMS-2004 ²	x	x	86,577	96,249	105,536	111,065	104,352	112,538
NMS-2007 ³	x	x	28,491	32,608	33,427	34,034	33,726	33,695
SEE ⁴	x	x	34,800	38,520	27,301	27,928	27,329	40,409
CIS ⁵	x	x	18,980	23,398	25,408	26,466	21,956	17,586
Total indirect lending to nonbanks ⁷	x	x	x	x	166,632	170,566	165,478	160,255
of which: NMS-2004 ²	x	x	x	x	81,495	80,774	80,577	79,021
NMS-2007 ³	x	x	x	x	24,983	25,954	25,456	25,433
SEE ⁴	x	x	x	x	27,751	30,137	31,092	30,447
CIS ⁵	x	x	x	x	32,404	33,701	28,354	25,353
Total direct lending ⁸	x	x	x	x	42,608	45,808	45,655	44,995
of which: NMS-2004 ²	x	x	x	x	25,059	25,159	24,694	24,445
NMS-2007 ³	x	x	x	x	5,046	6,370	6,840	6,562
SEE ⁴	x	x	x	x	8,964	10,470	10,824	10,611
CIS ⁵	x	x	x	x	3,539	3,809	3,297	3,377

Source: OeNB.

¹ Excluding Yapi ve Kredi Bankasi (not fully consolidated by parent bank).² New EU member states since 2004 (NMS-2004): Estonia (EE), Latvia (LV), Lithuania (LT), Poland (PL), Slovakia (SK), Slovenia (SI), Czech Republic (CZ) and Hungary (HU).³ New EU member states since 2007 (NMS-2007): Bulgaria (BG) and Romania (RO).⁴ Southeastern Europe (SEE): Albania (AL), Bosnia and Herzegovina (BA), Croatia (HR), Montenegro (ME), Macedonia (MK), Serbia (RS), Turkey (TR).⁵ Commonwealth of Independent States (CIS): Armenia (AM), Azerbaijan (AZ), Kazakhstan (KZ), Kyrgyzstan (KG), Moldova (MD), Russia (RU), Tajikistan (TJ), Turkmenistan (TM), Ukraine (UA), Uzbekistan (UZ) and Belarus (BY), including Georgia (GE).⁶ Exposure according to BIS includes only domestically controlled banks.⁷ Lending to nonbanks by 68 fully consolidated subsidiaries in CESEE (adjusted for loan loss provision).⁸ Direct lending to CESEE according to major loan register.

Note: Due to changes in reporting, the comparability of values as from 2008 with earlier values is limited.

Table A25

Profitability of Austrian Banks' Subsidiaries¹ in CESEE

	2007	2008	2009	2005	2006	2007	2008	2009
	1 st half			Year				
<i>End of period, EUR million</i>								
Operating income	4,815	6,515	6,638	5,731	6,524	10,178	14,102	13,398
of which: net interest income	3,145	4,301	4,253	3,676	4,206	6,748	9,231	8,696
securities and investment earnings	x	58	40	x	x	x	103	50
fee an commission income	1,353	1,658	1,406	1,494	1,898	2,847	3,432	2,916
trading income	x	40	785	x	x	x	46	1,238
other income	316	458	153	561	420	583	1,291	499
Operating expenses	2,605	3,353	3,122	3,251	3,697	5,495	6,961	6,267
of which: personnel expenses	x	1,551	1,401	x	x	x	3,200	2,739
other expenses	x	1,802	1,720	x	x	x	3,761	3,529
Operating profit/loss	2,209	3,161	3,516	2,480	2,826	4,683	7,141	7,129
Allocation to provisions and impairments	x	636	2,024	x	x	x	2,277	4,829
Result after tax	1,512	2,065	1,190	1,658	1,730	3,104	4,219	1,775
Return on assets ²	1.7%	1.7%	0.9%	1.4%	1.3%	1.6%	1.8%	0.7%
Provisions ³	2.6%	3.7%	3.9%	2.8%	2.4%	2.6%	2.9%	5.3%

Source: OeNB.

¹ Excluding Yapı ve Kredi Bankası (not fully consolidated by parent bank).² End-of-period result expected for the full year after tax as a percentage of average total assets.³ Provisions on loans and receivables in proportion of gross loans to customers.

Note: Due to changes in reporting, the comparability of values as from 2008 with earlier values is limited. Furthermore some positions are only available in detail since 2008.

Table A26

Key Indicators of Austrian Insurance Companies¹

	2007	2008		2009		Change y-o-y
	Dec.	June	Dec.	June	Dec.	% change December 2009 (y-o-y)
<i>End of period, EUR million</i>						
Business and profitability						
Premiums	15,739	8,371	16,180	8,362	16,381	1.2%
Expenses for claims and insurers benefit	10,797	5,568	11,608	5,869	12,348	6.4%
Underwriting results	301	131	-119	96	132	210.9%
Profit from investments	4,168	1,194	2,370	1,245	2,729	15.1%
Profit from ordinary activities	1,773	333	411	349	744	81.0%
Total Assets	86,951	91,570	93,911	96,081	99,227	5.7%
Investments						
Total Investments	81,036	85,244	87,698	90,120	92,260	5.2%
of which: debt securities	32,989	34,988	35,209	36,376	36,397	3.4%
stocks and other equity securities ²	11,452	11,182	12,531	12,728	12,811	2.2%
real estate	4,818	4,781	5,138	5,188	5,246	2.1%
Investments for unit-linked and index-linked life insurance	8,894	9,291	9,319	10,513	12,822	37.6%
Exposure versus domestic banks	x	17,478	17,423	17,355	17,570	0.8%
Custody account claims on deposits on reinsurers	x	1,299	1,272	1,250	1,218	-4.2%
Risk Capacity (Solvency Ratio)	261.39%	x	339.70%	x	336.30%	-1.00%

Source: FMA, OeNB.

¹ Semiannual data exclusive of reinsurance transactions, based on quarterly returns.² Contains shares, share certificates (listed and not listed) and all equity instruments held by investment funds.

Table A27

Assets Held by Austrian Mutual Funds

	2006		2007		2008		2009	
	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31
<i>End of period, EUR million</i>								
Domestic securities	55,788	58,332	60,313	58,920	54,428	48,777	49,104	48,765
of which: debt securities	18,302	17,632	15,892	14,938	13,774	14,601	16,324	16,013
stocks and other equity securities	3,141	3,930	4,220	3,812	3,527	1,473	2,144	2,863
Foreign securities	103,742	110,528	114,007	106,726	94,487	78,655	80,067	89,845
of which: debt securities	69,481	70,280	71,374	66,473	61,809	57,598	57,548	61,961
stocks and other equity securities	21,882	25,186	26,231	23,723	16,598	8,899	10,064	12,663
Other assets (less remaining liabilities)	46,724	51,832	56,603	56,700	53,207	44,861	43,091	45,110
Net asset value	159,530	168,860	174,320	165,646	148,915	127,432	129,171	138,610
of which: retail funds	113,036	120,402	124,666	117,864	103,885	82,804	80,383	85,537
institutional funds	46,494	48,458	49,654	47,782	45,030	44,628	48,788	53,073
Consolidated net asset value	134,551	140,829	144,550	137,092	124,129	105,620	107,076	115,337
changed by: redemptions and sales ¹	4,462	958	1,825	-4,272	-5,060	-7,040	-768	2,399
distributed earnings ¹	1,444	2,326	1,347	2,499	1,070	1,965	930	1,767
revaluation adjustments and income ¹	-1,428	7,646	3,243	-687	-6,832	-9,505	3,153	7,629

Source: OeNB.

¹ The figures concerning the change in the consolidated net asset value are semi-annual figures.

Table A28

Structure and Profitability of Austrian Investment Companies

	2006		2007		2008		2009	
	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31
<i>End of period, EUR million</i>								
Total assets	427	537	510	544	453	504	546	642
Operating profit ¹	69	138	116	178	80	89	45	106
Net commissions and fees earned ¹	138	288	199	354	169	269	124	258
Administrative expenses ^{1,2}	74	162	90	194	96	196	88	185
Number of investment companies	27	27	27	28	29	29	29	30
Number of reported funds	2,168	2,177	2,244	2,329	2,330	2,308	2,270	2,182

Source: OeNB.

¹ All figures are cumulative for the respective calendar year.² Administrative expenses are calculated as the sum of personnel and material expenses.

Table A29

Assets Held by Austrian Pension Funds

	2006		2007		2008		2009	
	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31
<i>End of period, EUR million</i>								
Domestic securities	10,074	10,742	10,901	10,773	10,650	9,705	10,415	11,721
of which: federal treasury bills and notes	0	0	0	0	0	0	0	0
debt securities	89	116	147	137	124	142	163	169
mutual fund shares	9,921	10,589	10,722	10,603	10,499	9,543	10,228	11,520
other securities	64	37	32	33	27	20	24	32
Foreign securities	1,010	1,224	1,426	1,473	1,085	972	1,093	1,197
of which: debt securities	81	73	91	140	96	111	182	138
mutual fund shares	903	1,113	1,299	1,321	980	851	879	932
other securities	26	38	36	12	16	10	32	127
Deposits	150	173	270	282	449	790	664	539
Loans	99	93	124	158	157	154	185	182
Other assets	220	264	249	238	262	332	264	170
Total assets	11,553	12,496	12,970	12,924	12,592	11,936	12,621	13,807
of which: foreign currency	327	555	601	620	462	312	373	521

Source: OeNB.

Table A30

Assets Held by Austrian Severance Funds

	2006		2007		2008		2009	
	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31
<i>End of period, EUR million</i>								
Total direct investment	228.7	295.6	415.5	598.3	832.7	1,062.2	1,125.0	883.7
of which: euro-denominated	223.3	288.4	390.5	579.6	816.8	1,043.4	1,103.0	866.3
foreign currency-denominated	x	x	x	x	x	x	x	x
accrued income claims from direct investment	2.4	4.2	4.6	8.6	11.4	16.5	20.0	15.2
Total indirect investment	658.1	832.5	949.3	1,023.8	1,019.7	1,076.4	1,339.0	1,946.3
of which: total of euro-denominated investment in mutual fund shares	608.1	781.4	877.0	963.8	983.3	1,038.7	1,293.0	1,858.1
total of foreign currency-denominated investment in mutual fund shares	50.0	51.1	72.3	60.0	56.2	37.7	45.0	88.2
Total assets assigned to investment groups	886.5	1,128.1	1,364.8	1,622.1	1,852.3	2,138.6	2,464.0	2,830.0
of which: foreign currency-denominated	52.4	54.2	92.7	70.8	60.7	40.0	48.0	90.4

Source: OeNB.

Note: Due to special balance sheet operations total assets assigned to investment groups deviate from the sum of total indirect investments.

Table A31

Transactions and System Disturbances in Payment and Securities Settlement Systems

	2006		2007		2008		2009	
	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31
<i>Number of transactions in million, value of transactions in EUR billion</i>								
HOAM.AT								
Number	x	x	x	x	1.6	1.1	0.7	0.7
Value	x	x	x	x	2,360.2	4,363.5	4,535.2	4,769.3
System disturbances	x	x	x	x	1	4	1	4
Securities settlement systems								
Number	1.7	1.3	1.8	1.1	1.0	1.0	0.8	1.0
Value	267.1	181.5	330.0	269.8	255.4	247.0	181.2	184.1
System disturbances	0	0	0	0	0	0	0	0
Retail payment systems								
Number	216.5	232.0	237.8	253.9	255.0	272.9	272.2	302.1
Value	16.9	18.4	18.3	18.6	20.0	21.7	21.5	24.3
System disturbances	25	33	3	17	0	16	5	14
Participation in international payment systems								
Number	7.5	9.3	10.2	11.0	12.3	12.7	17.8	13.4
Value	702.2	766.6	868.9	1,077.5	997.2	997.5	675.7	549.2
System disturbances	1	3	1	0	0	0	0	0

Source: OeNB.

Note: ARTIS/TARGET has been replaced by HOAM.AT on November 19, 2007. Data refer to specific six month period.

Notes

Abbreviations

A-SIT	Secure Information Technology Center – Austria	IHS	Institut für Höhere Studien und Wissenschaftliche Forschung – Institute for Advanced Studies, Vienna
ASVG	Allgemeines Sozialversicherungsgesetz – General Social Security Act	IIF	Institute of International Finance
A-Trust	A-Trust Gesellschaft für Sicherheitssysteme im elektronischen Datenverkehr GmbH (accredited certification service provider)	IIP	international investment position
ATX	Austrian Traded Index	IMF	International Monetary Fund
BCBS	Basel Committee on Banking Supervision (BIS)	ISO	International Organization for Standardization
BIC	Bank Identifier Code	IWI	Industriewissenschaftliches Institut – Austrian Institute for Industrial Research, Vienna
BIS	Bank for International Settlements	JVI	Joint Vienna Institute
BOP	balance of payments	LIBOR	London Interbank Offered Rate
BSC	Banking Supervision Committee (ESCB)	M3	broad monetary aggregate M3
CACs	collective action clauses	MFI	monetary financial institution
CEBS	Committee of European Banking Supervisors (EU)	MRO	main refinancing operation
CEE	Central and Eastern Europe	MoU	memorandum of understanding
CEEC(s)	Central and Eastern European country (countries)	NACE	Statistical Classification of Economic Activities in the European Community
CESEE	Central, Eastern and Southeastern Europe	NCB	national central bank
CESR	Committee of European Securities Regulators	OeBS	Oesterreichische Banknoten- und Sicherheitsdruck GmbH (Austrian banknote and security printing works)
CIS	Commonwealth of Independent States	OECD	Organisation for Economic Co-operation and Development
CPI	consumer price index	OeKB	Oesterreichische Kontrollbank (Austria's main financial and information service provider for the export industry and the capital market)
EBA	Euro Banking Association	OeNB	Oesterreichische Nationalbank (Austria's central bank)
EBRD	European Bank for Reconstruction and Development	OPEC	Organization of the Petroleum Exporting Countries
EC	European Community	ÖBFA	Österreichische Bundesfinanzierungsagentur – Austrian Federal Financing Agency
ECB	European Central Bank	ÖNACE	Austrian Statistical Classification of Economic Activities
Ecofin	Economic and Financial Affairs Council (EU)	POS	point of sale
EEA	European Economic Area	PRGF	Poverty Reduction and Growth Facility (IMF)
EFC	Economic and Financial Committee (EU)	R&D	Research & Development
EIB	European Investment Bank	RTGS	Real-Time Gross Settlement
EMS	European Monetary System	SDR	Special Drawing Right (IMF)
EMU	Economic and Monetary Union	SDRM	Sovereign Debt Restructuring Mechanism (IMF)
EONIA	Euro OverNight Index Average	SEPA	Single Euro Payments Area
ERM II	exchange rate mechanism II (EU)	SPF	Survey of Professional Forecasters
ERP	European Recovery Program	STEP2	Straight-Through Euro Processing system provided by the Euro Banking Association
ESA	European System of Accounts	STUZZA	Studiengesellschaft für Zusammenarbeit im Zahlungsverkehr G.m.b.H. – Austrian Society for Payment System Research and Cooperation
ESAF	Enhanced Structural Adjustment Facility (IMF)	S.W.I.F.T.	Society for Worldwide Interbank Financial Telecommunication
ESCB	European System of Central Banks	TARGET	Trans-European Automated Real-time Gross settlement Express Transfer
ESRI	Economic and Social Research Institute, Dublin	Treaty	Treaty establishing the European Community
EU	European Union	UCIT(s)	undertaking(s) for collective investment in transferable securities
EURIBOR	Euro Interbank Offered Rate	ULC	unit labor cost
Eurostat	Statistical Office of the European Communities	UN	United Nations Organization
FATF	Financial Action Task Force on Money Laundering	UNCTAD	United Nations Conference on Trade and Development
FDI	foreign direct investment	VaR	value at risk
Fed	Federal Reserve System (U.S.A.)	WBI	Wiener Börse Index (all-share index of the Vienna stock exchange)
FMA	Austrian Financial Market Authority	WEF	World Economic Forum
FOMC	Federal Open Market Committee (U.S.A.)	WIFO	Österreichisches Institut für Wirtschaftsforschung – Austrian Institute of Economic Research
FSAP	Financial Sector Assessment Program (IMF/World Bank)	wiiw	Wiener Institut für internationale Wirtschaftsvergleiche – The Vienna Institute for International Economic Studies
FWF	Fonds zur Förderung der wissenschaftlichen Forschung – Austrian Science Fund	WKÖ	Wirtschaftskammer Österreich – Austrian Federal Economic Chamber
GAB	General Arrangements to Borrow	WTO	World Trade Organization
GATS	General Agreement on Trade in Services		
GDP	gross domestic product		
GNP	gross national product		
GSA	GELDSERVICE AUSTRIA Logistik für Wertgestonierung und Transportkoordination GmbH (Austrian cash logistics company)		
HICP	Harmonised Index of Consumer Prices		
HIPC	Heavily Indebted Poor Countries		
HOAM.AT	Home Accounting Module Austria		
IBAN	International Bank Account Number		
IBRD	International Bank for Reconstruction and Development		
ICT	information and communication technology		
IDB	Inter-American Development Bank		
IFES	Institut für empirische Sozialforschung GesmbH – Institute for Empirical Social Research, Vienna		
Ifo	Ifo Institute for Economic Research, Munich		

Legend

- x = No data can be indicated for technical reasons
- .. = Data not available at the reporting date
- 0 = The numerical value is zero or smaller than half of the unit indicated

Discrepancies may arise from rounding.

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annual

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(By Gaal, A. and M. Plank. 1998. In: Focus on Austria 4/1998, OeNB.)

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Guidelines on Operational Risk Management and Bank-Wide Risk Management

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Guidelines on Bank-Wide Risk Management

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The Guidelines on Bank-Wide Risk Management (Internal Capital Adequacy Assessment Process) give a detailed overview of assessment procedures in all major risk categories. They provide in-depth information on the different types of capital and their suitability for risk cover. Moreover, the guidelines present quantitative methods and procedures to determine the risk-bearing-capacity of a credit institution. A separate section highlights the significance of having a limit system in place that is adequate in a given risk scenario and underscores the need for efficient internal control mechanisms.

Other Publications**Banking Supervision in Austria**

www.oenb.at/en/img/banking_supervision_screen_tcm16-141715.pdf

Structured Products Handbook

www.oenb.at/en/img/phb_internet_tcm16-11173.pdf

The first part of the „Structured Products Handbook“ deals with structured bonds whose payoff properties depend on interest rate movements, and the following two parts focus on products whose payoff characteristics are shaped by equity prices and foreign exchange rates.

New Quantitative Models of Banking Supervision

www.oenb.at/en/img/new_quantitative_models_of_banking_supervision_tcm16-24132.pdf

**Off-Site Analysis Framework of Austrian Banking Supervision – Austria
Banking Business Analysis**

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