FINANCIAL STABILITY
REPORT 20

Stability and Security.

DECEMBER 2010

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.

Contents

Reports

Special Topics

Annex of Tables

Notes

Editorial close: November 18, 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

EU Support Measures Underpin Fragile Recovery – Financial Markets Still Face Challenges

Economic Recovery Stronger than Expected

In 2010, euro area economic activity was much more robust than expected. Even so, full-year GDP growth in the euro area lagged behind that in the U.S.A. and Japan. Although the upturn in the euro area was largely attributable to the contribution of net exports, domestic demand components increasingly fueled economic growth. Economic momentum varied very widely across countries. In Austria, it stood at roughly the euro area average. The recovery currently under way will remain fragile, as most countries are faced with high government debt and comparatively elevated jobless numbers. For 2011, the economy is expected to slow marginally in industrialized countries while inflation is set to remain weak. Internationally, both short-term and long-term interest rates stood at historically very low levels.

Following the sharp increase in risk premiums on several euro area countries' government bonds during 2010 due to uncertainties about fiscal sustainability, spreads shrank again in the wake of both the ratification of the European financial stabilization mechanism and the already gaugeable partial effects of the implementation of consolidation programs. Sustained high equity market volatility and the fear that certain euro area countries would have to restructure their public debt meant that, despite low yield levels, investors piled more money into the government bonds of countries they considered to have a safe rating, which contributed to a further narrowing in these yields. In parallel, however, corporate bond yields also narrowed and net capital inflows to emerging markets surged, which to some extent also induced currencies to appreciate.

In Central, Eastern and Southeastern Europe (CESEE), most economies continued to recover, with Central Europe and the CIS outperforming most of the Southeastern European countries in the region. Overall, the recovery was primarily export-led with continued sluggish momentum in domestic demand, which had to do with low lending expansion, among other factors. Once again, CESEE growth rates exceed those of the EU-15 by far, indicating that the region has resumed the catching-up process.

Financing Conditions of Austrian Households and Corporations Have Stabilized

In addition, in the wake of the world economic recovery, the Austrian economy improved markedly to the third quarter of 2010. In 2010, the domestic corporate profit situation ameliorated significantly on the back of the economic recovery, among other factors. In the first half of 2010, the corporate sector's external financing also expanded. This sector's financial strength indicators, of which some had significantly deteriorated in 2009 in the wake of the recession, stabilized in the first half of 2010. The equity-to-debt ratio remained largely unchanged, and improved profitability meant a decline in the number of insolvencies.

Growth in lending to households and nonfinancial corporations stagnated. In the first nine months of 2010, growth in household lending was driven by housing finance while the further decline in corporate lending came to

a halt. In particular, however, foreign currency loans fell steeply on a currency-adjusted basis. As of September 2010, foreign currency loans accounted for some 17.8% of loans to nonbanks.

Although the first half of 2010 saw a further increase in households' financial investment, valuation losses which had arisen during the financial crisis were recouped only in part. Owing to low interest rates, both corporate and household interest charges were relatively light at last count. In view of Austria's high share of variable rate loans compared with the rest of Europe, higher interest rates in future will result in higher interest expenses for borrowers once again.

Austrian Banks Recover, Credit Risk Costs Remain High

In 2010, the profitability of the Austrian banking system staged an overall recovery in tandem with the global economy after experiencing a tough year in 2009 due to the financial crisis. For 2010, Austrian banks anticipate unconsolidated annual net profit of approximately EUR 3 billion, which – although falling well short of prerecession levels – will exceed those of 2008 and 2009. This forecast is based on stable interest income and net fee income growth. In addition, the Austrian banking sector's trading income proved to be significantly positive once again, generating operating income of some EUR 3.8 billion as at mid-2010, 14.0% above the comparable level of the previous year. Owing to the persistent deterioration of credit quality, high risk costs will continue to hit net income. However, their steep rise of the last few periods appears to be losing steam, which at least in recent periods is reflected in flattening growth in the specific loan loss provision rate. In Austria, the latter stagnated at almost 3.1% in the first half of 2010.

After slumping in the wake of the financial crisis, growth in Austrian subsidiary banks in CESEE is now back on track. Exchange rate-effects certainly had a material impact on this moderate growth. Overall, Austrian banks' activities in the CESEE region continued to make a positive contribution to the sector's performance. For 2010, the return on assets (ROA) is expected to be around 0.9%, i.e. a slight improvement on 2009. At mid-2010, the refinancing position of Austrian banks' CESEE subsidiaries was marginally better, with the loan-to-deposit ratio standing at almost 109% (2009: 113%). The increase in credit risks, nonetheless, prompted a deterioration in the loan loss provision rate, which now amounts to 6.2%. At the same time, however, subsidiaries were able to strengthen their capital buffers, as their capital ratio was boosted to 15.1%.

Austrian banks' continued below-average capital adequacy compared with the rest of the world represents a challenge – particularly in respect of future regulatory requirements – even if their consolidated core capital ratio since 2008 has increased sharply to 9.8%[1].

Austria's insurance sector also staged a comeback in 2010. At mid-2010, domestic insurance institutions' financial income had almost returned to the prerecession levels of 2008. However, the high exposure to the financial sector, as well as low interest rates, will continue to pose risks to the insurance sector.

---

[1] *The ratio was adjusted for a one-off effect in the second quarter of 2010.*

Fragile Post-Recession Recovery

Industrialized Countries: Modest Economic Downturn Forecast for 2011

The IMF economic outlook for fall 2010 projects economic growth in the *industrialized countries* to be relatively robust in 2010, following the severe slump in 2009. Growth is currently being fueled by buoyant economic activity in Asia and the recovery of world trade, among other factors. Compared with the IMF's World Economic Outlook released in spring 2010, GDP growth for 2010 was revised down by 0.5 percentage points for the U.S.A. and up by 0.7 percentage points for the euro area. The IMF forecast of fall expects a modest slowdown in growth in the industrialized countries for 2011.

In the *U.S.A.,* real GDP in the third quarter of 2010 grew by 0.6% on the previous quarter (Q1 10: +0.9%, Q2 10: +0.4%), i.e. +3.2% year on year. In the third quarter of 2010, private consumption, private corporate investment, inventory changes and public sector demand (consumption and investment) made a substantial contribution to quarterly growth while net exports and private residential investment provided a significantly negative contribution. The residential real estate market is recovering only at a sluggish pace. The Case-Shiller price index for single-family homes is volatile, and the number of nonperforming mortgage loans is still high. In September 2010, the jobless rate remained unchanged at 9.6% and is not expected to improve significantly by end-2011. Inflation has been visibly easing since early 2010. In September 2010, the annual change in CPI and the core inflation rate were 1.1% and 0.8%, respectively. In October 2010, the IMF projected a rise in annual average CPI of 1.4% (2010) and 1% (2011). At its meeting of September 21, 2010, the U.S. Federal Reserve's Open Market Committee (FOMC) left the target range for the federal funds rate unchanged at close to 0%. It also announced it would leave the federal funds rate "at its current level for an ex-

Table 1

IMF and OeNB Economic Outlook: Industrialized Countries

	Real GDP				CPI				Current Account Balance			
	2008	2009	2010[1]	2011[1]	2008	2009	2010[1]	2011[1]	2008	2009	2010[1]	2011[1]
	Annual change, %				*Change of annual average, %*				*% of GDP*			
Industrialized countries	0.2	−3.2	2.7	2.2	3.4	0.1	1.4	1.3	−1.2	−0.3	−0.3	−0.1
U.S.A.	0.0	−2.6	2.6	2.3	3.8	−0.3	1.4	1.0	−4.7	−2.7	−3.2	−2.6
Euro area	0.5	−4.1	1.7	1.5	3.3	0.3	1.6	1.5	−0.7	−0.4	0.2	0.5
Germany	1.0	−4.7	3.3	2.0	2.8	0.2	1.3	1.4	6.7	4.9	6.1	5.8
France	0.1	−2.5	1.6	1.6	3.2	0.1	1.6	1.6	−1.9	−1.9	−1.8	−1.8
Italy	−1.3	−5.0	1.0	1.0	3.5	0.8	1.6	1.7	−3.4	−3.2	−2.9	−2.7
Spain	0.9	−3.7	−0.3	0.7	4.1	−0.2	1.5	1.1	−9.7	−5.5	−5.2	−4.8
Austria	2.2	−3.9	1.6	1.6	3.2	0.4	1.5	1.7	3.3	2.3	2.3	2.4
Austria[2]	1.9	−3.7	1.9	2.1	3.2	0.4	1.7	2.2	4.9	2.9	2.5	3.4
United Kingdom	−0.1	−4.9	1.7	2.0	3.6	2.1	3.1	2.5	−1.6	−1.1	−2.2	−2.0
Japan	−1.2	−5.2	2.8	1.5	1.4	−1.4	−1.0	−0.3	3.2	2.8	3.1	2.3

Source: IMF (World Economic Outlook), October 2010, OeNB.

[1] *Forecast.*
[2] *OeNB Forecast, December 2010.*

tended period" and support the recovery by purchasing further government bonds, if necessary.

In the *euro area,* real GDP in the third quarter of 2010 grew by 0.4% on the previous quarter (Q1 10: +0.3%, Q2 10: +1.0%), i.e. +1.9% year on year. In the second quarter of 2010, above all exports and gross fixed capital formation made a positive contribution to quarterly growth while private consumption grew at a very sluggish pace. Within the euro area, the countries registering the highest quarterly growth rates were Finland (1.3%), Austria and Slovakia (0.9%, each), as well as Germany (0.7%). By contrast, Greece suffered a drop in GDP of 1.1% on a quarterly basis. Data for Ireland, Luxembourg, Malta and Slovenia were still unavailable at the cutoff date. The HICP inflation rate climbed from 1.0% in early 2010 to 1.8% in September 2010, primarily owing to considerably higher energy prices on a year-on-year

basis. However, core inflation (excluding energy and unprocessed foods) remained unchanged at 1.0% in September 2010. In October 2010, the IMF projected equally low HICP inflation for 2011. The Governing Council of the ECB left key interest rates unchanged at 1.0% in early October 2010, but at the same time began to gradually reduce the crisis-induced liquidity provision for commercial banks. One-year tenders expired in October 2010.

The *Japanese* economy in the third quarter of 2010 grew by 0.9% on the previous quarter (Q1 10: 1.6%, Q2 10: 0.4%). In the third quarter of 2010, quarterly growth was generated primarily by private consumption while the contribution of net exports to growth further declined to zero, consistent with the strength of the Japanese yen. In August 2010, annual inflation stood at −0.9%. Deflation is expected to persist until 2011. In September 2010, the Bank of Japan inter-

Chart 1

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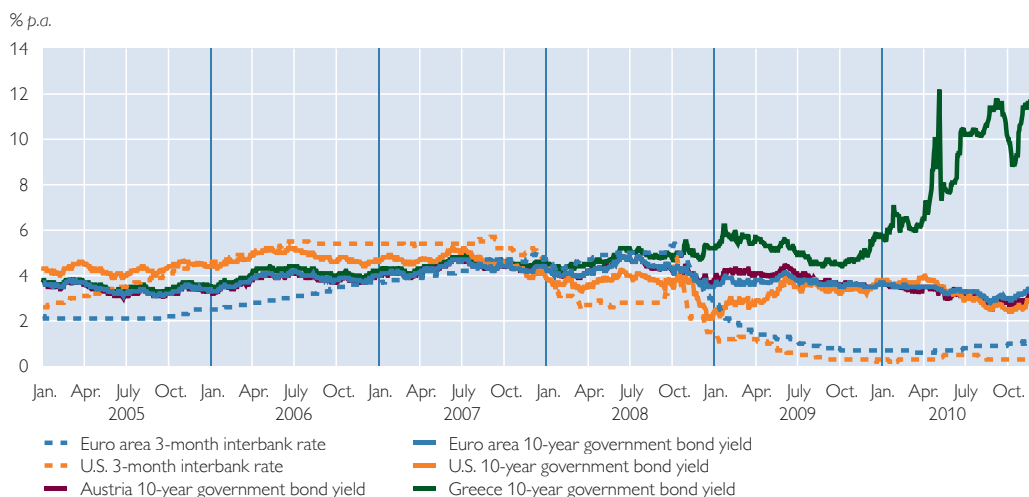**Inflation and Key Interest Rates**

% p.a.

Euro area CPI — U.S. CPI — Japan CPI
Euro area key interest rate — U.S. key interest rate — Japan key interest rate
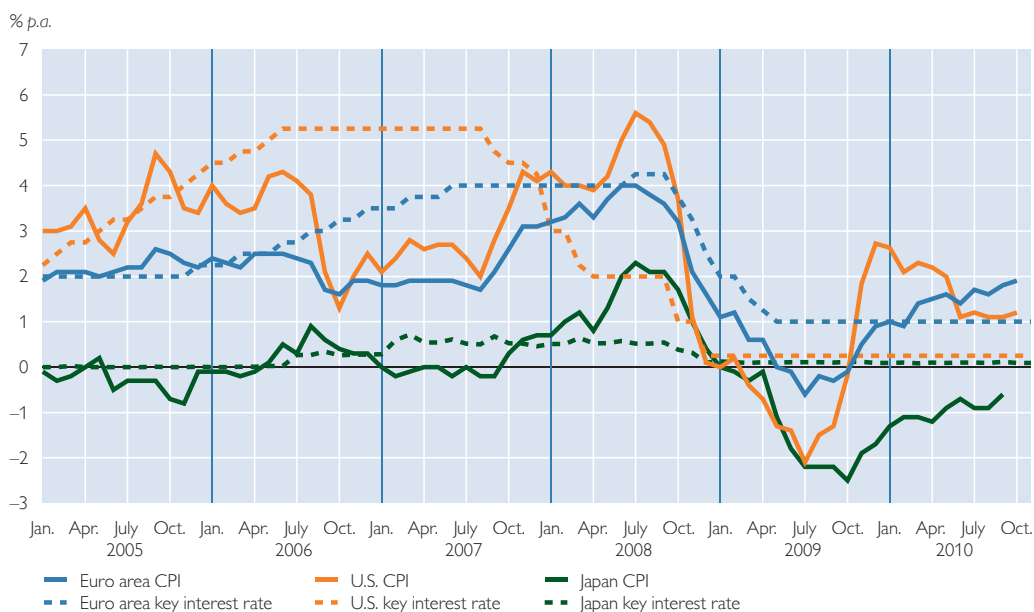
Source: Eurostat, national statistical offices, Thomson Reuters, OeNB.

Chart 2

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

% p.a.

Euro area 3-month interbank rate — Euro area 10-year government bond yield
U.S. 3-month interbank rate — U.S. 10-year government bond yield
Austria 10-year government bond yield — Greece 10-year government bond yield

Source: Thomson Reuters, OeNB.

vened in foreign exchange markets to curb the appreciation of the Japanese yen. In early October 2010, it pursued further monetary policy easing, launching securities purchase programs.

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 remained below those in the euro area. In the *government bond markets,* long-term interest rates fell by approximately 0.5 percentage points between the start of the year and November 2010. However, some differentials in 10-year government bond yields between Germany and other euro area countries again widened significantly. In early September 2010, risk premiums briefly came close to reaching the record levels of May 2010 when the rescue package for Greece was set in place. As financial markets perceive a debt restructuring risk of euro area countries with high sovereign debt, the euro area countries created the European Financial Stability Facility (EFSF) of EUR 440 billion

in early May 2010, guaranteed by euro area countries. In addition, the ECB and the national central banks of the euro area have carried out euro area government bond purchases since May 10, 2010. The ratification of the EFSF and a triple A rating assignment to the EFSF helped narrow spreads by mid-October 2010. In addition, the announcement that in Greece, the stringent saving requirements have largely been fulfilled so far despite continued recession, and the fact that the fiscal consolidation programs in Ireland, Portugal and Spain were expanded, are likely to have contributed to the reduction in the spreads. After the disclosure of including the bank bailout costs in the current government budget deficit had briefly interrupted the narrowing of government bond spreads in Ireland in early October 2010, spreads declined further until mid-October. Thereafter, however, fears of an additional recapitalization requirement for now nationalized Irish banks, statements about the potential (future) involvement of private creditors in reducing government

debt and, last but not least, the Irish government's hesitation to accept international support, resulted in the spreads re-widening by a large margin.

Only the emergence of an EU/IMF rescue package led to a narrowing of the spreads, which nonetheless widened again owing to uncertainty about

Chart 3

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

Basis points

AAA corporate bonds (EUR)   BBB corporate bonds (EUR)
AAA corporate bonds (USD)   BBB corporate bonds (USD)
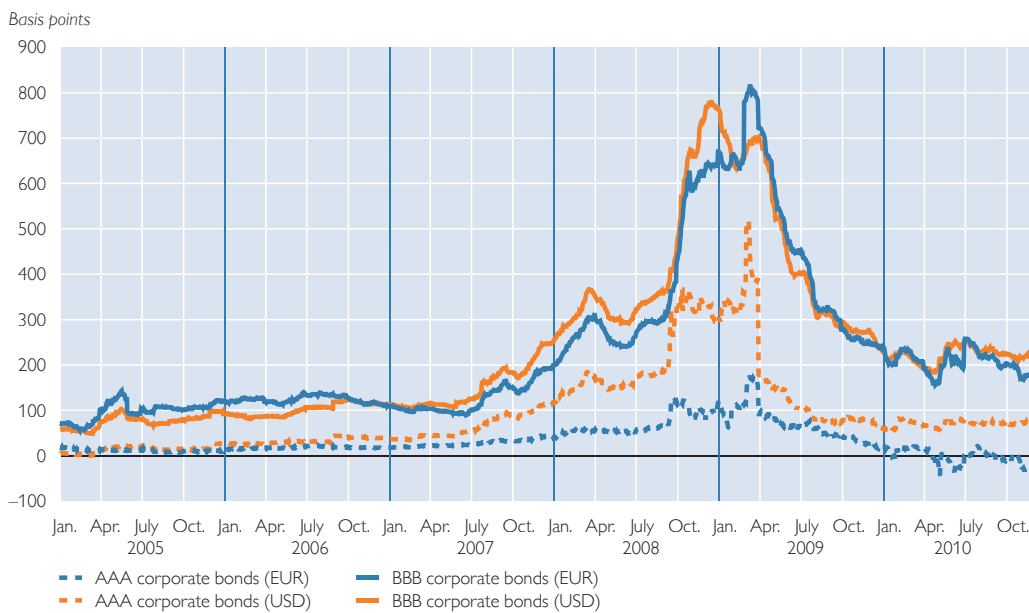
Source: Thomson Reuters, OeNB.

Chart 4

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

January 1, 2005 = 100

DJ EURO STOXX   S&P 500 COMPOSITE   TOKYO SE (TOPIX)
DJ EURO STOXX Financials   DJ TM Financials

Source: Thomson Reuters, OeNB.

Chart 5
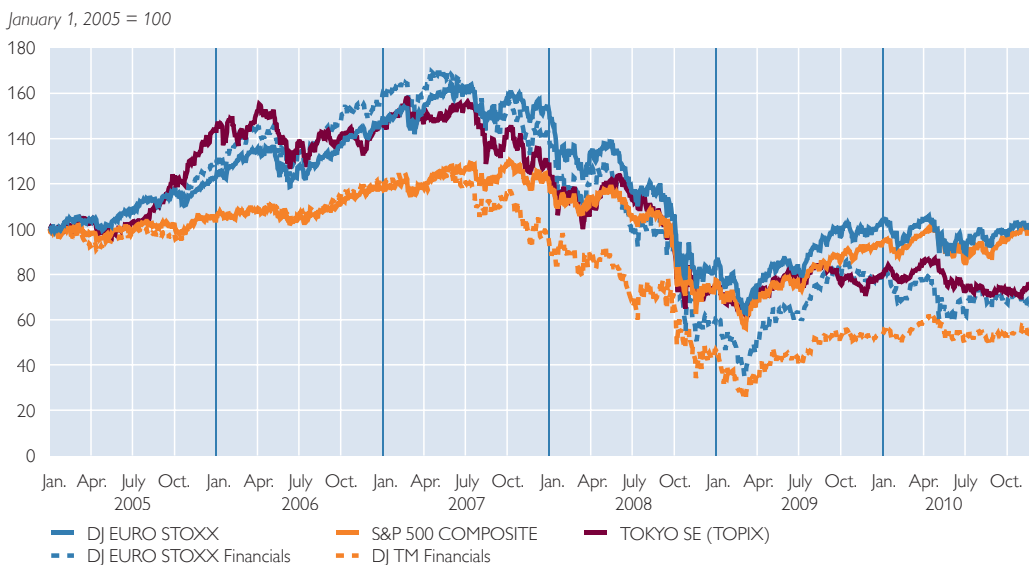
Industrialized Countries: Exchange Rates against the Euro

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

Legend: U.S. dollar — Japanese yen — Pound sterling — Swiss franc — Swedish crown
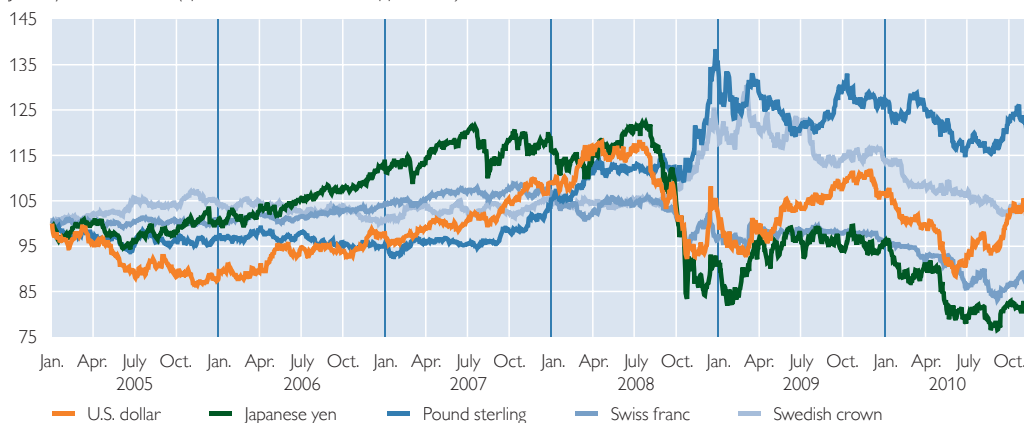
Source: Thomson Reuters, OeNB.

Note: National currency per euro unit.

whether there was enough political support in Ireland for this bailout route.

The yield spreads of *corporate bonds* in the U.S.A. and the euro area registered only relatively moderate fluctuations in 2010, which were smaller for AAA bonds than for BBB bonds. Generally, corporate bond spreads in the euro area were lower than their U.S. counterparts.

Following the *equity markets'* global recovery since their low in March 2009, they have since early 2010 fluctuated around the values attained at that time. Corporate financial results, outlooks for the U.S. and EU economies, as well as announcements of stabilization measures in the euro area, were key factors influencing equity market developments.

In the *foreign exchange* markets, the euro has firmed against other major currencies since early September 2010, recouping most of its losses suffered since the start of the year. This was attributable not only to measures for ensuring the sustainability of public debt in certain euro area countries, but also to somewhat better-than-expected GDP growth in the euro area.

CESEE Compared with Other Emerging Markets

After contracting by 0.6% in 2009, the *global economy* is likely to have expanded by almost 5% in 2010, i.e. about its average growth rate in the period from 2004 to 2007 and about 0.5 percentage points higher than expected in spring 2010. For 2011, the IMF projected growth of just over 4%. Compared with its 2010 spring forecast, the IMF revised its 2010 fall outlook for all emerging markets up by 0.7 percentage points to just over 7%, leaving its outlook for 2011 unchanged at some 6.5%. This upgrade was particularly marked in the following regions: Latin America (+1.7 percentage points), Asia (+0.7 percentage points) and Central, Eastern and Southeastern Europe (CESEE, here: excluding CIS) (+1 percentage point). The CESEE and Asia upward revisions were made in parallel with those for the euro area and Japan. Of all world regions (including the industrialized countries), Asian emerging markets will continue to make the largest contribution to global GDP growth. Emerging Asia's GDP growth of almost 9.5% in 2010 also

fostered global commodity exports and thus growth in other emerging market regions such as the CIS, in particular. In both Asia and Latin America, growth driven in 2009 by extensive stimulus measures based on macroeconomically sound initial fundamentals has already been fueled substantially by private domestic demand in 2010. Therefore, several of this region's major economies began to ease their stimulus policy as early as in mid-2010. Taking this into account and the anticipated slowdown of economic growth in the industrialized countries (especially, Japan), the IMF expects growth will decline in Asia and Latin America in 2011. Since the dampening of global growth momentum will not, however, be so marked as to send energy and commodity prices tumbling, GDP growth in the Middle East and North Africa, Subsaharan Africa and CIS is not likely to be hit in 2011. In CESEE, the modest growth slowdown in the euro area,

which is primarily hampering CESEE exports of industrialized goods, is likely to be offset by the now incipient recovery of domestic demand in most of the region's countries. The decline in the CESEE aggregate is solely due to the anticipated slowdown in currently high growth in Turkey.

In line with the shift to more domestic demand-led growth, the *current account* surplus of Asian emerging markets is likely to have further decreased in 2010. By contrast, the current account surpluses of the Middle East and North Africa, as well as the CIS region, increased on the back of rising energy and commodity prices, although falling short of pre-crisis levels. In CESEE, where in 2009 imports fell and the current account deficit contracted particularly sharply owing to the export slump and the dissipation of domestic demand growth, the deficit is likely to have increased modestly in 2010. In each region, net FDI inflows

Chart 6

Emerging Economies and Selected Industrialized Countries: GDP Forecast

Annual change in % at constant prices
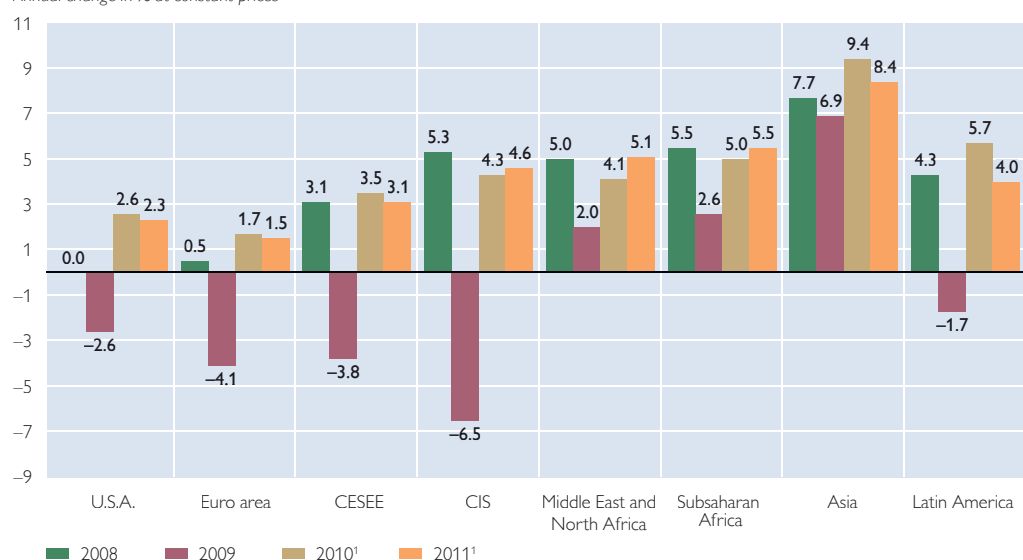
Source: IMF (World Economic Outlook), October 2010.

[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)

- ■ FDI inflows to the private sector (net)
- ■ Loans and other inflows to the private sector (net)
- ■ Current account balance
- ■ Portfolio investment inflows to the private sector (net)
- ■ Capital inflows to the public sector (net)
- ■ Change in central bank's gross foreign currency reserves

Source: IMF, OeNB.

[1] IMF 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.

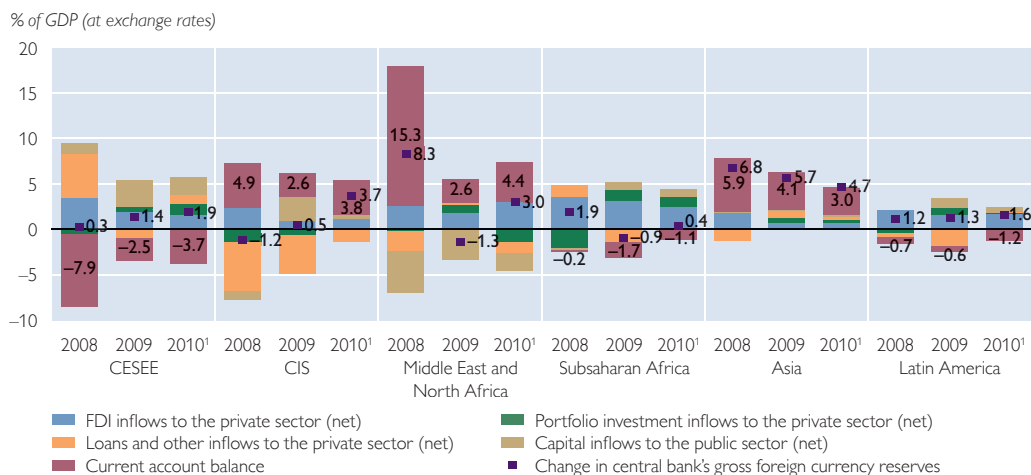were the key components of net capital flows to the private sector in 2010. In Latin America and in Subsaharan Africa, they have also been sufficient to cover moderate current account deficits. In CESEE, they are likely to have financed less than 50% of the current account deficit. Here, net capital inflow to the public sector, which was connected with the disbursements under the IMF/EU programs and the issuance of sovereign Eurobonds, was higher than in the other regions. In 2010, as in the two previous years, the CIS is the only region that seems to have experienced net capital outflows from the private sector, albeit (as in 2008) to a degree that is smaller than the current account surplus. These outflows originated from capital movements in the area of cross-border credit. By contrast, CESEE is likely to have witnessed a net inflow in this area in 2010 after registering net outflows in 2009. This inflow was far higher

than in other regions although some of these (Latin America, Subsaharan Africa) had also registered outflows in 2009.

Consolidated cross-border credit claims on private nonbanks in emerging markets by BIS reporting banks,[1] which are largely from industrialized countries, had expanded at a particularly vigorous pace in the CIS by September 2008. Its growth in the Middle East and North Africa and, to a lesser extent, in CESEE had also been above-average. The slump in consolidated cross-border claims on private nonbanks seen afterwards – in the period up to end-2009 – was steepest in the CIS, and CESEE and Latin America also witnessed a modest decline in this respect. In the second half of 2009, only the CIS registered a further drop. In the first half of 2010, Asian emerging markets registered a sharp rise in consolidated claims on private nonbanks. Latin America, as well as the Middle East and North

[1] *Excluding credit claims on offshore financial centers.*

Chart 8

Emerging Markets: Spreads of Government Bonds Issued Abroad in Foreign Currency

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

■ H1 07 average   ■ Feb. 2009 average   ■ Nov. 2010 average
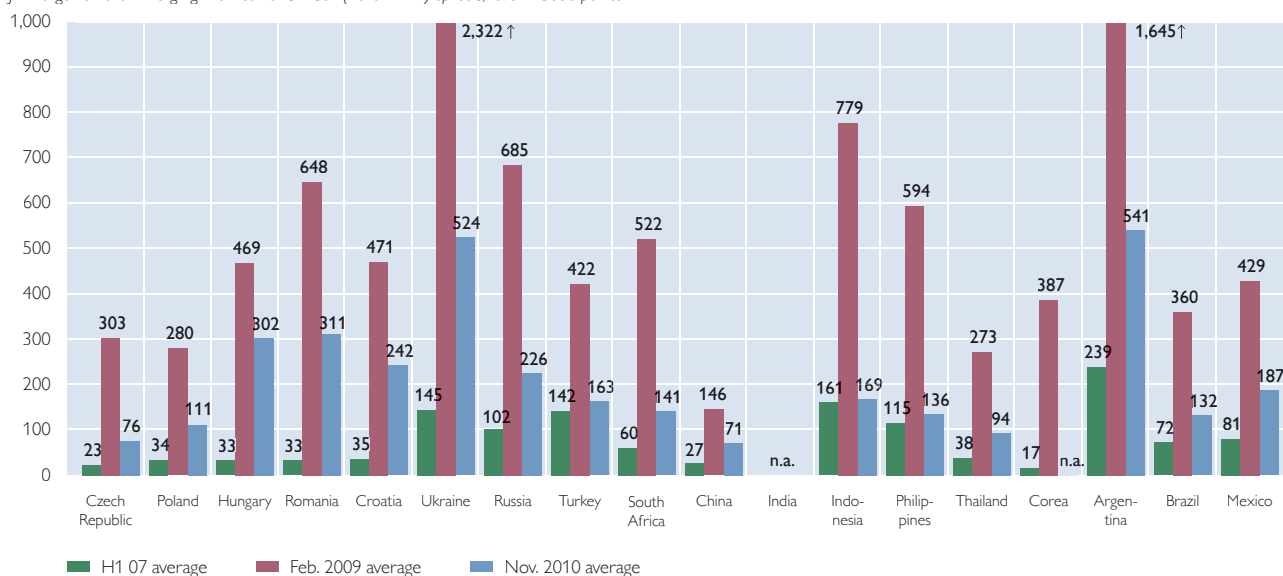
Source: Bloomberg, Thomson Reuters, OeNB.

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

Africa regions, experienced a similar phenomenon, albeit on a far smaller scale, while claims on CESEE stagnated.

In the *financial markets (equity markets, international bond markets) of emerging economies,* the decrease in international investors' risk aversion, the low interest rates in industrialized countries, widening interest rate gaps, and projected growth and currency appreciation in many emerging markets, resulted in strong net inflows in 2010. According to the IMF, emerging markets accounted for more than 50% of total global equity issues in the first half of 2010, with a high share of issuers hailing from Asia. In addition, total international bonds issued by issuers from emerging markets (with a significant share from – mostly sovereign – issuers

from CESEE and the CIS) exceeded the volume of corporate bonds issued in industrialized countries. Moreover, investors increasingly opted for emerging market debt securities denominated in national currency. Uncertainties in the international financial market owing to 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 signs of investors again failing to differentiate properly between risks, the medium-term risks of bubbles, overheating, excessive currency appreciation in emerging markets with an open (fully liberalized) financial account[2] and both internal and external imbalances are on the rise.

[2] *According to current IMF definitions of the balance of payments, transactions that were previously included under the capital account (e.g. FDI, portfolio investment, loans) are now shown in the financial account.*

Varying Pace of Economic Recovery in CESEE[3]

The economic upturn and gradual financial market recovery continued in CESEE (here: including the European part of the CIS) in the second and third quarters of 2010, albeit at a varying pace. The banking sector reflected this development: With continued high credit risk across the entire region, profits started to largely stabilize in Central Europe while further declining in Southeastern Europe. In the currency markets, countries with a flexible exchange-rate regime mostly suffered modest exchange rate losses against the euro while equity market developments were broadly in line with the corresponding growth outlooks.

For most of the countries under review,[4] export demand, which had bounced back strongly, was responsible for GDP *growth*. The upsurge in exports triggered inventory changes at the very latest in the second quarter of 2010, making a positive contribution to GDP growth on a 12-month basis, with inventory build-ups accelerating (in most countries) and, in others, inventory rundowns slowing. Only Croatia experienced a slowdown in inventory build-up, which resulted in a negative contribution to growth.

In the second quarter of 2010, GDP growth was strongest in Ukraine (5.9%), Russia (5.2%), Slovakia (4.7%) and Poland (4.0%) on a 12-month basis. Particularly in Ukraine, the country that was hit hardest by the crisis of those under review, the robust growth

rate is also attributable to base effects. In Russia, Ukraine and Poland, private consumption growth accelerated too. In almost each country under review, gross fixed capital formation continued to shrink in the second quarter of 2010 on a 12-month basis. Russia, which registered an increase in gross fixed capital formation of 9%, is the sole exception in this respect. In the region under review, GDP growth in the second quarter of 2010 was weakest in Southeastern Europe: the Bulgarian and Romanian economies stagnated while Croatia's shrank (–2.5%) on a 12-month basis.

Provisional figures for the third quarter of 2010 showed that GDP growth accelerated in the Czech Republic and in Hungary whereas it slowed markedly in Ukraine and Russia, partly owing to weather-induced slumps (losses arising from a record heat wave and drought).

The previously relatively high deficits on the *combined current and capital account*[5] continued to decrease in the countries of Southeastern Europe. In the four quarters to mid-2010, for instance, the deficits in Croatia, Bulgaria and Romania came to 3.0%, 4.3% and 5.0% of GDP respectively. In Bulgaria's case, this decline corresponded to a correction of almost 13 percentage points, compared with the previous period to mid-2009. In the Central European countries too, the already previously modest current and capital account deficits continued to decrease. Whereas the Czech Republic (–0.3% of GDP), Poland (–0.8%), Slovenia

---

[3] For a detailed description of macroeconomic developments in these countries, see the article "Recent Economic Developments" in the OeNB publication "Focus on European Economic Integration Q4/10".

[4] The focus of this section is on Bulgaria, Croatia, the Czech Republic, Hungary, Poland, Romania, Russia, Slovakia, Slovenia and Ukraine.

[5] 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 the capital account (e.g. FDI, portfolio investment, loans) are now shown in the financial account.

Chart 9

Current and Capital Account Balance and Its Financing

Moving sum of four quarters in % of GDP of this rolling period
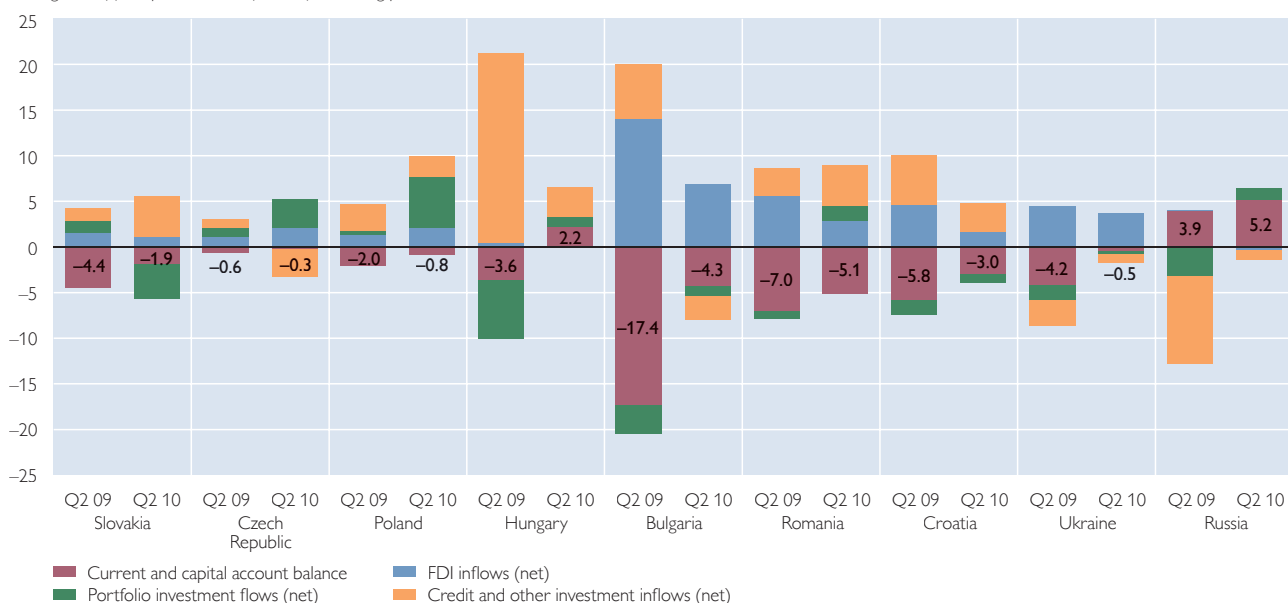
Source: ECB, national central banks, OeNB.

(–1.2%) and Slovakia (–1.9%) showed negative balances, Hungary's deficit (–3.6% of GDP) turned into a surplus (2.2% of GDP). In Ukraine, the combined current and capital account deficit was reduced from 4.2% to 0.5%. In general, these balance improvements were largely attributable to export growth whereas, in previous quarters, they had primarily resulted from a slump in imports. In Russia, despite the ruble's appreciation and an increase in domestic and, hence, import demand, the current and capital account surplus continued to grow – to 5.2% – owing to rising oil prices, in particular.

The *financial account* balance was positive in almost all the countries under review in the four quarters to mid-2010 – only Russia showed a slight deficit. In Bulgaria and Ukraine, the financial account's largest component was (net) FDI whereas its largest component in Slovenia, Poland, Russia and the Czech Republic was (net) portfolio investment, as was "(net) other invest-

ment" (especially, loans) in Slovakia, Hungary, Romania and Croatia. In Bulgaria and Ukraine, portfolio investment and other investment recorded net capital outflows. In Slovenia, Slovakia, Romania and Croatia, net FDI inflows were not enough to cover the (reduced) deficit of the combined current and capital account.

IMF and/or IMF/EU stabilization programs continue to be operative in Hungary (albeit suspended since July 2010), Romania and Ukraine. In Romania, a reform of the pension scheme was essential in paving the way for the release of further disbursements. The IMF therefore transferred its sixth tranche (EUR 0.9 billion) and the EU its third tranche (EUR 1.2 billion). For Ukraine, a new IMF stand-by arrangement (totaling EUR 12.8 billion) has been in place since summer 2010.

The impact of the recession or the slump in growth in 2009 continued to have an adverse effect on *government*

budgets. In 2010, however, budget deficits are unlikely to increase sharply year on year. Hungary is set to have one of the lowest deficits as a result of consolidation measures implemented in 2007–2009. The Hungarian government intends to tackle further budget consolidation over the next three years to a substantial extent by increasing revenues via an increase in taxes in the energy and telecommunications sectors, and via the introduction of a bank levy (in summer 2010). In compliance with the (currently suspended) credit agreement with the IMF and the EU, Hungary's target deficit is 3.8% of GDP for 2010 and less than 3% for 2011. Government debt (as a percentage of GDP) is expected to keep rising in every country under review in 2010, with the smallest increase to be seen in Hungary, where the debt ratio at almost 80% of GDP is nonetheless by far the highest among the countries under review. Government debt is likely to increase the most in Slovakia, Romania and Poland; in the former two, however, this rise will be from a relatively modest base. In Poland, gov-

ernment debt could climb to more than 55% of GDP. In all the EU Member States under review, excessive deficit procedures (EDP) are now in progress. Bulgaria was the last country in this group for which an EDP was opened, due to its deficit revision for 2009.

In September 2010, *annual inflation* was much lower than in March this year especially in Ukraine, but also in Hungary and Poland, although it had ticked up again to some extent in August and September. In Ukraine, the latest acceleration resulted from a rise in food and gas prices. Only Bulgaria (rise in food prices partly induced by crop failures in Russia) and Romania (increase in VAT) saw much higher annual inflation in September 2010 than in March this year.

Among the *currencies* of the countries under review which have not yet adopted the euro and do not have a fixed or quasi-fixed currency peg, the Czech koruna was the only currency to (further) appreciate against the reference currency from March to September 2010. Currency depreciation in this period was seen in Romania (−4.1%),

Chart 10

National Currencies and the Euro

Euro per unit of national currency, change in %

Legend:
- Dec. 31, 2004 – June 29, 2007
- June 29, 2007 – Sep. 12, 2008
- Sep. 12, 2008 – Feb. 17, 2009
- Feb. 17, 2009 – Nov. 22, 2010
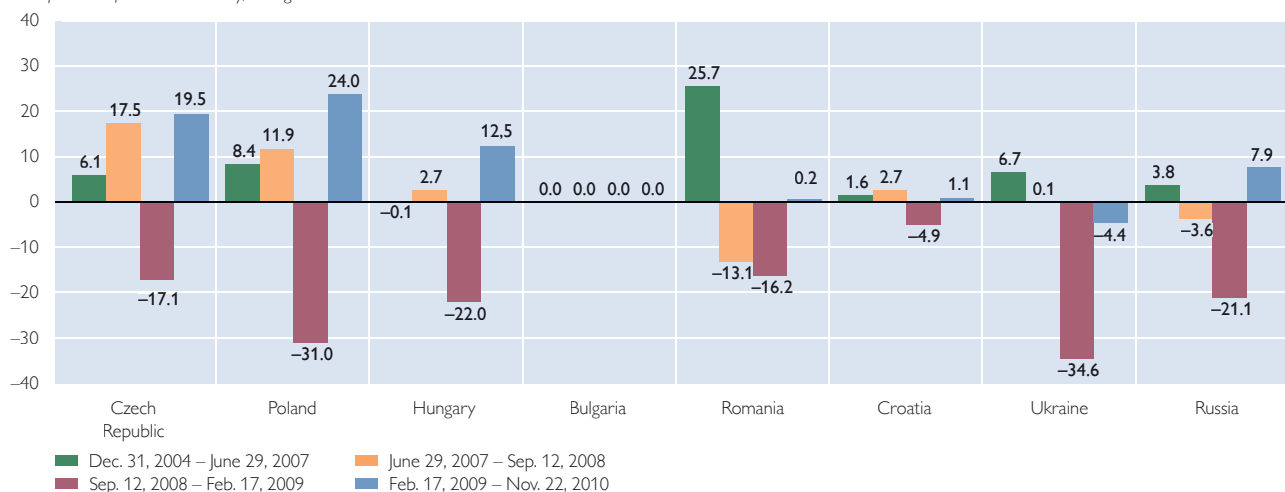
Source: Thomson Reuters, OeNB.

Poland (–2.9%), Hungary (–3.6%) and Russia (about –4%). By contrast, the Ukrainian hryvnia remained stable. In September 2010, however, the country's central bank sold foreign exchange (USD 0.6 billion) in a bid to support the currency. Recently approved additional reserves requirements are currently being used for the same purpose. Compared with the historical record lows of February 2009, however, the currencies of the Czech Republic and Poland and, to lesser extent, those of Hungary and Russia appreciated sharply. In September 2010, the Czech koruna was at its pre-crisis levels of mid-September 2008. The Polish złoty, the Hungarian forint, the Romanian lei and the Russian ruble were weaker by some 15% and the Ukrainian hryvnia weaker by about 38%. In September 2010, the Russian central bank widened the trading band of the ruble

against a basket of currencies to create some scope for further (controlled) appreciation but also to increase the depreciation risk to dampen speculative capital inflows.

In almost all the countries under review, the spreads of *short-term interbank rates* relative to the euro area were down from March to September 2010. Only Croatia saw a slight increase (at a low level). The lowest interest rates were seen in the Czech Republic, Bulgaria and Croatia, followed by Poland and Russia. Yields on *10-year government bonds denominated in national currency* decreased slightly in Slovakia and the Czech Republic, which had the lowest yields to date of the countries under review, between March and September 2010; however, spreads widened owing to the larger yield decline of euro area reference bonds. In the other countries of the group, yields

Chart 11

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

Credit levels as at end-Q2 10, % of the moving sum of GDP of four quarters

- Domestic credit to households in national currency (left-hand scale)
- Domestic credit to households in foreign currency (left-hand scale)
- Domestic credit to the corporate sector in national currency (left-hand scale)
- Domestic credit to the corporate sector in foreign currency (left-hand scale)
- Cross-border credit to the corporate sector (left-hand scale)
- Shares of foreign currency credit as a percentage of credit to households (right-hand scale)
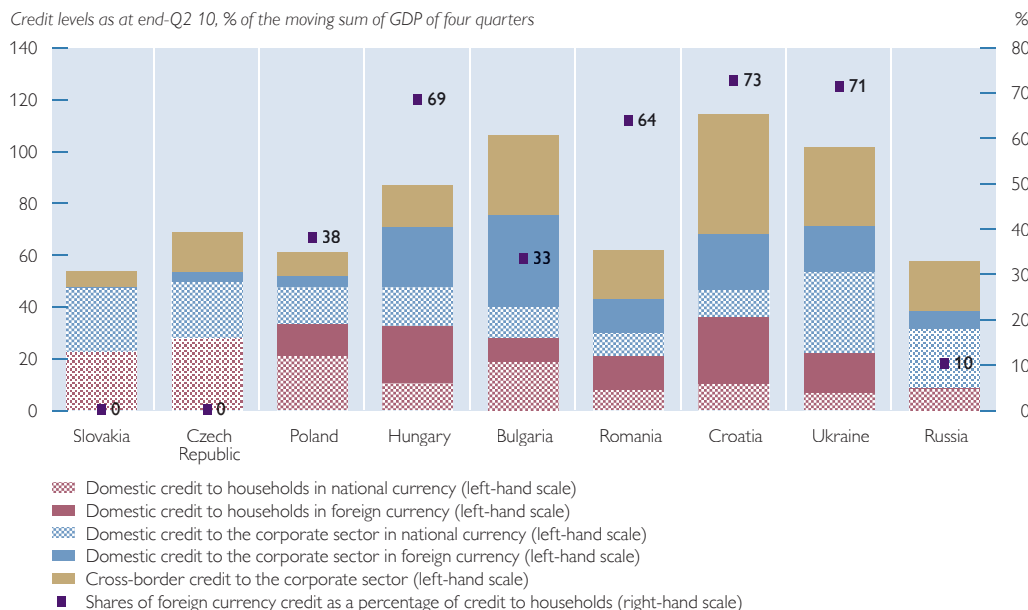
Source: ECB, Eurostat, national central banks, national statistical offices, OeNB.

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

were at roughly the same level in September 2010 as in March 2010, which also meant a widening in spreads. In the *equity markets,* most countries under review saw equity price gains. In Croatia and Slovenia, where growth outlooks were subdued, the share price index fell, however.

In the *credit markets,* annual exchange rate-adjusted growth in credit to the private sector (households and companies) was in positive single digits in most of the countries under review at mid-2010. In the Czech Republic, Ukraine and Russia, however, the volume of lending stagnated while visibly shrinking in Hungary. Broken down by sector, a (to some extent) very heterogeneous picture emerges.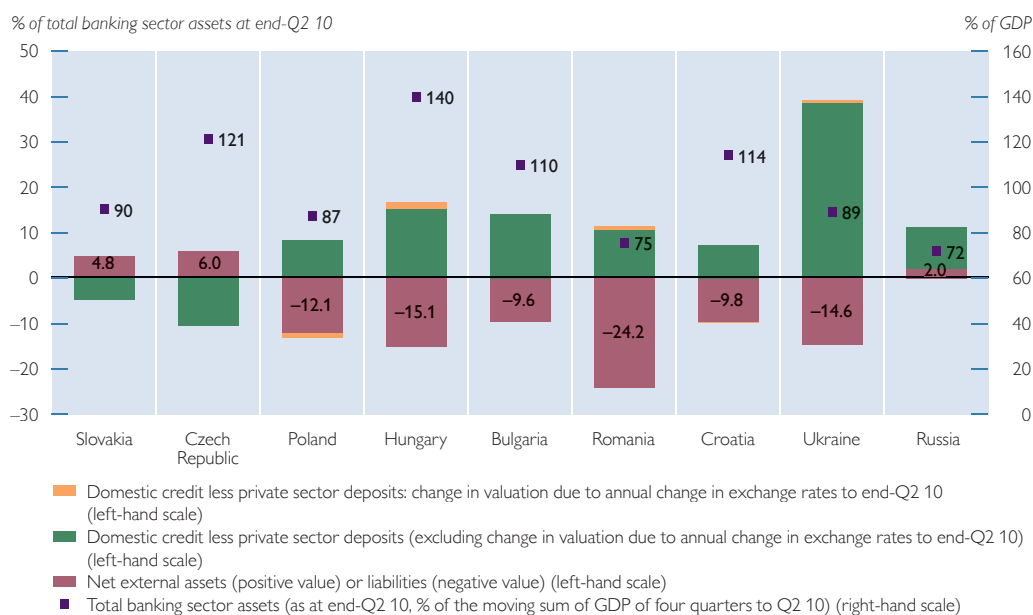 The volume of *outstanding corporate loans* shrank sharply not only in Hungary but also in Slovakia, the Czech Republic and in Poland. (In the Czech Republic and in Hungary, however, this was partly offset by direct foreign cross-

border loans.) By contrast, the volume of *outstanding household loans* shrank markedly only in Ukraine. Overall, Romania, Croatia, Ukraine and Russia saw a more favorable development in corporate lending than in household lending; in the other countries under review, this was the exact reverse.

In Bulgaria, Romania and Croatia, *foreign currency loans (including exchange-rate indexed loans) to households* grew at a rapid pace year on year on a currency-adjusted basis to mid-2010 while the corresponding loans denominated in national currency declined. Foreign currency loans grew modestly in Poland, but the pace was far slower than that of loans denominated in national currency. At some 70%, the *share of foreign currency loans as a percentage of household lending* was still very high in Hungary, Romania, Croatia and Ukraine at the end of the second quarter of 2010. By contrast, total household lending denominated in foreign

Chart 12

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

% of total banking sector assets at end-Q2 10   *% of GDP*

- ▬ Domestic credit less private sector deposits: change in valuation due to annual change in exchange rates to end-Q2 10 (left-hand scale)
- ▬ Domestic credit less private sector deposits (excluding change in valuation due to annual change in exchange rates to end-Q2 10) (left-hand scale)
- ▬ Net external assets (positive value) or liabilities (negative value) (left-hand scale)
- ■ Total banking sector assets (as at end-Q2 10, % of the moving sum of GDP of four quarters to Q2 10) (right-hand scale)

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

currency was very low in the Czech Republic and in Slovakia, as it also was in Russia.

At the end of the second quarter of 2010, *the volume of outstanding domestic loans exceeded that of domestic deposits (in terms of total assets)* in all the countries under review, except for Slovakia and the Czech Republic. In the Ukrainian banking sector, the gap between domestic loans and deposits was particularly wide. In addition, the banking sector's net external liabilities did not cover the entire financing requirement of the domestic credit overhang. The Romanian banking sector had significantly high net external liabilities (mainly to foreign parent banks) at the end of the second quarter of 2010. On a 12-month basis to mid-2010, the overhang of loans to deposits (in terms of total assets) had substantially declined only in Bulgaria, Ukraine and Russia and, in each case, due to both the asset and the liability side. Banking sector total assets ranged between 72% and 90% of GDP in Slovakia, Poland, Romania, Ukraine and Russia, and between 110% and 140% of GDP in the other countries under review.

Credit risk in the banking sector in terms of the *share of nonperforming loans as a percentage of total domestic lending to nonbanks* was still markedly higher at the end of the second quarter of 2010 than before the crisis. The heterogeneous economic recovery across the region will induce an equally varied decline in nonperforming loans. The low level of lending growth makes it difficult to reduce this share. From mid-2009 to mid-2010, the steepest rise in the share of nonperforming loans (in percentage points) was seen in Ukraine, followed by Romania, Bulgaria and Hungary. In most Central and Southeastern European countries (except for Hungary, Bulgaria and Croatia), the increase in the share of nonperforming loans had slowed down in the first half of 2010, compared with the second half of 2009.

As regards *profitability in the banking sector,* profits grew moderately in most Central European countries in the first half of 2010 on a 12-month basis. In Southeastern Europe, however, profits fell on a year-on-year basis, with Romania even suffering losses. In Ukraine, the banking sector significantly reduced its losses, but they were still at a high level in the first half of 2010. This situation was attributable to a steep increase in loan loss provisions on the back of a rise in nonperforming loans. Russia's banking sector, in contrast, registered the strongest profit growth among the countries under review. Capital adequacy was for the most part higher at mid-2010 than at end-2009, the two exceptions being Hungary and Russia where capital adequacy fell by 2 percentage points in each case. At 18.9%, however, capital adequacy in Russia continues to be high. The sharpest rise was registered by Croatia (more than 3 percentage points) and Ukraine (3 percentage points). As a result, the capital adequacy ratio ranged between 12% and 15% in Slovakia, the Czech Republic, Poland, Romania and Hungary, and between 18% and 23% in Croatia, Bulgaria, Russia and Ukraine at mid-2010.

Chart 13

Banking Sector: Credit Quality

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

	NPLs	LLPs	NPLs	LLPs	NPLs	LLPs	NPLs	LLPs	NPLs	LLPs	NPLs	LLPs	NPLs	LLPs	NPLs	LLPs	NPLs	LLPs
Q2 09	4.2	2.6	4.4	2.7	6.3	3.2	4.8	2.5	4.0	2.7	19.5	5.9	4.2	2.7	29.9	10.8	17.3	6.9
Q2 10	6.1	3.5	6.2	3.3	8.5	4.0	8.9	4.5	8.3	5.4	26.2	9.8	6.9	3.7	40.2	n.a.	20.1	9.7

Country groupings (left to right): Slovakia, Czech Republic, Poland, Hungary, Bulgaria, Romania, Croatia, Ukraine, Russia
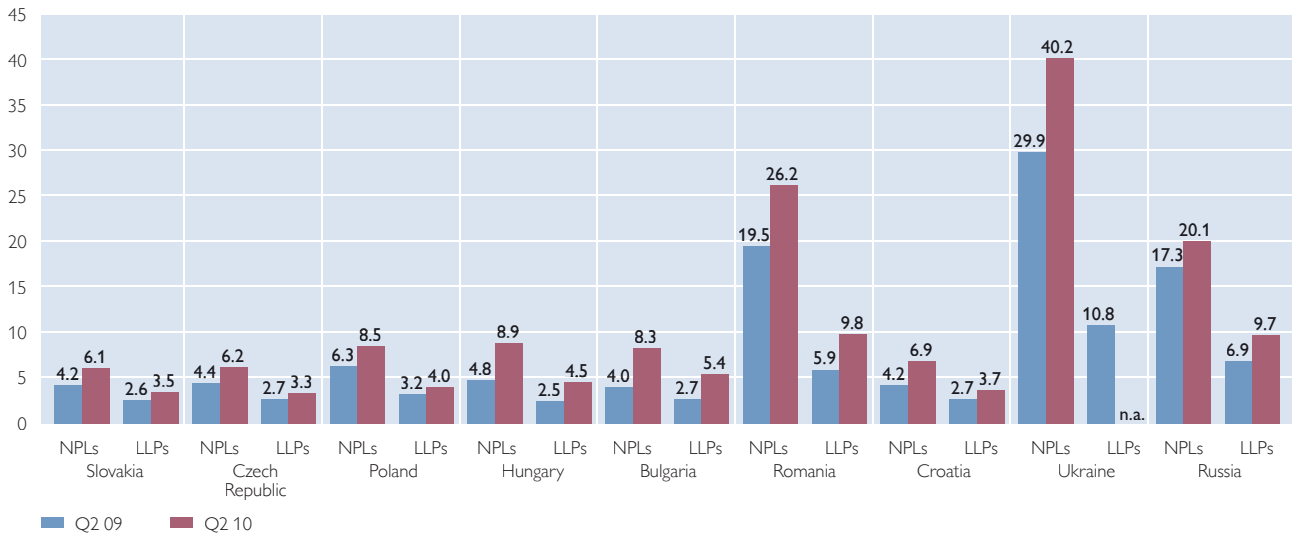
Source: IMF, national central banks, OeNB.

Note: Data are not comparable across countries. NPLs include substandard, doubtful and loss loans. Poland: including so-called irregular loans. Poland: loan loss provisions as at Q4 09 instead of Q2 10. Ukraine: NPLs as at Q4 09 instead of Q2 10.

Chart 14

Banking Sector: Profitability

Return on equity (ROE) and return on assets (ROA), in %

	ROE	ROA	ROE	ROA	ROE	ROA	ROE	ROA	ROE	ROA	ROE	ROA	ROE	ROA	ROE	ROA	ROE	ROA
H1 09	7.2	0.6	18.3	1.3	10.2	n. a.	14.4	1.1	11.8	1.4	0.6	0.1	8.9	1.2	-24.6	-3.2	0.3	0.0
H1 10	9.4	0.9	19.4	1.5		0.9	11.1	1.0	7.4	1.0	-1.6	-0.1	6.9	1.0	-13.3	-1.9	10.9	1.7

Country groupings (left to right): Slovakia, Czech Republic, Poland, Hungary, Bulgaria, Romania, Croatia, Ukraine, Russia
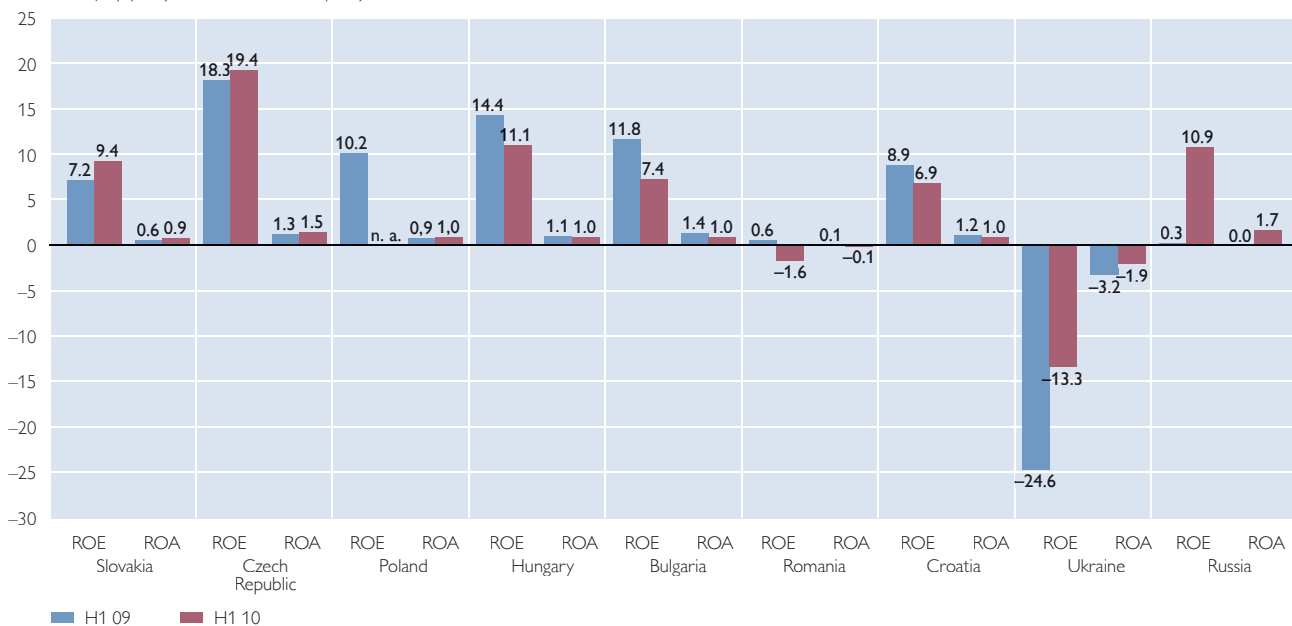
Source: IMF, national central banks, OeNB.

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

Financing Conditions Stabilize for Real Economy

First Signs of Easing in Corporate Financing

Economic Recovery in Austria over the Year 2010

After stagnating in early 2010, the Austrian economy resumed its recovery toward the middle of the year. The main drivers of this development were the rebound of the world economy and in particular the robust economic growth observed in Germany. The dynamic growth in exports mainly benefited the Austrian manufacturing sector. In fact, by mid-2010 this sector had already made up half of its previous slump in production, which had dropped by some 20% in the course of the crisis. Thanks to marked improvements in manufacturing capacity utilization, the contractionary phase of the investment cycle came to an end in the third quarter of 2010. This investment growth was driven by investments in equipment, while construction investment continued to decline.

From the second half of 2009 onward, the substantial improvement in the economy also fueled a recovery in corporate profits, which had shrunk considerably during the crisis. In the third quarter of 2010, gross operating surplus (including mixed income of the self-employed) was up 8.5% year on year.[1] Not only was this growth important for the stability and creditworthiness of Austrian companies, it also buoyed their internal financing potential.

External Financing Sees Another Slight Gain

The corporate sector's external financing has also shown a slightly more dynamic development in 2010 compared to 2009. According to national financial accounts data, the volume of external financing came to EUR 4.1 billion[2] in the first half of 2010, which was approximately one-quarter higher than a year earlier. However, this figure was still nowhere near the levels reached prior to the crisis. This growth was driven by the increased use of equity instruments, the volume of which climbed from EUR 0.4 billion to EUR 2.2 billion. At the same time, debt financing slackened in comparison to the first half of 2009, falling from EUR 2.9 billion to EUR 1.8 billion. Thus the share of equity in the corporate sector's total liabilities augmented to 55% in the first half of 2010.

Bank Lending Bottoms Out

In recent months, bank lending has begun to show some signs of recovery. According to MFI balance sheet statistics, the annual rate of change in Austrian bank lending (adjusted for reclassifications, changes in valuations and exchange rate effects) had stopped declining by the end of the third quarter of 2010 (September 2010: ±0.0%).[3] Short-term loans have continued to decline, while lending at longer maturities has gained momentum in the course of the year. At the same time,
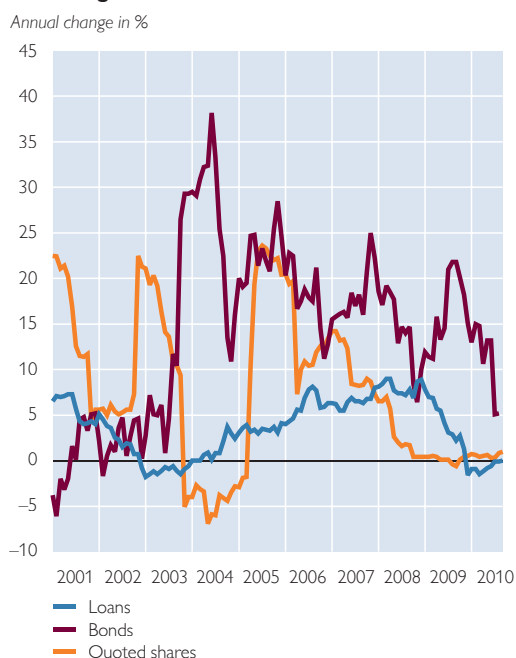
---

[1] This figure refers to the Austrian economy as a whole. Quarterly values are not published for individual economic sectors.

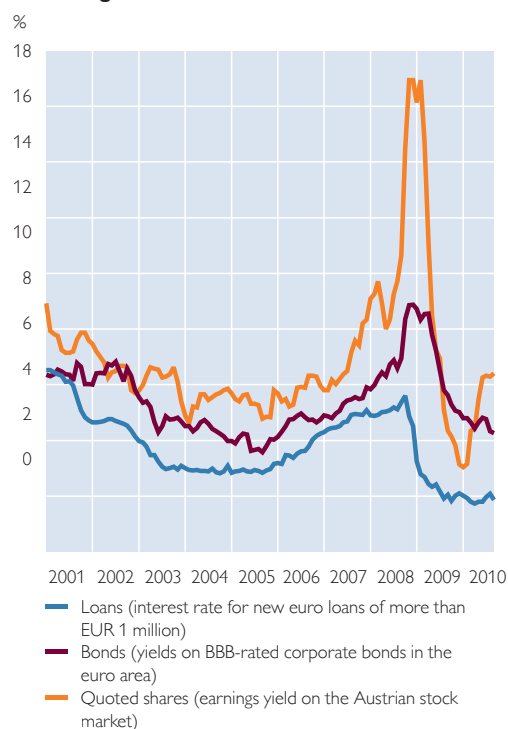[2] Adjusted for foreign-controlled holdings in special purpose entities (SPEs).

[3] For more information on the development of bank loans, see the OeNB's lending report (Kreditbericht; available in German only).

Chart 15

Volumes and Conditions for Key Elements of Corporate Financing

Financing Volumes

Annual change in %

Financing Conditions

%

Loans
Bonds
Quoted shares

Loans (interest rate for new euro loans of more than
EUR 1 million)
Bonds (yields on BBB-rated corporate bonds in the
euro area)
Quoted shares (earnings yield on the Austrian stock
market)

Source: OeNB, Thomson Reuters, Wiener Börse AG.

net borrowing has returned to positive levels, meaning that bank loans made a slightly positive overall contribution to growth in the corporate sector's external financing.[4]

This recovery appears to be rooted in both the supply and demand sides. On the one hand, demand for loans has strengthened on the back of growth in investments. On the other hand, the results of the Eurosystem Bank Lending Survey for Austria indicate that banks have not tightened their credit standards any further since mid-2009. In absolute terms, however, corporate lending conditions can still be considered restrictive by historical comparison, as they were tightened steadily between mid-2007 and mid-2009. This

caution primarily reflects the banks' still-careful assessment of corporate creditworthiness in the current economic environment.

The number of companies for which access to financial funds has become more difficult due to deteriorated creditworthiness indicators continued to sink in the first half of 2010. Between the beginning of 2009 and mid-2010, the Austrian Institute of Economic Research (WIFO) regularly carried out special surveys commissioned by the OeNB on current lending terms and conditions in Austria. On the one hand, these surveys have revealed that the share of companies facing tighter lending conditions was consistently far higher than that of

[4] *As national financial accounts data were available through the second quarter of 2010 at the time of writing, the figures on growth contributions refer to the first half of 2010.*

Chart 16

Net Share of Companies Reporting Tighter Lending Conditions for New Loans

Industries

Shares in %
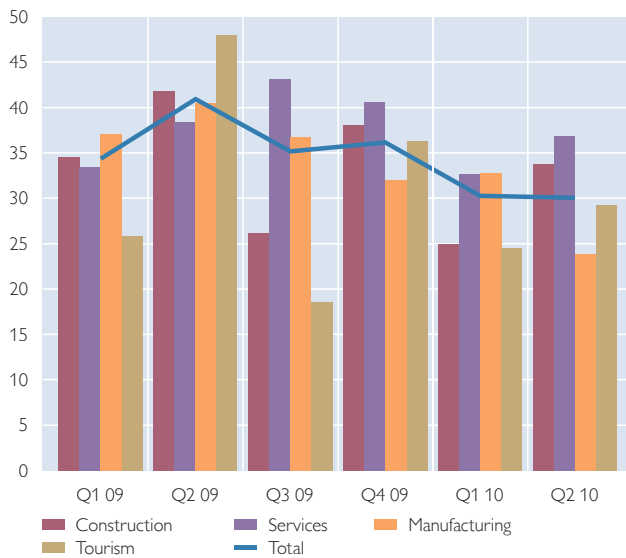
Number of Employees

Shares in %
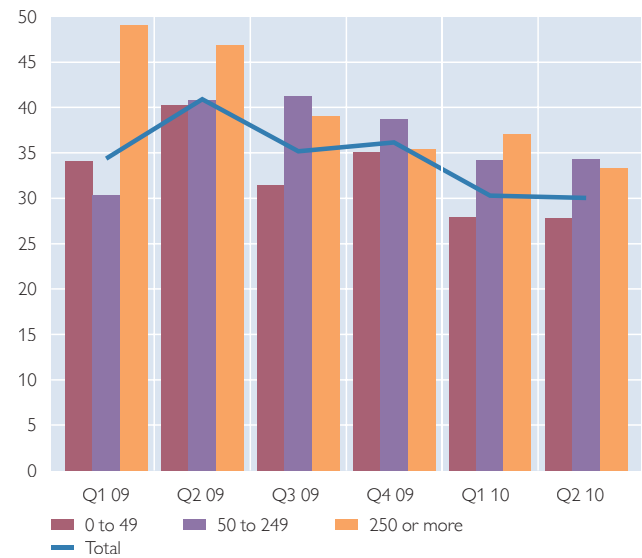
Source: WIFO.

companies reporting an easing of credit terms. At the same time, the survey results also indicate that the former share has diminished markedly since mid-2009. This relaxation of credit terms was observed in all industries and in companies of all sizes, and it was especially pronounced in manufacturing and tourism. This trend suggests that access to financial funds is not likely to stand in the way of economic recovery in the enterprise sector.

Financing costs have continued to ease the burden on loan financing. In the third quarter of 2010, interest on lending remained at historically low levels after the massive key interest rate

cuts adopted by the ECB in 2008 and 2009. In September 2010, interest rates for new loans of up to EUR 1 million to nonfinancial corporations stood at 2.4%, while those for loans exceeding EUR 1 million came to 1.9%, i.e. in both cases more than 3½ percentage points lower than in October 2008.

In contrast, foreign lending continued to slip, even though the net decline fell from EUR 1.3 billion to EUR 0.8 billion. This category mainly refers to intracompany loans, to issues of debt securities through financial subsidiaries abroad, and in part to loans from foreign banks.

Box 1

OeNB Lending Reports: Analyses of Bank Lending in Austria since Outbreak of Financial Crisis

As the crisis worsened in early 2009, more and more representatives of companies and interest groups noted that Austrian banks had adopted highly restrictive corporate lending policies. In response, the Austrian Federal Minister of Economy, Family and Youth and the governor of the OeNB agreed that the OeNB would cooperate with the interest groups in preparing a study on Austrian bank lending with a special focus on corporate loans. The first lending report appeared in April 2009. Given the persistence of tight lending standards, four more issues of the lending report had been prepared and published on the OeNB's website by November 2010. During the crisis, this report proved to be a valuable aid in discussing trends in bank lending and identifying problematic developments. In addition, the lending report serves as an important source of information for Austria's social partners, enabling them to incorporate insights from the report into their policy recommendations.

This publication is prepared jointly by the Statistics Department and the Economic Analysis and Research Department at the OeNB. Broadly speaking, the report is divided into three parts: a descriptive statistical section which presents an analysis of Austrian banks' lending to companies and households; a section which analyzes and interprets the latest available survey results on lending in Austria; and finally a special analysis section which identifies and examines current issues on the Austrian financial market. In addition to scrutinizing developments in bank lending, the descriptive statistical section also analyzes the development of interest rates on corporate and household loans as well as other sources of external corporate financing (foreign loans, borrowing on the capital market).

In the survey section, the lending report provides an in-depth review of the results of a WIFO survey commissioned by the OeNB on Austrian banks' lending conditions, as well as the results of interviews carried out on the same topic with a few selected large companies in various industries. In addition, the analysis includes the findings of a survey on lending conditions performed by the Austrian Federal Economic Chamber as well as the Bank Lending Survey (a quarterly survey of financing conditions conducted in all euro area countries).

In the issues published to date, the special analyses have addressed the following topics: development of the corporate bond market, description and objectives of the Austrian Act on Strengthening Company Liquidity (Unternehmensliquiditätsstärkungsgesetz – ULSG), the significance of the credit squeeze in a financial crisis (including an analysis and historical experience), the development of housing loan financing, deleveraging in the Austrian banking sector, as well as foreign currency loans and loans with repayment vehicles in the household sector.

As for bank lending, each issue of the lending report has discussed recent developments, which – between early 2009 and the first quarter of 2010 – were characterized by a sharp decline in the annual growth rate of loans to nonfinancial corporations and, to a slightly lesser extent, to households. In the second quarter of 2010, and even earlier in the case of households, this slump appeared to have hit bottom, as annual growth rates – albeit still in negative territory – began to climb. Overall, the unprecedented downturn in lending growth observed since early 2009 appears to have ended. In the real economy, this development was also accompanied by a severe slowdown in economic growth, especially in investment. Therefore, it would appear that much of the contraction in lending was triggered by the demand side.

On the supply side, the surveys mentioned above revealed that the corporate sector faced increasingly tight credit standards (e.g. restrictions on credit lines, on lending volumes, or on both; heightened information; and collateral requirements) after the outbreak of the crisis. This tightening of lending conditions also continued during the moderate economic recovery which materialized in the second half of 2009. However, like the lending downturn, this trend appeared to come to a halt in the first half of 2010, as the share of companies reporting tighter lending conditions has dropped substantially. At the same time, the number of companies which have reported an easing of credit terms is still low, meaning that the circumstances on the supply side still cannot be considered "normal."

In the wake of the key interest rate cuts adopted by the ECB since October 2008, the interest burden on Austrian companies and households has eased considerably. These cuts were passed on to new corporate lending very quickly for all interest rate fixation periods, whereas transmission to household loans with longer fixation periods was rather hesitant. This is mainly related to the unique institutional characteristics of housing loans in Austria: The bulk of these loans are granted by building and loan associations and also include escalator clauses for new lending, meaning that interest rate adjustments are delayed in these cases.

Several – mostly large – companies have opted to borrow on the capital market in order to compensate for the lower levels of loan financing since early 2009. Bond issues have risen markedly since that time and are now at a higher level than before the crisis. In contrast, equity financing through the stock market has stagnated at a very low level since mid-2008.

Bond Financing Has Sagged Slightly

In the first half of 2010, Austrian companies obtained approximately half of their external financing by issuing bonds. In this context, it is worth noting that a large share of Austrian bonds are issued by state-owned or quasi-public enterprises. As at mid-2010, some half of the bonds outstanding (and the bulk of large-volume issues) were those of enterprises in which the state holds a majority share. In the third quarter, corporate bond issues lost some of their momentum, and by September 2010, their annual growth rate had slipped to 8.3% according to securities issues statistics. In part, however, this contraction simply reflects the base effect arising from especially high issue volumes in 2009.

Bond yields have also remained at low levels. In September 2010, yields on BBB-rated bonds[5] weakened to 4.3% – a new low since the financial market turbulence reached its peak in the fall of 2008 – and subsequently edged up just 1 basis point in October.

Equity Financing Still Impaired

The crisis continues to have severe effects on financing via the stock exchange. In the first nine months of 2010, the gross volume of new issues (in the form of capital increases) was lower than that of delistings, which was also the case in the same period of the previous year. Net new issues thus remained in negative territory (–EUR 41 million). In the first half of 2010, quoted shares made practically no contribution to external financing, as had also been the case in the first half of 2009.

Measured in terms of the earnings yield (i.e. the inverse of the price-to-earnings ratio), the costs of raising capital on the Austrian stock market escalated in the course of the year, mirroring the recovery in corporate earnings. Between January and September 2010, the earnings yield jumped from 3.0% to 6.4%, only to edge down to 6.0% in October.

As over-the-counter equity financing saw relatively robust growth in the first half of 2010, enterprises raised some 55% of their external financing in the form of equity during that period. This figure is roughly equivalent to the average over the preceding years (2005 to 2009: 57%). The proportion of shares and other equity in the corporate sector's total liabilities remained unchanged at approximately 47% in the first half of 2010.

[5] *As no time series is available for yields on Austrian corporate bonds, figures for the euro area are used here.*

Austrian Corporate Financial Strength Indicators Improve Slightly

Corporate financial strength indicators, which in some cases had deteriorated sharply in 2009 due to the crisis, stabilized or even improved slightly in the first half of 2010. This period saw the smallest expansion of corporate debt in five years, and the ratio of corporate debt to profits fell slightly thanks to the recovery in earnings. The debt-to-equity ratio remained relatively stable throughout the crisis.

The subdued development in borrowing as well as the historically low level of interest rates are currently keeping interest expenses down in the corporate sector, which has provided relief on the cost side. However, even though this sector's debt-to-equity ratio remained steady throughout the crisis and the sector's exposure to interest rate risk did not climb overall, rising interest rates could create a noticeable burden for highly indebted companies. This risk factor is all the more salient given that the Austrian enterprise sector exhibits an above-average share of variable rate loans, making the sector vulnerable to substantial interest rate risk.

In contrast, foreign currency-denominated liabilities have for years played a far less important role in Austrian corporate finance than in household borrowing. Low debt levels and low interest rates are probably also among the reasons why the number of corporate insolvencies has only risen relatively slightly in the course of the crisis. Based on moving four-quarter averages in order to rule out seasonal fluctuations, the number of insolvencies dropped 4.8% year on year in the

Chart 17

Indicators of Corporate Financial Strength
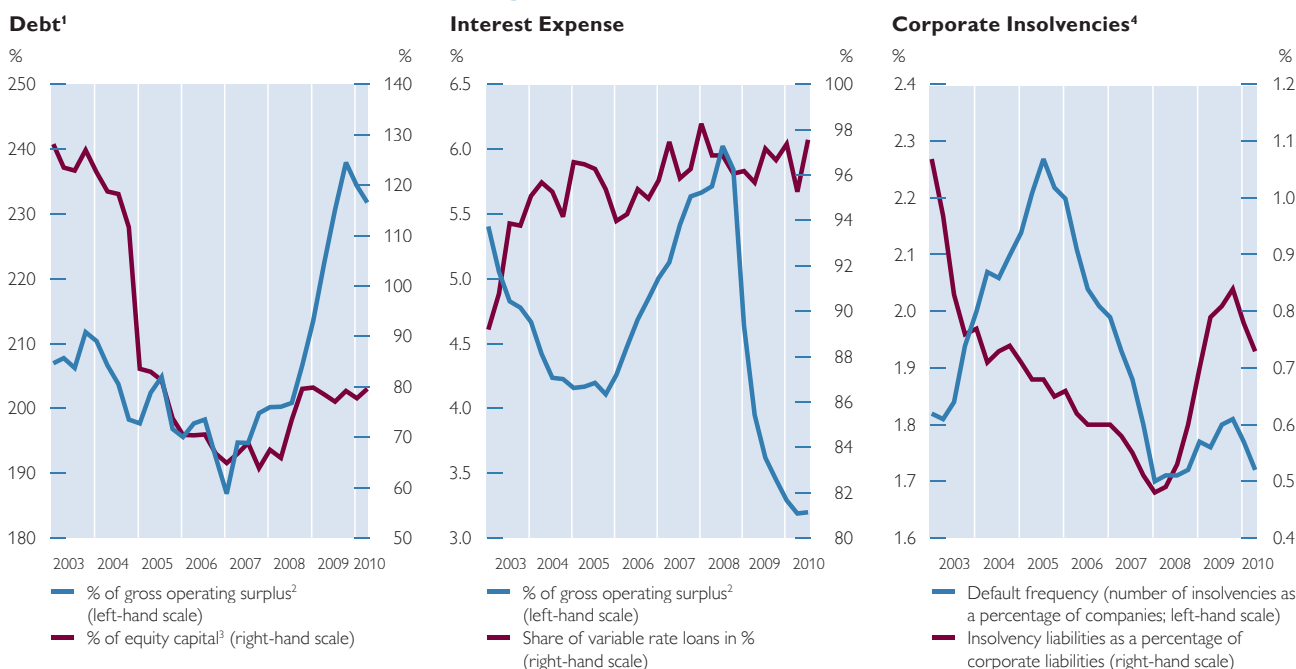
Source: OeNB, ECB, Eurostat, Kreditschutzverband von 1870.

[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.
[4] Moving four-quarter averages, annualized.

third quarter of 2010 and even declined slightly relative to the total number of companies. Insolvency liabilities also shrank in the first three quarters of the year. In relation to the total liabilities of the corporate sector (according to financial accounts), the four-quarter moving average of insolvency liabilities fell from 0.84% in the fourth quarter of 2009 to 0.72% in the third quarter of 2010. At the same time, it is important to note that insolvency figures generally constitute a lagging economic indicator.

Financial Investments of Households During the Crisis

Households Boost Financial Assets

As at end-2009, the household sector held financial assets amounting to EUR 474 billion, or 1.7 times Austria's GDP. In a breakdown, the financial assets of households (self-employed persons and private individuals) totaled EUR 440 billion (93% of the overall amount). Private foundations, which are recorded as part of the household sector in Austria's financial accounts, held EUR 27 billion in financial assets (6% of the total).

In June 2010, financial assets of households (excluding nonprofit institutions serving households) reached a total of EUR 447 billion, up EUR 7.1 billion (1.6%) from the beginning of the year.

Households Cut Back on New Investments in First Half of 2010

During the financial crisis, saving decelerated in the household sector. Although wages and salaries rose only moderately, consumer spending remained stable during the crisis, which in turn put downward pressure on the saving rate. In 2009, this rate sank from

Table 2

Breakdown of the Household Sector's Financial Assets as at End-2009

	Household sector						
	Total	Households (excluding NPISH)			Nonprofit institutions serving households (NPISH)		
		Total	Self-employed persons and sole proprietorships	Private individuals	Total	Private foundations	Other organizations
	in Mrd EUR						
Currency[1]	15.7	15.7	×	×	0.0	×	×
Deposits with banks in Austria and abroad	210.7	204.4	13.5	190.9	6.3	5.0	1.3
Memorandum item: Savings deposits in EUR	156.4	156.4	0.0	0.0	0.0	×	×
Tradable securities[2]	102.8	88.2	5.0	83.2	14.6	10.3	4.3
Other equity[3]	43.7	30.4	×	×	13.3	11.8	1.5
Life insurance reserves and pension fund benefits	80.6	80.6	×	×	0.0	×	×
Other financial assets[4]	20.8	20.6	×	×	0.2	×	×
Total financial assets	474.3	439.9	0.0	0.0	34.4	27.0	7.2
Change since 2005	82.3	70.4	×	×	11.9	×	×

Source: OeNB.

[1] *Cash cannot be subdivided, thus 100% of this item is currently attributed to households.*

[2] *Debt securities, quoted shares and mutual fund shares; broken down according to securities holdings reports of Austrian banks.*

[3] *Nonquoted shares and other equity (at book values).*

[4] *Cash in Austrian schillings, claims on severance funds and claims on insurance companies from damage and accident insurance policies.*

11.8% to 11.1%, and the figures currently available for the year 2010 point to a further decline.

In recent years, household savings have exhibited a high correlation with financial investment. Accordingly, these investments also decelerated along with the lower propensity to save observed in households (self-employed persons and private individuals). In the first half of 2010, household savings amounted to a mere EUR 5.7 billion (compared to EUR 9.6 billion in the first half of 2009).

Until the peak of the financial crisis, retail investors mainly focused their activities on longer-term financial products. These included bank deposits as well as debt securities issued by banks. However, this trend changed substantially starting in the first quarter of 2009, when households began to shift their asset portfolios toward more liquid investments. This development can probably be attributed not only to

uncertainty, but also to the low level of interest rates.

Households began to invest in securities again after the peak of the financial crisis; these investments totaled EUR 1.2 billion in the first half of 2010. During that period, retail investors mainly purchased Austrian stocks and corporate bonds. However, these investors have also added more mutual fund shares (mostly in foreign funds) to their portfolios since the year 2009.

Investments in life insurance policies and pension fund reserves have continued to show steady growth. The growing importance of funded pension instruments per se as well as their use as repayment vehicles for bullet loans has supported investment in this type of product, although new foreign currency lending has slowed markedly compared to 2009.

A fair amount of the growth in household financial wealth since the end of 2008 can be attributed to the
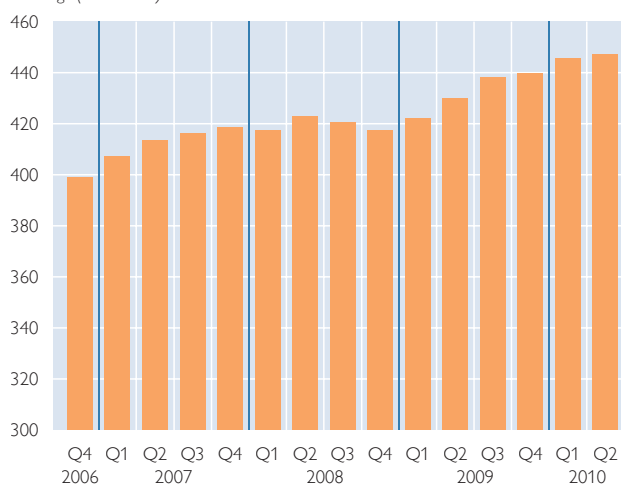
Chart 18

Household Financial Assets

Growth Due to New Investment and Price Effects
Change in holdings (EUR billion)
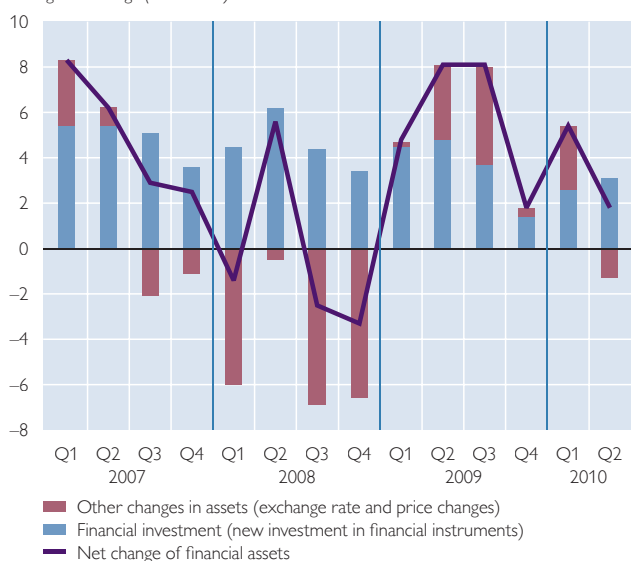
### Financial Assets
Holdings (EUR billion)

Other changes in assets (exchange rate and price changes)
Financial investment (new investment in financial instruments)
Net change of financial assets

Source: OeNB.

Chart 19

New Investment in Securities by Households

By Instrument

Transaction volume (EUR billion)

Total securities investments
Debt securities
Quoted shares
Mutual fund shares
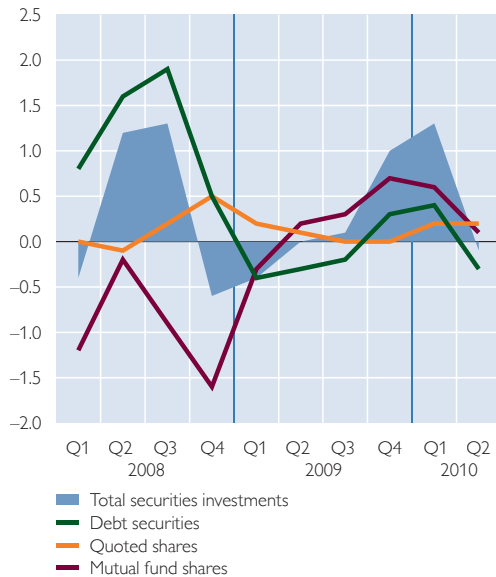
By Country of Issuer

Transaction volume (EUR billion)

Total securities investments
Domestic securities
Foreign securities
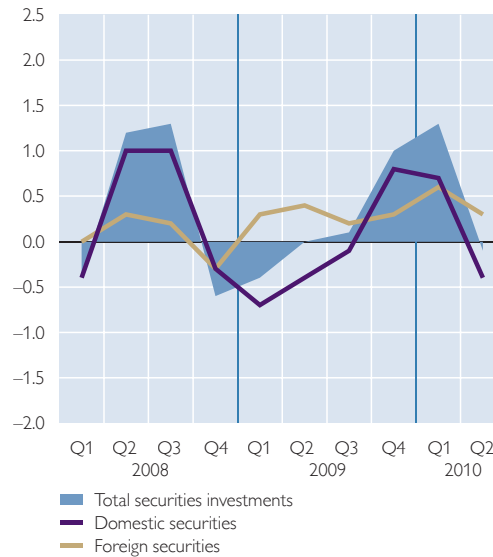
Source: OeNB.

rebounding prices of quoted shares and mutual fund shares. In the first half of 2010, net (unrealized) price gains came to approximately EUR 1 billion (for households excluding nonprofit institutions serving households). Therefore, approximately EUR 10 billion of the dramatic price losses during the crisis (over EUR 23 billion between mid-2007 and the first quarter of 2009) were offset between the second quarter of 2009 and the second quarter of 2010.

Property Income Remained Considerable Even During the Crisis

According to national accounts data, the household sector's property income is part of disposable income. This category includes distributed income of corporations, interest income from deposits and securities, and property income attributed to insurance policy

holders. However, a number of problems are associated with these data.

First, the crisis had a severe effect on property income, which (after deduction of interest paid on loans) shrank by 29% in 2009. The main reason for this development was a sharp contraction (–39%) in distributed income of corporations, which accounted for nearly two-thirds of the decline. More than one-third of the reduction in property income in 2009 can be attributed to interest income. Interest rates fell primarily as a result of the ECB's rate cuts in 2008 and 2009 in response to the crisis.

Despite the sharp decrease in the crisis year 2009, net property income still exceeded EUR 16 billion, thus accounting for just under 10% of disposable income. For the majority of households, however, property income plays a secondary role at best. In addition,

the problems associated with property income data are formidable. For example, the distributed income of corporations is calculated as a residual value.[6]

Only Weak Growth in Loans to Households

The first half of 2010 saw sagging demand for loans as well as more cautious lending policies on the part of the banks. Housing loans remained the focus of demand, while consumer loans declined. At the end of June 2010, outstanding bank loans[7] to households amounted to EUR 134 billion, up 4.8% year on year. At the same point in time, the total liabilities of retail borrowers – including liabilities to other lenders (especially in the form of home loans granted by the public sector) – came to EUR 157 billion.

Financial Crisis Has Worsened Households' Risk Situation

Despite the low volume of new borrowing and low interest rates, the debt burden on households rose noticeably during the crisis because disposable income was weak. In the second quarter of 2010, Austrian households' debt amounted to 97% of their disposable income (euro area: 102% in the fourth quarter of 2009), which was approximately 10 percentage points higher than in mid-2008.

Thanks to interest rate cuts, interest expenses dropped from 4% of disposable income in the fourth quarter of 2008 to 2.4% in the second quarter of 2010. At the same time, however, the share of variable rate loans in new lending climbed steadily. This type of loan accounted for 87% of outstanding loans

Chart 20

Household Risk Indicators

Liabilities
% of net disposable income
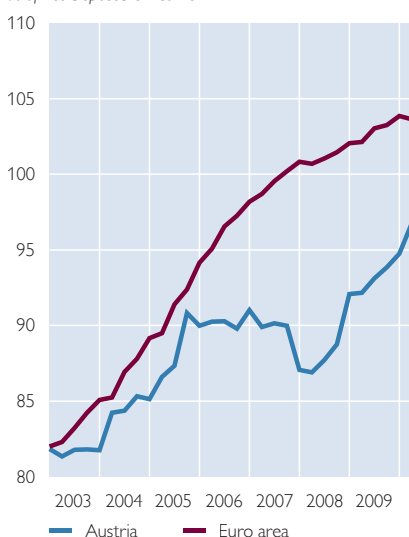
Interest Expense
% of net disposable income
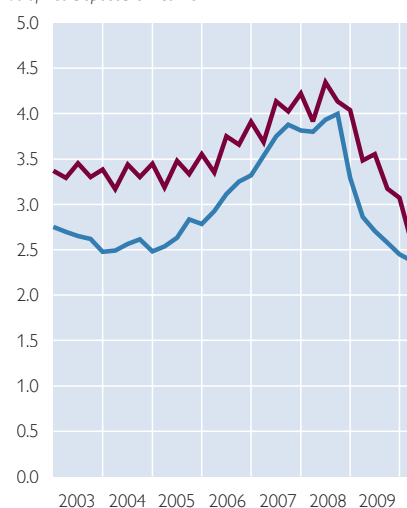
Variable rate loans
% of new lending

Austria — Euro area
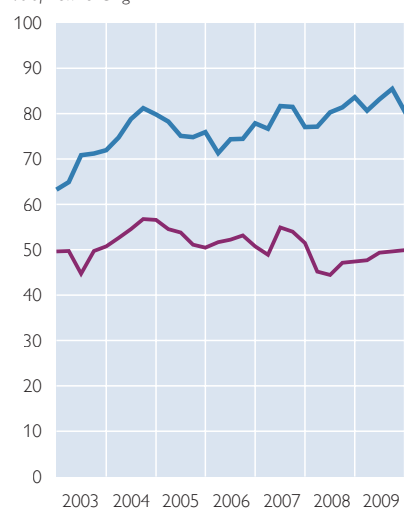
Source: OeNB, ECB, Eurostat.

[6] Only the dividend payments made by stock corporations are surveyed directly. Data are not collected on withdrawals of income from limited liability companies and partnerships. Income attributed to insurance policy holders is a notional value which reflects the performance of investments by insurance companies and pension funds.

[7] Including the home loans purchased by banks from 2001 onward.

in the second quarter of 2010. This share, which is very high by international comparison, has helped households reduce their interest expenditure more quickly in the last year and in the first half of 2010 thanks to the speed with which the ECB interest rate reductions were transmitted to lending rates. However, those rates could surge again just as quickly if interest rates were to climb.

The persistently high share of foreign currency lending to households poses another risk associated with fluctuations in exchange rates and in the value of repayment vehicles. Although it has diminished somewhat, the share of foreign currency-denominated loans in Austria remains very high compared to the euro area average. In the second quarter of 2010, foreign currency loans constituted 30% of the household sector's overall loan volume. This risk factor becomes especially visible when the foreign currencies in question appreciate against the euro. Since the fall of 2008, the Swiss franc has picked up some 20% against the euro.

Recovery of Austrian Financial System on Course, while Overall Conditions Remain Challenging

Austrian Banks Benefit from Recovery, Credit Risk Costs Remain High

Business of Austrian Banks Stable in the First Half of 2010

In the first half of 2010, the unconsolidated total assets of Austrian banks rose slightly by 0.4% against the second half of 2009, thus coming to stand at about 3% below the end-2008 figure. The downtrend since end-2008 has above all been attributable to interbank claims (–8%) and interbank liabilities (–13%) and ties in with developments in other European banking systems. In the third quarter of 2010, special effects resulting from restructuring measures of individual banks drove down the unconsolidated total assets by 4.9% quarter on quarter to EUR 987 billion.

Claims on nonbanks increased by 2.4% in the first half of 2010. As liabilities to nonbanks augmented only by 1%, the loan-to-deposit ratio rose slightly from 128.4% to 130.2%. The retail banking activity of local banks[1] basically mirrors banks' overall business activity. The decrease of external assets and liabilities seen in the second half of 2009 was partly offset again in the first half of 2010 (+4%), while domestic assets and liabilities shrank by 1.6% and 0.7%, respectively. The balance-sheet deleveraging process thus continued at a rather slow pace.

Bank density continues to be very high in Austria (June 2010: 853 credit institutions). Moreover, most banks are affiliated with central institutions in decentralized sectors – a fact that needs to be taken into account when assessing Austrian banks' dependence on the interbank market. A sizeable share of liquidity transfers within the Austrian banking sector are in fact transactions within the Raiffeisen credit cooperative, savings bank and Volksbank credit cooperative sectors. In July 2010, such intrasectoral liquidity transactions accounted for around 36% of total unconsolidated liabilities to credit institutions.

Chart 21

Change in Austrian Banking Sector Assets (Unconsolidated)
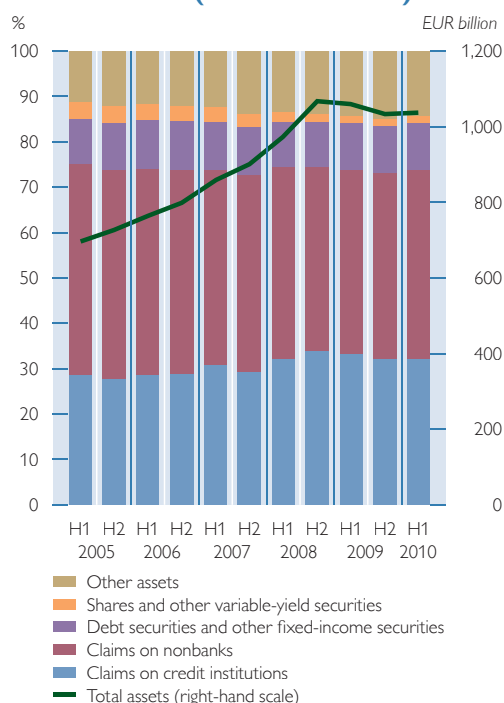
Source: OeNB.

---

[1] The sector of the local smaller banks includes certain joint stock banks; the savings banks without Erste Group Bank AG and Erste Bank der oesterreichischen Sparkassen AG; the Raiffeisen credit cooperatives without Raiffeisen Zentralbank Österreich AG and the regional Raiffeisenlandesbank cooperatives; as well as Volksbank credit cooperatives without Österreichische Volksbanken AG.

**Change in Austrian Banking Sector
Liabilities (Unconsolidated)**

Source: OeNB.

Recovery of Profitability Depends on Credit Risk Developments

In the first half of 2010, Austrian banks' unconsolidated operating profits rose to EUR 3.8 billion, up 14.0% year on year, as operating income advanced more strongly (+6.4%) than operating expenses (+1.7%). At 59.3%, the cost-to-income ratio thus improved against the first half of 2009 (62%). Since the first quarter of 2010 expectations for th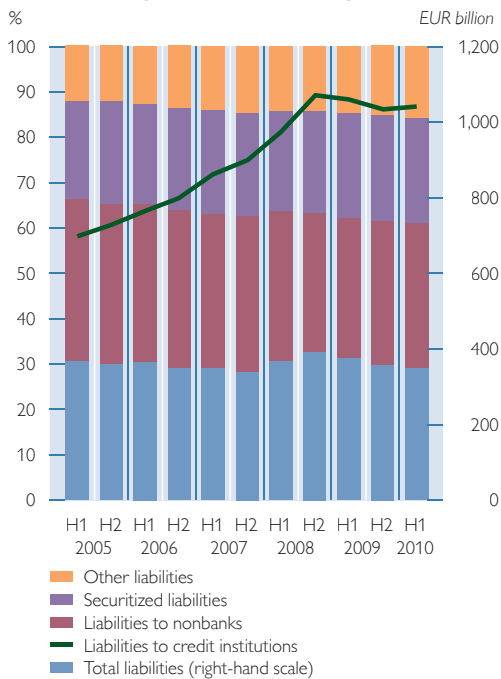e unconsolidated annual net profit of Austrian banks have been up again for the first time in two years (+17.2% year on year). That said, the projected annual surplus is based on expectations about annual risk costs (expected at EUR 3.4 billion for 2010), and those costs were significantly underestimated last year by the reporting banks.[3]

Interest income continued to play the most important role, accounting for 49% of unconsolidated operating profits (first half 2009: 50.1%). For the first time since 2006, the contributions of domestic (45.5%) and international business were broadly balanced again. The 4.3% rise in interest income continued to be driven by low refinancing costs. Fee-based income expanded again for the first time since 2007 – by 8.0% – which was above all due to the increased income from securities transactions and lending operations. More variable income components likewise posted growth, with income from securities and participations rising by 5.5% and the result of financial opera-

On a consolidated basis, Austrian banks' assets rose by 4.7% to EUR 1,194 billion from January to end-June 2010, driven above all by loans and claims (+4.8%). Increases were like-wise reported for liabilities to credit institutions (by 8.6% to EUR 243 billion) and liabilities to nonbanks (by 2.6% to EUR 492 billion). As banks' capital levels rose, consolidated leverage[2] continued to trend downward in the first half of 2010 to reach 16.9 in mid-2010 (end-2009: 19.2).

---

[2] *Leverage is defined as the ratio of total assets to eligible tier 1 capital (less deduction items) on the basis of the consolidated data reported to the OeNB.*

[3] *In mid-2009, total risk costs had been estimated to reach EUR 3.5 billion by end-2009, which contrasted with an actual EUR 8.5 billion. More specifically, credit risk costs (i.e. value adjustments in respect of loans and advances and provisions for contingent liabilities and for commitments) had been projected to amount to EUR 3 billion in mid-2009. At end-2009, these costs actually ran to EUR 4.4 billion.*

Chart 23

**Operating Profit and Efficiency
of Austrian Banks**

EUR billion   *%*

- Unconsolidated operating profit (left-hand scale)
- Consolidated operating profit (left-hand scale)
- Unconsolidated cost-to-income ratio (right-hand scale)
- Local banks' cost-to-income ratio (right-hand scale)
- Consolidated cost-to-income ratio (right-hand scale)

Source: OeNB.

**Negative Financial Result, Cost
Pressure and Credit Risk Put Brake
on Consolidated Profits in the First
Half of 2010**

On a consolidated basis, the year-on-
year result gives a different impression:
The consolidated operating profits be-
fore adjustment for risk provisions
came to EUR 6.6 billion in the first half
of 2010, a decrease of 21.8% against
the year-earlier period. This reduction
was due to a considerably weaker trading
result and a 4.1% increase in operating
expenses, as also reflected by the rise
in the cost-to-income ratio from 51%
to 58%. Compared with more variable
components, such as the financial result,
which was slightly negative in mid-2010
(see chart 24), the stable interest income
component made the most important
contribution to operating income.

Credit risk provisions were cut by
17% to EUR 4 billion in the first half of
2010 and accounted for 60.6% of the
overall operating result. After taxes the
subsequent period profit amounted to
EUR 1.8 billion, down 22% year on
year. Hence, the consolidated return
on assets after taxes dropped from
0.47% in mid-2009 to 0.36% in mid-
2010.

tions by 35.7%. Administrative expenses
remained almost unchanged year on
year, with staff costs having been cut by
a slight 1.1%. Local banks also managed
to raise their efficiency, albeit to a lesser
extent than the banking sector as a
whole (see chart 23).

Chart 24

Development of Operating Income by Components…

…based on unconsolidated data

% of total assets
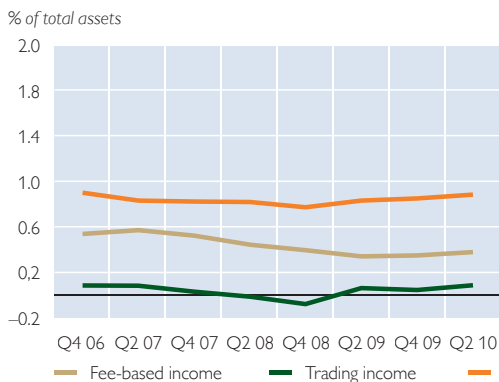
…based on consolidated data

% of total assets

- Fee-based income
- Trading income
- Interest income
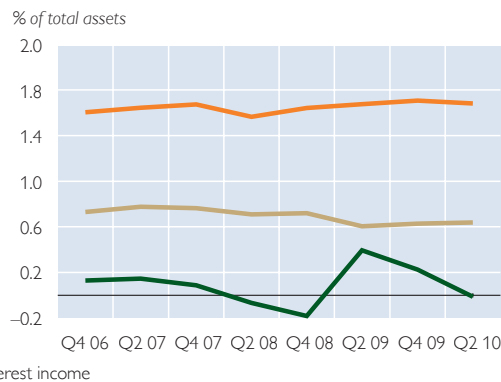
Source: OeNB.

Lending Stagnates as Business Environment Remains Difficult[4]

In the first nine months of 2010, Austrian banks' lending to domestic nonbanks[5] stagnated. At EUR 319.8 billion, the volume of loans outstanding was a mere 0.4% higher at end-September 2010 than a year earlier. Loans to households had increased by 0.9%, while loans to nonfinancial corporations had declined marginally. The former's increase was traceable to housing loans; the latter's decrease above all to large loans.

As to credit growth by sectors, joint stock banks posted a slight rise, while cooperative banks' lending stagnated. Savings banks, in turn, even registered a slight decrease.

The financing conditions of Austrian banks continued to improve slightly in the first half of 2010, with respect to money and bond markets as well as to securitization. Except for a slight relaxation at the beginning of the year, credit conditions remained unchanged.

Foreign currency lending, which had contracted rather significantly year on year (adjusted for exchange rate movements), came to some EUR 56.8 billion at end-September 2010. The foreign currency share in total loans hence amounted to 17.8%. The reduction concerned both households and nonfinancial corporations more or less equally. Given the high share of loans denominated in Swiss franc (almost 86%) and this currency's appreciation over the first eight months of 2010, borrowers were faced with considerable book losses — a fact that has, once more, driven home the risk associated with foreign currency loans.

Slowdown in Credit Quality Deterioration Differs across Regions

Austrian banks still bear high costs for building up loss provisions covering their credit risk. Consolidated credit risk costs amounted to EUR 4 billion in the first half of 2010. Even though they had shrunk by 17% year on year, such costs were still markedly higher than in former years (see chart 25). Over the past three years — from mid-2007 to mid-2010 — Austrian banks had set aside a total of EUR 22 billion in risk provisions.

The rise in credit risk costs reflects a general deterioration in credit quality. Yet, both the level of credit quality and the pace of deterioration differ considerably across regions. The increase of the unconsolidated loan loss provision ratio[6] — which does not cover subsidiaries' business activity and is thus clearly focused on Austria — basically stopped in the second and third quarters (maroon line in chart 26). At 3.1%, this ratio amounted to merely half of the aggregate loan loss provision ratio of all subsidiaries (5.9%; blue line in chart 26) in mid-2010. The latter continued to

Chart 25

Consolidated Credit Risk Costs of Austrian Banks

EUR billion
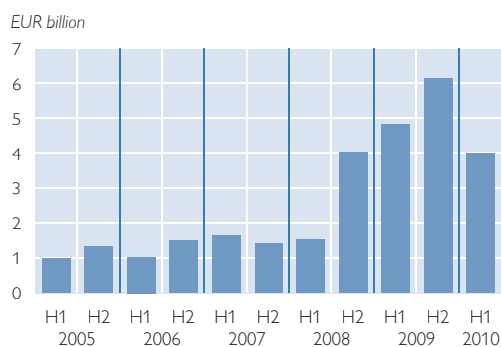
Source: OeNB.

---

[4] The analysis of loan growth is based on unconsolidated MFI balance sheet statistics data adjusted for exchange rate effects, value adjustments and reclassifications. These are adjustments for effects that do not arise from transactions.

[5] In this respect, "domestic nonbanks" are defined as all financial market participants other than credit institutions.

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

Chart 26

**Loan Loss Provision Ratios
of Austrian Banks**

%

Unconsolidated loan loss provision ratio
Loan loss provision ratio of all subsidiaries
Consolidated loan loss provision ratio
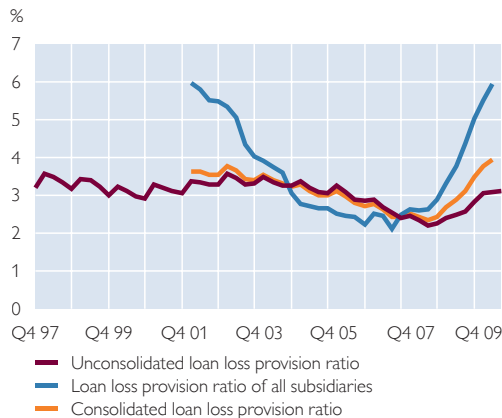
Source: OeNB.

grow at an almost unchanged pace, namely by almost 1 percentage point, in the first half of 2010. Subsidiaries in the CIS continued to post the highest increase in loan loss provision ratios, which climbed by 1.4 percentage points, already a much slower growth rate compared with 2009. The aggregate loan loss provision ratio of CIS-based subsidiaries stood at 11.8% in mid-2010.

The resulting consolidated loan loss provision ratio[7], which covers total credit to domestic and nondomestic customers, ran to 3.9% in the middle of 2010. As claims on domestic customers did not give rise to additional provisions recently, the increase of the consolidated loan loss provisions ratio slowed down (orange line in chart 26).

The share of the market risk capital requirements in the total capital requirements of the Austrian banking system continues to be small.[8] In mid-2010, this share amounted to 3.3%

(unconsolidated) or 3.4% (consolidated), which in both cases corresponds to a 0.1 percentage point rise from the end of 2009. All relevant risk categories of the market risk capital requirements, i.e. interest rate instruments and shares in the trading book as well as open foreign currency positions of the bank as a whole, registered slight increases from January to June 2010.

Interest rate risk in the banking book (in a consolidated view) rose slightly in the first half of 2010,[9] which is above all attributable to the positioning of some major banks. In this area, the overall risk exposure of the Austrian banking system stands at a historically modest level.

Liquidity Situation Stable

Austrian banks' liquidity situation is stable, both at the consolidated and unconsolidated level. On an unconsolidated basis, liquid claims (with maturities of up to three months) and liquid assets (e.g. euro government bonds) held by Austrian banks as at June 30, 2010, amounted to 122.9% of short-term liabilities (with maturities of up to three months). This represents a slight decrease of 1.9 percentage points compared with the figure as at December 30, 2009.

On a consolidated basis, the counterbalancing capacity after 12 months[10] (before money market) totaled EUR 90 billion on October 29, 2010. In other words, even based on conservative estimates of cash flows 12 months ahead, banks' liquidity conditions remain stable, a marginal improvement compared to December 30, 2009 (EUR 87 billion).

---

[7] 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.

[8] 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.

[9] Based on the so-called "interest rate risk statistics."

[10] The counterbalancing capacity comprises expected net cash inflows plus any additional liquidity that may be realized in the observation period.

Box 2

Basel III and Its Impact (QIS)

Against the backdrop of the most recent financial crisis, a comprehensive range of proposals to tighten the regulatory framework for banks ("Basel III") is meant to strengthen and sustain the stability of the banking sector. The measures under this framework, which were adopted by the Board of Governors and Heads of Supervision of the member states of the Basel Committee on Banking Supervision in November 2010, reach far beyond a mere revision of the existing capital requirements. They comprise proposals to raise the quality and quantity of equity capital (through tighter eligibility criteria for capital instruments and higher minimum capital ratios), introduce a leverage ratio (maximum overall debt ratio), improve liquidity management (through the introduction of liquidity ratios) and implement a regime that reduces procyclicality (through the introduction of capital buffers and countercyclical adjustments in minimum capital requirements). Further measures aim at limiting the specific risks associated with systemically important institutions and at raising their ability to absorb losses.

The financial market crisis had unmasked the inability of some capital components to adequately absorb losses. This is why Basel III targets an overall improvement in the quality of regulatory capital. The new framework thus applies a stricter definition as to what qualifies as capital in accordance with loss absorbency: First, tier 1 capital must be sufficiently loss-absorbent on a going concern basis. Therefore, a distinction will henceforth be made between core tier 1 capital (referred to as "the common equity component" of tier 1 under the Basel III framework – basically paid-up capital and reserves) and non-core tier 1 capital (additional going concern capital). In addition, once an institution is no longer viable (gone concern), tier 2 capital will be used to redeem debt. Moreover, the application of capital deductions will be harmonized at the international level; deductions will in the future as a rule have to be applied to tier 1 capital.

Following multiyear transition periods, in 2019 at the latest, the minimum ratio for common equity capital is meant to equal 4.5%, that for tier 1 capital 6% and that for total capital 8% (10.5% including a capital conservation buffer). These periods are meant to allow banks which have only limited access to the capital market owing to their size or ownership structure to use their profits to gradually attain the raised capital ratios.

A capital conservation buffer, set to reach 2.5% of risk-weighted assets by 2019, is scheduled to diminish the cyclical effect of capital requirements. Noncompliance with this target ratio will result in the phase-in of greater constraints on earnings distributions. In addition, during periods of excess credit growth, supervisory authorities will be able to impose a countercyclical capital buffer at the national level, covering a range of 0% to 2.5% of risk-weighted assets.

As a backstop to the risk-based measures, the Basel III framework envisages the introduction of a non-risk-based leverage ratio (maximum debt ratio) to curb excessive balance sheet growth not underpinned by capital. The supervisory monitoring period for the leverage ratio, set to start in 2011, will be followed by a trial period ("parallel run") beginning in 2013.

With regard to liquidity, the following problems became particularly evident during the crisis: great dependence on short-term refinancing and inadequate liquidity management. Hence, the new framework includes new ratios to improve the liquidity situation (liquidity coverage ratio – LCR, and net stable funding ratio – NSFR) as well as tighter liquidity management requirements. The liquidity coverage ratio is scheduled to undergo an observation period from 2011 to 2015, when it will become a minimum standard. Beginning in 2012, especially the impact of the net stable funding ratio on business models will be under observation before application of this ratio will become mandatory in 2018.

At the European level, the new standards have yet to be adopted by the Council of the European Union and the European Parliament. The European Commission is expected to present its new proposals on capital requirements, i.e. the respective amendments to the Capital Requirements Directive ("CRD IV") in the summer of 2011. Austria takes the stance that the requirements should not be watered down when they are transposed into European law; at the same time, European specifics, such as the structures of decentralized multi-tier banking sectors (cooperative banks, savings banks) should be taken into account.

> *To assess the impact of the proposals made by the Basel Committee on Banking Supervision, the Committee conducted a comprehensive quantitative impact study (QIS) both at the international and at the European level. Based on this study, Austrian banks concluded that the new requirements – depending on the final definition of capital categories – will result in an additional capital need in the low double-digit billion euro range. From today's perspective, the transition periods set forth by the Basel Committee seem to be long enough to allow banks to adjust their business models in a way that does not affect the real economy in an adverse manner. On balance, the long-term benefits of Basel III are set to far exceed the short-term costs. For more details on the impact of Basel III on Austria, see the study "The Economic Impact of Measures Aimed at Strengthening Bank Resilience – Estimates for Austria" in this issue.*

Harmonized Legal Framework for Financial Market Infrastructures

At the EU level, work on harmonizing the legal framework for central counterparties (CCPs) and central securities depositories (CSDs) has made further progress. In September 2010, the European Commission presented a Proposal for a Regulation on OTC derivatives,[11] central counterparties and trade repositories. Apart from implementing stringent organizational and prudential requirements for CCPs, the regulation will include the much-discussed clearing obligation for OTC derivatives (i.e. standardized OTC derivative transactions will have to be cleared through CCPs). Additionally, the proposal seeks to enhance transparency by providing for a reporting requirement of such transactions to registered trade repositories that will be accessible to regulators. The key features of the Commission's Proposal for a Regulation on short selling and certain aspects of Credit Default Swaps (CDS) are, first, to establish harmonized notification requirements across the EU; and second, to determine standards and organizational procedures for CDSs. The competent (national) supervisory authorities have not been specified yet. The European Commission views both proposals as further contributions to making financial market infrastructures in Europe safer and more transparent.

It must be noted that the Austrian financial market infrastructures and payment systems have shown themselves to be safe and sound as well as fully operational under all conditions, even during periods in which the financial market was beset by turbulence. There were no system disturbances with an impact on the Austrian financial system in the first half of 2010.

First Signs of a Return to Growth in Some CESEE Countries[12]

The business environment for banks proved to be ambiguous in 2010. Whereas the global economy was on the path to recovery and emerging markets were regaining attractiveness for

---

[11] *Over-the-counter (OTC) trade refers to transactions in securities between financial market participants that do not occur on an organized securities exchange.*

[12] *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. NMS-2007 refers to the Member States that joined the EU in 2007: Bulgaria (BG) and Romania (RO). Southeastern Europe covers Albania (AL), Bosnia and Herzegovina (BA), Croatia (HR), FYR Macedonia (MK), Montenegro (ME), Serbia (RS) and Turkey (TR). 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).*

investors, several factors were cause for concern, above all the reassessment of country risks and the associated exchange rate fluctuations. Moreover, concerns about whether economies would suffer after phasing out the support measures and about the political situation in the region were widespread. Overall, the recovery firmed across Central, Eastern and Southeastern Europe (CESEE),but developments in individual countries diverged.

For the first time since the outbreak of the financial turmoil, the figures reported by Austrian banks' subsidiaries in CESEE indicate a return to a growth path, albeit still at a low level by historical standards and adjusted for exchange rate changes. Compared with the second half of 2009, the total assets of Austrian banks' 68 fully consolidated subsidiaries in CESEE rose by roughly 4% to EUR 264.5 billion at mid-2010, bringing Austrian banks' CESEE market share to 13.6% (2009: 14.4%); excluding Russia, this share is 21% (2009: 21.1%).

A comparable increase by about 3.3% to EUR 165.5 billion was also reported for the volume of on-balance sheet loans to nonbanks (see chart 27).

In the first half of 2010, the profitability of the core business of Austrian banks' CESEE subsidiaries improved compared to the first half of 2009 even though credit portfolios contracted, but the net loss on financial operations had a negative impact on the overall result. Total operating income thus dipped to roughly EUR 6.6 billion following an above-average result in 2009. At EUR 4.6 billion, net interest income stood at a historical high in absolute terms and represented a record share of 71% of operating income (Q2 09: 60%). Significantly higher expenditure in the Commonwealth of Independent States (CIS) caused the cost-to-income ratio to deteriorate by approximately 1 percentage point to 48.3%, ultimately dampening operating profit by 3.1% to EUR 3.4 billion.

Chart 27

Growth of Lending by Austrian Banks' Subsidiaries in CESEE
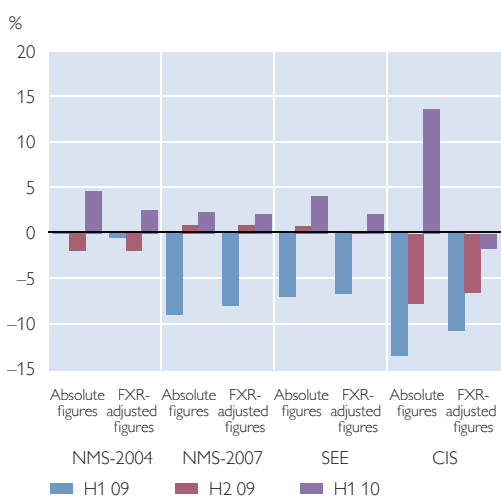
Source: Surveys of the "big five" Austrian banks in CESEE.

Note: Figures were adjusted for foreign exchange rate (FXR) movements.

Chart 28

Profitability of Austrian Banks' Subsidiaries in CESEE
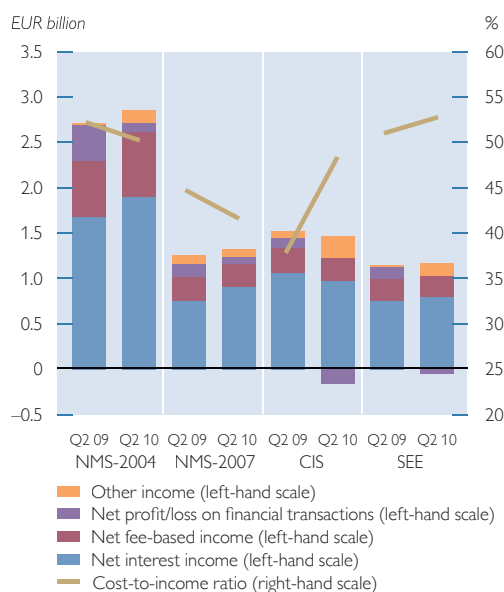
Source: OeNB.

The return on assets of Austrian banks' subsidiaries in CESEE fell slightly year on year, dropping to around 0.9% (annualized) in the first half of 2010. However, this represents a slight improvement compared to the end-2009 result, among other things because of lower new loan loss provisions in the CIS. Profitability developed along different lines in individual CESEE countries and regions in the first two quarters of 2010. Whereas most of the profits still came from countries like the Czech Republic, Romania, Russia or Croatia, six CESEE countries posted a negative result at end-June 2010. Overall, Austrian banks' CESEE subsidiaries made profits of around EUR 1.1 billion in the first half of 2010, down by some 6.2% on the same period of 2009.

The speed at which credit risks unfold and the corresponding loan loss provisions are made remains heterogeneous across regions. The share of nonperforming loans in the region as a whole rose from 9.8% at the end of

2009 to 12.2% at mid-2010. However, the rise in the loan loss provision ratio from 5.3% at end-2009 to 6.2% at mid-2010 was smaller than that in the nonperforming loan ratio, causing the coverage of nonperforming loans by loan loss provisions to sink (coverage ratio at mid-2010: 40.3%).[13] With the exception of the CIS, where restructuring measures were taken and risk transfers were made in addition, all regions posted higher risk costs at end-June 2010 than at mid-2009. Principally, given e.g. the continued strength of the Swiss franc and ongoing problems in individual countries, loan loss provisions are expected to stay above average. Considering that the level of loan loss provisions is already high, the current forecasts for economic developments

Chart 30

Nonperforming Loan and Coverage Ratio of Austrian Banks' Subsidiaries in CESEE

Nonperforming loan ratio (left-hand scale)
Coverage ratio[1] (right-hand scale)
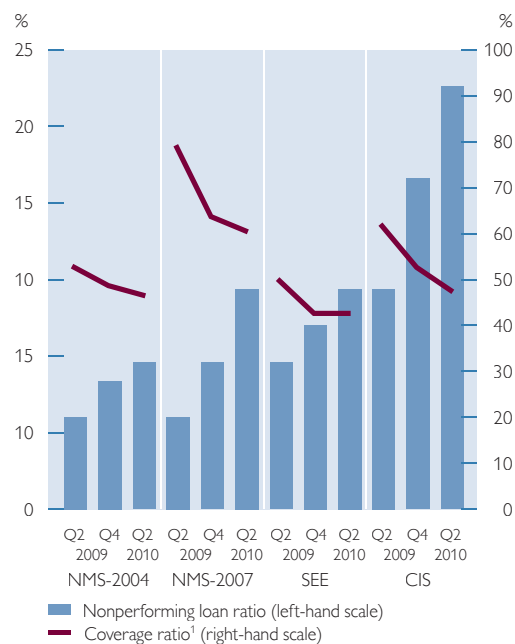
Source: OeNB.

[1] Total loan loss provisions divided by nonperforming loans.

Chart 29

Annualized Return on Assets of Austrian Banks' Subsidiaries in CESEE

CESEE   NMS-2004   NMS-2007
SEE   CIS
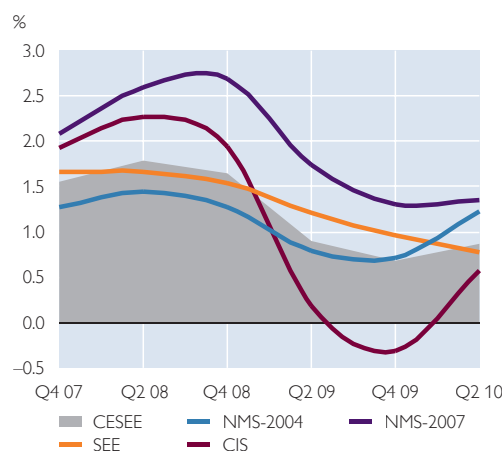
Source: OeNB.

[13] *The coverage ratio is approximate and is calculated not on the basis of loan loss provisions on nonperforming loans but as the ratio of total loan loss provisions to nonperforming loans. The calculation does not take the degree of collateralization into account.*

do not signal a massive increase in credit risk costs at the aggregate level.

The capital buffers of Austrian banks' subsidiaries in CESEE were again strengthened in 2010. A variety of methods were used to achieve this goal: reducing loan portfolios, making risk transfers, retaining earnings and making capital injections. Consequently, the aggregate tier 1 ratio and the capital ratio ran to 12.7% and 15.1% at end-June 2010, reflecting a rise in capital calculated in euro by around 7% against the background of a stagnation of risk-weighted assets. In the second quarter of 2010, only four subsidiaries reported a capital ratio of under 10%, and nine additional banks had a ratio of less than 12%. As some of these banks operate in critical markets, however, it is crucial that these banks continue to boost their capital ratios.

With business growth remaining slow, the structural refinancing position of the subsidiaries as a whole stabilized further, but at the country level, exchange rate-related divergences in developments were observed. As a case in point, the loan-to-deposit ratio diminished by some 0.5 percentage points to 108.8% from end-2009 to mid-2010, and the deposit gap fell further by EUR 0.3 billion to EUR 13.4 billion. This development was fueled by the EUR 3.1 billion rise in deposits in the Czech Republic, part of which was absolute and part of which was related to exchange rate changes. In markets with a high share of loans denominated in Swiss francs or U.S. dollars but with a low share of offsetting foreign currency deposits, notably Russia, Hungary, Romania and Croatia, the deposit gap widened by 20% on average, as reflected by an increase in intragroup claims (in-

cluding guarantees) by about EUR 2.4 billion to EUR 51.5 billion. Thus, banks still face the challenge of having to reduce currency mismatches and of embarking on a sustainable development of retail banking. A trend break was observed in intragroup refinancing of other financial intermediaries, which augmented steadily until end-2009 and then diminished by EUR 0.5 billion to EUR 19.1 billion in the first half of 2010. The latter development primarily reflects the slow decline in the portfolio holdings of leasing subsidiaries.

The volume of large direct (i.e. cross-border) loans Austrian banks extended to nonbanks and financial institutions[14] in CESEE grew marginally compared to end-2009, rising by 1.1% to EUR 49.6 billion until mid-2010 (not adjusted for exchange rate effects owing to data unavailability). The volume of loans to nonbanks granted by Austrian banks directly increased by 1.5% to EUR 45.6 billion in the first half of 2010, with loans to nonbanks in the CIS jumping by 13.2% in the same period as a result of the U.S. dollar's strength. Loan loss provision ratios increased once again for loans granted directly, but still remain at only a little more than half the level for loans granted by Austrian banks' subsidiaries in CESEE.

In the case of foreign currency lending, the sharp decline in new business may be observed to have reduced risk, but the old portfolio continues to represent a considerable burden. The foreign currency loan portfolios of Austrian banks' CESEE subsidiaries shrank further in the first half of 2010; adjusted for exchange rate changes, these holdings dropped by 1.3% to EUR 81.1 billion. Foreign currency lending above

---

[14] *This item comprises loans to nonbanks and financial institutions outside the lender's banking group. A comparison with historical data is impossible, though, since this item included intragroup loans up to the data reported in the Financial Stability Report 17.*

all to households diminished at an above-average rate of –2.2%, albeit with strong regional discrepancies: It rose by 4.36% in the NMS-2007 and declined by 7.70% in the CIS, by 6.05% in the NMS-2004, and by 1.02% in SEE. As a result, the share of foreign currency credits in total loans granted by Austrian banks' subsidiaries in CESEE decreased from 49.3% at end-2009 to 47.9% at mid-2010. In turn, foreign currency loans to CESEE customers granted directly by Austrian banks went down by 3.2% to EUR 39.7 billion in the first half of 2010. Compliance with the OeNB/FMA Guiding Principles on Foreign Currency Lending in CESEE cannot be examined in detail so far. However, compliance will become more important once lending revives in a more competitive business environment.

The exposure of Austrian banks[15] to CESEE has continued to grow since 2009, rising by 4% to EUR 212.5 billion (including foreign-owned banks roughly EUR 300 billion) at end-June 2010. The increases in Ukraine and Russia reflect the temporary depreciation of the euro in the first half of 2010. Exposures declined above all in Serbia, Hungary and Romania. In the latter two countries, the decline reflects the current expectations that economic growth will be sluggish (see chart 31). From the country risk perspective, the level of Austrian banks' investment in bonds of euro area countries with a high risk premium is noticeably below average, but Austrian banks have a high exposure to the CESEE region. Therefore, credible fiscal consolidation is an issue of importance for Austrian banks, too.

Boost in Capital Buffers Raises Capital Ratios

The aggregated tier 1 capital ratio (capital ratio) of all Austrian banks recovered from a low observed in the third quarter of 2008, rising by roughly 247 (280) basis points to 9.78% (13.25%) at end-June 2010. This recovery may largely be attributed to two factors: to an increase in eligible capital, which accounted for about 80% of the rise in the capital ratio until the second quarter of 2010, and to a decline in risk-weighted assets, which accounted for about 16% of this increase.[16]

The improvement in the capital ratio resulting from the increase in eligible capital breaks down into several categories, with roughly 43% of the total attrib-

Chart 31

Country Risk Exposure of Austrian Banks in CESEE at Mid-2010

S&P long-term foreign currency sovereign debt rating

Cumulative GDP growth in % in 2010 and 2011 (OeNB/IMF forecast)

● NMS-2004　● SEE　● NMS-2007　● CIS
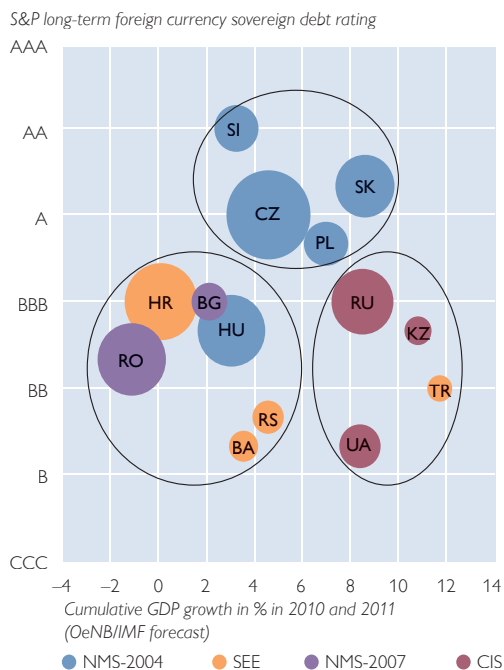
Source: OeNB, Bloomberg, IMF.

---

[15] *According to BIS definition.*

[16] *The remaining 4% are the result of a combination of risk-weighted asset and eligible capital effects.*

Box 3

Credit Default Swaps (CDSs) on Austrian Reference Entities

The Depository Trust & Clearing Corporation (DTCC) collects data on CDS transactions for the bulk of the international CDS market. In the course of the crisis, the CDS market became a focus of attention not just because of its high trading volume but also because of the associated financial stability issues. This box provides a short overview of CDSs on Austrian reference entities. DTCC registered CDSs outstanding on a current total of 17 Austrian reference entities. The total net nominal amount of these CDSs – i.e. the volume of economic risk transfer – ran to roughly EUR 8.5 billion as at September 24, 2010. Since March 2010, the volume of CDSs outstanding has been fairly stable. Around 95% of the net nominal amount outstanding was on only four reference entities: the Republic of Austria, Telekom Austria, Erste Group Bank and RZB. The net nominal amount outstanding on Austrian sovereign CDSs amounted to about EUR 6.3 billion or 3.4% of government debt as at October 1, 2010. In an international comparison, the volume of CDSs is rather high both in absolute terms and as a percentage of government debt despite the excellent AAA sovereign rating (see chart below). However, there is no indication that trades in Austrian CDSs involve any targeted speculation by investors expecting the Republic of Austria to default. Much rather, Austrian sovereign CDSs may serve as a proxy for investor sentiment about Austrian banks and the CESEE region.

Net Notional Sovereign CDSs Outstanding – An International Comparison
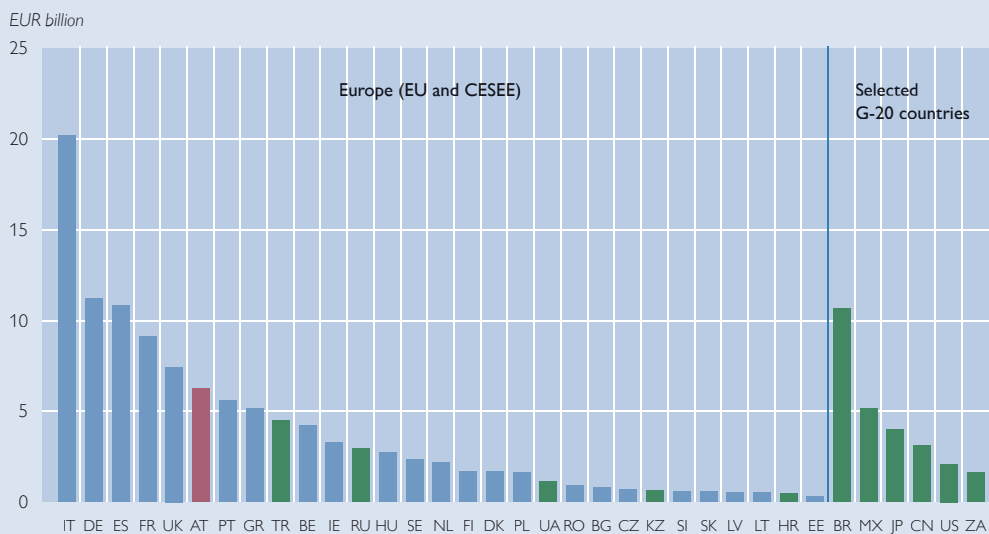
Source: DTCC (volume of CDSs on October 1, 2010).

utable to government participation capital and about 10% to limited private placements.[17] Most of the remaining 47% are attributable to privately raised capital (e.g. in 2009 and 2010, earnings were booked into capital).

Until the fourth quarter of 2009, banks reduced risk-weighted assets, obviously reacting directly to the financial crisis. Above all the "top six" banks cut back on risk-weighted assets by streamlining balance sheets, reducing off-balance sheet business and the like.

[17] *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 federal capital injected).*

Moreover, capital — in terms of eligible capital, eligible tier 1 capital and core tier 1 capital[18] — has augmented considerably since the third quarter of 2008, especially in the wake of the bank rescue package (about EUR 6.3 billion).

Notably, core tier 1 capital expanded by 30% from the low recorded in the third quarter of 2008 until the second quarter of 2010, i.e. more strongly than eligible capital and than eligible tier 1 capital.

Stress Test Results Indicate that the Austrian Banking System's Resilience to Shocks Is Intact

The OeNB regularly performs stress tests to assess the resilience of the banking system to potentially negative developments of the economic environ-

ment, regarding them as a fundamental element of financial stability analysis. As in the past, the OeNB's most recent fall stress test included two scenarios, this time for the period until the end of 2012. The first one is the benchmark scenario, based on the OeNB's most recent economic forecast for Austria and selected CESEE countries and supplemented by the IMF's forecast[19] for all other countries. The second one is a "refinancing crisis" scenario simulating a severe strain on the economic environment for the Austrian banking sector.[20] This stress scenario, a double-dip scenario like the one used for the spring exercise, simulates a renewed slump in investor confidence worldwide from the beginning of 2011 that leads to a

Chart 32

Development of Risk-Weighted Assets
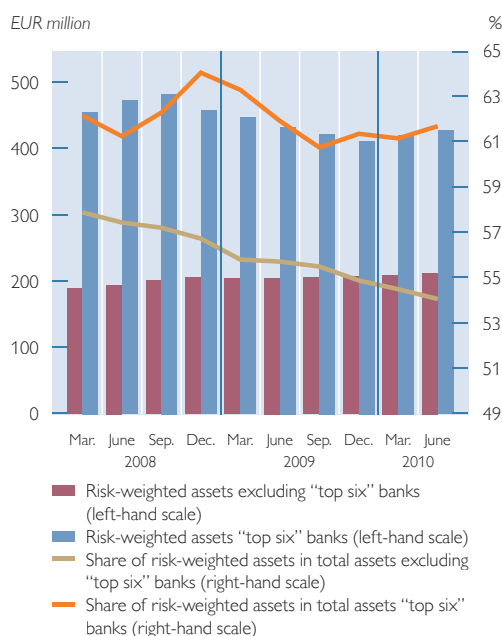
Source: OeNB.

Chart 33

Growth in Capital Positions
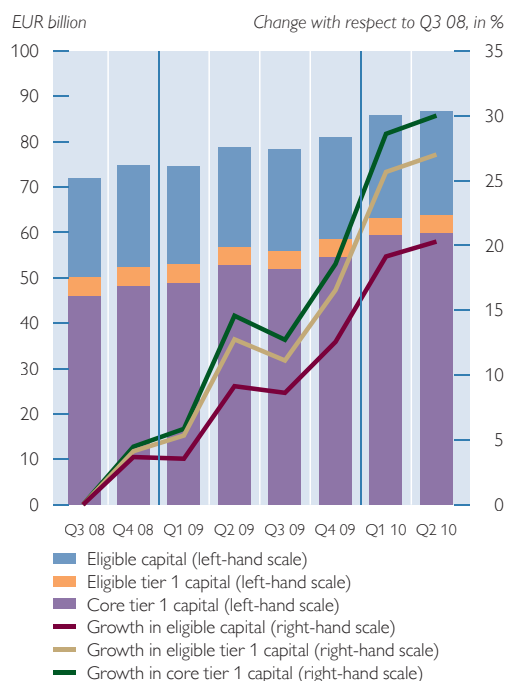
Source: OeNB.

---

[18] Eligible tier 1 capital adjusted for innovative hybrid capital.

[19] See IMF, 2010, World Economic Outlook, October.

[20] Note that this is a hypothetical scenario only, serving as a basis for the stress test. From today's perspective, this scenario is not expected to occur.

sharp rise in risk premiums and in interest rates. In the currently fragile economic environment, such a shock to investor confidence would have a direct, negative impact on the real economy, given the higher refinancing need of many sovereigns and banks: The slump in global demand would be further reinforced by lending restrictions and the greater need to consolidate public finances. Many countries have no budgetary room for maneuver to address a renewed downturn; much rather, they would be forced to cut costs even more.

As the economic outlook has improved overall, the growth rates assumed for most regions in the refinancing crisis scenario are somewhat higher than in the stress scenario of the spring stress test. While the differences between the growth rates in the benchmark and the stress scenario are somewhat larger than in the previous exercise, they are nevertheless comparable to those of earlier stress tests. For Austria, the cumulative GDP growth gap between the two scenarios over the 2½ year simulation period totals 5.4 percentage points, with GDP growth assumed to be just barely positive at 0.4% over the entire period in the stress scenario. For the CESEE region as a whole, the corresponding cumulative growth gap comes to 9.0 percentage points. At 9.8 percentage points, the gap is largest for the CIS (see chart 34).

The evaluation of the impact of the two scenarios on the Austrian banking system mainly focuses on the following transmission channels: operating income before risk provisioning, credit risk costs, and the development of risk-weighted assets. In the refinancing crisis scenario, operating income is affected above all by more stringent refinancing conditions. Moreover, both the probabilities of default and losses given default (LGDs) increase, which in turn causes credit risk costs to rise;[21] and finally, the higher risk parameters in the stress scenario influence the development of risk-weighted assets. These three components in turn determine the development of our key measure for assessing overall risk, the tier 1 ratio.

In backtesting analyses, the development of these three key components in the benchmark scenario of past OeNB stress tests is compared ex post with the actual developments. In the case of the spring 2010 exercise, banks performed somewhat better in reality than in the benchmark scenario.[22]

In the most recent stress test, the benchmark scenario shows a positive development both for the Austrian banking system as a whole and for the "top six" banks:[23] The tier 1 ratio for both aggregates rises by somewhat more than 1 percentage point over the entire period (see chart 35).[24] The rise in the tier 1 ratio is some 0.5 percentage points higher than in the spring stress test, partly because the economic outlook has improved and partly because the fall exercise was based on a longer period.

---

[21] This becomes particularly obvious when the effect of the refinancing crisis scenario takes hold at the beginning of 2011. Here, the increase in LGDs of defaulted exposures entails noticeable one-off effects on credit risk costs.

[22] For one thing, this can be traced to some simplifying assumptions, which are required to treat all banks equally in the exercise. For another thing, some aspects of the tests are deliberately based on conservative modeling.

[23] UniCredit Bank Austria AG, BAWAG P.S.K. AG, Erste Group Bank AG, Raiffeisen Bank Int. AG, Österreichische Volksbanken AG, and Hypo Alpe-Adria-Bank International AG.

[24] The results refer to the OeNB calculations (top-down approach) based on reporting data of mid-2010. In the exercise, profits of the first half of 2010 have been taken into account in the capital position and thus in the tier 1 ratio for mid-2010.

Chart 34

GDP Growth in the OeNB Fall 2010 Stress Test[1]

Cumulative GDP growth in %
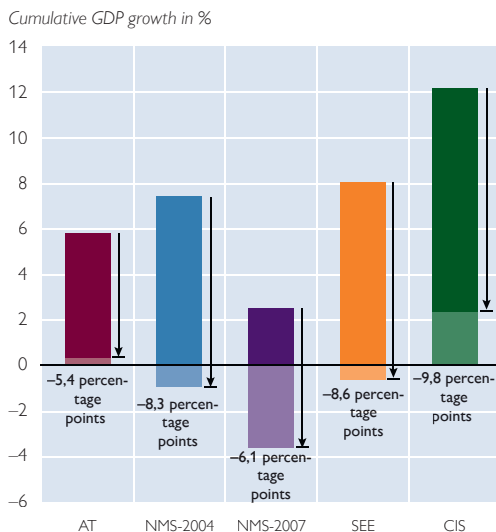
Source: OeNB.

[1] *Cumulative rate over the 2½ year stress test horizon in the benchmark scenario (dark) and in the stress scenario (light).*

Chart 35

Development of the Tier 1 Ratio in the OeNB Fall 2010 Stress Test[1]

Tier 1 ratio in %

— System in the benchmark scenario
- - "Top six" banks in the benchmark scenario
— System in the stress scenario
- - "Top six" banks in the stress scenario
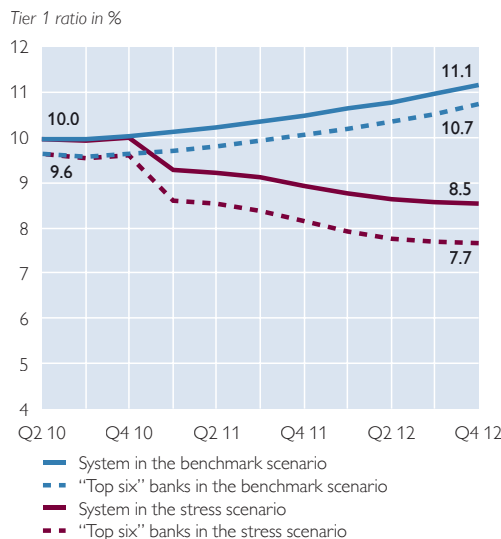
Source: OeNB.

[1] *The tier 1 ratio for Q2 10 takes mid-year profits into account.*

In the refinancing crisis scenario, the tier 1 ratio of the banking system drops by 1.5 percentage points to 8.5% by the end of 2012; the decline for the "top six" banks is 1.9 percentage points (to 7.7%). Thus, the stress scenario produces a result similar to that of the spring stress test, except that the tier 1 ratio is reduced by just under 0.5 percentage points more. This reduction, however, is not the outcome of a more severe stress scenario in absolute figures, but of the banking system's stronger sensitivity to the current scenario (in response e.g. to more stringent refinancing conditions for banks themselves). This factor, together with the extension of the simulation period by one-half year and the somewhat greater growth reduction in the stress scenario, explains why the difference between the tier 1 ratio in the benchmark and the stress scenarios is now somewhat larger than in the spring exercise.

[25] *As at November 18, 2010.*

Overall, the current stress test results indicate that the Austrian banking system's resilience to a renewed outbreak of a global crisis is intact. As far as the size of scenario impact is concerned, differences exist at the individual bank level.

Clear Signs of a Recovery on the Financial Markets

New Ratings for the Raiffeisen Group and Further Downgrade of Hypo Alpe-Adria-Bank International[25]

On August 3, 2010, the rating agency Moody's Investors Service lowered the long-term deposit rating (LTDR) for Hypo Alpe-Adria-Bank International from Baa2 to Baa3, but left the bank financial strength rating (BFSR) unchanged at E. Moody's also issued new ratings for the Raiffeisen group, after it had undergone a corporate reorganisation. The LTDR and BFSR for Raiffeisen Bank International were set

at A1 and D+, respectively, while the LTDR for Raiffeisen Zentralbank (RZB) was reduced from A1 to A2, with a BFSR no longer being assigned. The ratings of other major Austrian banks were left unchanged.

Banks' Stock Prices Still Far Below their Mid-2007 Levels

The evolution of the stock prices of the two large Austrian banks Erste Group Bank and Raiffeisen Bank International since the beginning of the global financial crisis can be divided into two distinct phases. From the onset of the crisis in the third quarter of 2007 to the end of the first quarter of 2009, the prices of the two banks' stock declined more or less synchronously, namely by 78% and 82%, respectively. Since then, they have risen significantly, but the magnitude of the increases differed markedly: by November 18, 2010, the stock of Erste Group Bank had gained 175%, while that of Raiffeisen Bank International had risen by 95%. The EURO STOXX Banks index, a benchmark for bank stocks in the euro area, was less volatile in both these phases: it declined by 74% during the downturn, but gained only 45% during the subsequent recovery. A comparison of the two Austrian banks' stock performance with the benchmark shows that the stock of Erste Group Bank has outperformed the index by 22 percentage points since the start of the financial market turbulences in summer 2007, while the stock of Raiffeisen Bank International performed 3 percentage points worse than the benchmark. The stock prices of both banks, as well as the benchmark index, are still well below the levels recorded in mid-2007.

Chart 36

Bank Stock Prices since Mid-2007

Index: July 2, 2007 = 100

- Erste Group Bank
- Raiffeisen Bank International
- EURO STOXX Banks index
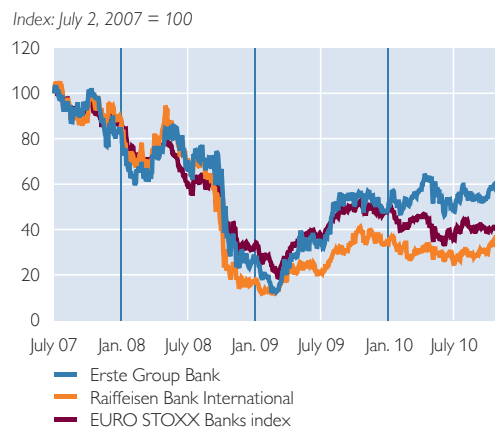
Source: Thomson Reuters.

Insurance Companies and Mutual Funds Benefit from Financial Market Recovery

Insurance Industry in Europe Recovers

Better financial results enabled the European insurance industry to raise its resilience, as measured by the solvency ratio, by 16 percentage points to 194% in 2009,[26] a trend that continued in 2010. The stock prices of listed insurance companies stabilized, but the level of the EURO STOXX Insurance index at the end of October 2010 was still some 50% lower than on July 1, 2007. At the moment, the insurance industry in Europe is preparing for the new Solvency Directive (Solvency II), which will enter into force in January 2013, by participating in the fifth Quantitative Impact Study (QIS 5), which was launched by the European Commission with a view to ensuring as precise a formulation of the new Solvency II framework as possible. Market participants currently expect Solvency II, which is more risk-oriented than Solvency I, to lead both to higher capital needs in the insurance sector and to increased investment by that industry in less risky assets.

---

[26] *Committee of European Insurance and Occupational Pensions Supervisors (CEIOPS). 2010 Spring Financial Stability Report.*

The Insurance Sector in Austria

The ongoing recovery of both the financial markets and the real economy is also reflected in the results of Austrian insurance companies. The growth of premiums written in the first quarter of 2010 (3.2% year on year) slowed down somewhat in the second quarter, in which net premium income increased by 1.8% year on year, with the premiums earned in the life insurance segment rising by 1.7%, while those in the property and casualty insurance and the health insurance segments increased by 1.6% and 2.7%, respectively. The result of financial operations[27] increased by 27%, year on year, to just under EUR 1.6 billion, thus again almost reaching the level recorded prior to the crisis (EUR 1.7 billion in Q2 07). Both the expense ratio (the share of operational expenditure in the insurance premiums written) and the loss ratio (the proportion of insurance premiums written that is spent on the settlement of claims) improved slightly over the year (see chart 37).

In the second quarter of 2010, the assets of Austrian insurance companies were mainly debt securities (62%). The OeNB's securities issuance statistics, which cover 69% or EUR 70 billion of

Chart 37

The Insurance Sector and Financial Market Stability

The closer the data points are to the center, the better the ratio.
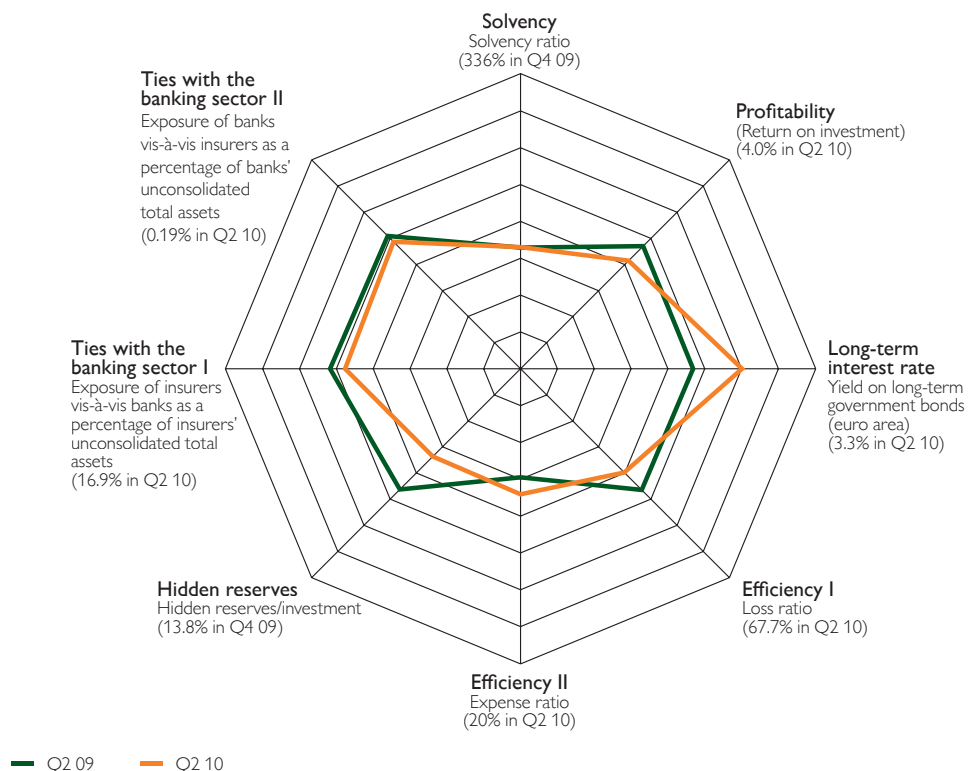
Source: Austrian Financial Market Authority (FMA), OeNB.

Note: Unconsolidated data as at the end of the second quarter of 2010; scaling on the basis of historical data.

---

[27] *Net investment income.*

the insurance sector's unconsolidated total assets,[28] show that, at the end of the second quarter of 2010, insurers had invested EUR 32.2 billion with domestic and foreign banks, and EUR 46.8 billion in the financial sector as a whole. This makes clear that the risk of contagion spreading from the financial sector to the Austrian insurance sector is significant and needs to be monitored at regular intervals.

For insurance companies with a high proportion of life insurance policies that provide for a guaranteed minimum return, the currently low level of interest rates poses a particular challenge with respect to their long-term profitability and ability to bear risks. Therefore, the minimum yield on classic life insurance policies is to be reduced by 0.25 percentage points to 2% in 2011, but this will apply only to new contracts.

Austrian Insurance Companies in CESEE

In 2009, Austrian insurance groups were active in 21 countries[29] in the CESEE region. The aggregate total assets of their subsidiaries amounted to EUR 12.2 billion (or 13% of the groups' aggregated total assets) at the end of 2009, an increase of 15.2% in comparison with 2008. Even in 2009, a difficult year, business in the CESEE region was profitable for Austrian insurers active there: premiums written by CESEE subsidiaries totaled EUR 5.8 billion (30% of the aggregated premiums written) and their income from ordinary activities amounted to EUR 249 billion (30% of aggregate income from ordinary activities).

Activities in the CESEE region focus on the more stable countries there. Accordingly, 62% of total assets held by Austrian insurance companies in CESEE at the end of 2009 originated in the Czech Republic, Slovakia and Poland, all of which are EU Member States rated A by Standard & Poor's. Over the medium term, these investments promise significant gains, although the growth rates expected for 2011 are only comparatively moderate.

In summary, the currently generally fragile economic environment gives rise to the following challenges for the insurance sector: persistently low interest rate levels over a longer period (particularly problematic in the case of products with guaranteed returns), an increase in sovereign risk and possible setbacks in the financial markets, especially in the banking sector. The risk of contagion spreading from the banking to the insurance sector, and vice versa, has declined somewhat on account of the improved environment, but it remains elevated.

Investors in Austrian Mutual Funds Prefer Bond and Mixed Funds

Assets under management in Austrian mutual funds totaled EUR 143.7 billion at the end of June 2010, an increase of 3.7% since the end of 2009. Whereas the assets under management of institutional funds rose in both of the first two quarters of 2010, those of retail funds increased in the first quarter, but declined slightly in the second. In line with these developments, the consolidated net asset value, i.e. assets under management excluding domestic inter-fund investment, remained virtually

---

[28] In these statistics, securities issuance is recorded on a nonconsolidated basis, i.e. excluding investment via subsidiaries in CESEE.

[29] Albania, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, FYR Macedonia, Georgia, Hungary, Kosovo, Moldova, Montenegro, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Turkey and Ukraine.

Chart 38

Change in the Consolidated Net Asset Value of Austrian Mutual Funds

EUR billion

Redemptions and sales
Revaluation adjustments and income
Distributed earnings

Source: OeNB.

In Austria, compared to the euro area, an above-average proportion of mutual funds (excluding money market funds) are bond funds and mixed funds (49% and 36%, respectively, at the end of June 2010). With a share of only 13%, equity funds play a minor role in Austria, while they rank second in the euro area, accounting for 28% of mutual fund assets there.

The operating profit of Austrian investment companies[32] totaled EUR 64 million in the first half of 2010, thus exceeding that recorded in the corresponding period of 2009 by 40%, but still remaining well below that of the first six months of 2007 (EUR 116 million). The improvement in the business situation of Austrian investment companies is also reflected in a significantly lower cost-income ratio (61% at the end of June 2010, compared with 67% twelve months earlier).[33]

Pension Funds and Severance Funds Benefit from the Financial Market Recovery

The recovery from the economic and financial crisis has had a favorable impact on the investment performance recorded by Austrian pension funds and severance funds. After posting a loss of EUR 1.7 billion on their investment in 2008, Austrian pension funds were able to generate profits of EUR 1.1 billion in 2009. The positive trend of 2009 continued in the first six months of 2010,[34] as is shown by the year-on-

unchanged in the second quarter, standing at EUR 120.5 billion at the end of June 2010 (+4.5% since the beginning of this year). While mutual funds still enjoyed price gains[30] to the amount of EUR 4.0 billion in the first quarter of 2010, as well as attracting strong investor interest,[31] they suffered from price losses in the order of EUR 200 million and waning investor interest in the second.

---

[30] Changes in consolidated net asset value resulting from revaluation adjustments and income.

[31] Measured in terms of redemptions and sales.

[32] Investment companies as defined in the Investment Funds Act and real estate investment companies as defined in the Real Estate Investment Funds Act.

[33] When considering these year-on-year comparisons of the figures recorded for the investment companies, it should be noted that there were 29 Austrian investment companies in operation at the end of June 2009, while there were 30 at the end of June 2010.

[34] With a quarter-on-quarter increase of almost 3%, the first quarter saw a very dynamic investment performance, but the pension funds had to take a quarterly loss of 0.5% in the second.

Chart 39

**Mutual Funds Broken Down
by Category¹**

As at end-June 2010
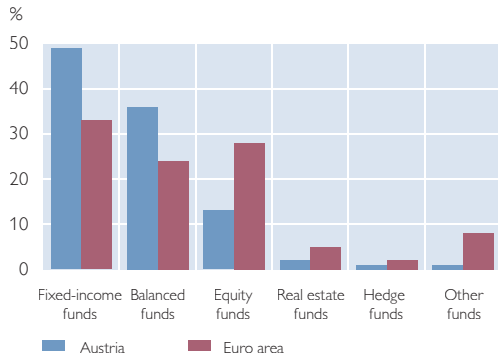
Source: ECB.

¹ Mutual funds excluding money market funds.

year investment performance of +8.6% at the end of the second quarter of 2010.[35] Viewed over a period of three years, however, the investment performance remained clearly negative, at –1.3% per annum. In the 12 months up to the end of the second quarter of 2010, total assets invested by pension funds rose substantially, by 13.5% to EUR 14.1 billion.

In the eighth year of their existence, severance funds have, of course, continued to enjoy significant asset growth; only in 10 to 15 years will inpayments equal outpayments. By the end of the second quarter of 2010, the sum total of accrued severance benefits had increased by almost 30% in comparison with the year before and amounted to EUR 3.2 billion. The Oesterreichische Kontrollbank (OeKB) puts the annual investment performance at 3.65% in 2009, a figure clearly higher than that of almost –2% recorded in 2008.

The risks involved are, in particular, those arising from the persistently uncertain financial market situation, operational risk and the increased sovereign risk (given that, according to the OeNB's securities issuance statistics, EUR 4.4 billion or 28% of the total assets held by pension funds and severance funds were government bonds,[36] while data from the Austrian Financial Market Authority (FMA) put the share of government bonds and bonds of regional and local authorities in the total assets of pension funds as high as 38.8%[37]). EUR 8.2 billion or 53% of the total assets held by pension funds and severance funds are securities issued by domestic and foreign banks; these figures highlight the fact that Austrian pension and severance funds are highly exposed to the financial sector and thus vulnerable to developments there.

[35] Source: Oesterreichische Kontrollbank (OeKB).

[36] EUR 1.2 billion of the EUR 4.4 billion are invested in bonds of countries subject to higher risk premiums (Greece, Italy, Ireland, Portugal and Spain).

[37] No data are available for severance funds.

Special Topics

Foreign Currency Lending in Central, Eastern and Southeastern Europe: the Case of Austrian Banks

Johannes Pann,
Reinhardt Seliger,
Julia Übeleis[1]

This paper describes the exposure of Austrian banks to foreign currency loans in Central, Eastern and Southeastern Europe and the CIS and elaborates on its risks to banking sector stability. Austrian banks' foreign currency loan exposure more than doubled between 2005 and 2009, their regional subsidiaries' foreign currency loan exposure continued to be higher than the market average in this period. Our findings confirm the key importance of funding risks and do not contradict the assumption of a nonlinear relationship with regard to credit risk. However, a simple comparison of risk indicators does not unambiguously indicate an overall higher credit risk in the foreign currency loan portfolio. Most recent data suggest that Austrian banks' foreign currency loan exposure is declining. Policymakers are now called upon to use the momentum and strike a balance between restricting foreign currency lending to foster a more sustainable growth path and avoiding negative procyclical effects.

1 Introduction

A striking feature of economic convergence in Central, Eastern and Southeastern Europe (CESEE) and the Commonwealth of Independent States (CIS) has been the massive extension of credit to the private sector, which entailed a high share of loans[2] denominated in foreign currency. Austrian banks – with a market share of some 15% in the region – have played a major role in this process. In some countries, notably in Baltic and Balkan states, the share of foreign currency loans to nonbanks has reached levels well above 70%. However, excessive foreign currency lending is not a new phenomenon to emerging economies. In the mid-1990s, similar developments could be observed in countries as diverse as Argentina, Peru, Uruguay and Turkey. The relevant literature gives various explanations for foreign currency lending in emerging economies, ranging from demand- and supply-side factors to macroeconomic and institutional reasons.

Most authors cite the absolute differential between interest rates on foreign and local currency loans as a key driver of demand. Moreover, stable (or even appreciating) local currencies and strong wage growth increase the perceived attractiveness of foreign currency loans. In this context, Dübel and Walley (2010) mention the "tilt effect" as a special characteristic of mortgage lending. They argue that the loan-to-value and the debt service-to-income ratios of local currency mortgage loans change rapidly during periods of high inflation since standard mortgage product payments remain constant but wages rise at least partially in line with inflation. In consequence, local currency mortgage loans may be expensive at the outset but become more affordable as inflation rises. Borrowers thus face a higher repayment burden in the

Refereed by
Thomas Reininger
and
Katharina Steiner,
OeNB

---

[2] *In our paper, the term "loan" refers to loans (excluding securities) to nonbanks only. Similarly, "deposits" always refer to deposits of nonbanks. Exceptions are explicitly stated.*

early years of such a mortgage, which makes it seem less attractive at the time of the decision to take out a loan. Therefore, many borrowers opt for foreign currency loans instead. Another motivation to take out foreign currency loans may be that borrowers have asset portfolios or expected future income in foreign currency (e.g. from work abroad, exports, remittances or holdings of foreign financial assets), which they may use to hedge against (or take advantage of) currency risks.

An informed decision on the ideal currency denomination of a loan requires a high level of financial literacy. Given the low level of credit intermediation in most CESEE and CIS markets, banks argued that unhedged foreign currency borrowers were typically individuals with high net worth or higher education. However, the sheer extent of the lending boom in some countries, the prevalence of foreign currency consumer loans and stiff competition between banks for market share (and weak consumer protection legislation in some countries) have raised doubts about this line of argument. Furthermore, foreign banks (or their local subsidiaries) may have spurred foreign currency lending in order to capitalize on their competitive advantage in this area (especially funding) and better risk management due to previous experience with such products.

Another strand of the literature stresses the importance of macroeco-

nomic or institutional factors. In some countries, for instance, high de-facto deposit euroization (or deposit dollarization[3]) has not encouraged the development of local currency capital markets. The major reasons for deposit euroization are mistrust in local institutions, hysteresis effects[4] as well as expectations with respect to the volatility of future inflation and exchange rates. On the supply side, loan dollarization can be attributed to a lack of local savings in combination with easy access to foreign funds and exchange rate-oriented monetary policies, especially in anticipation of euro adoption. In consequence, banks have often preferred to lend in foreign currency in order to avoid currency mismatches and funding risks (Brown et al., 2009; Basso et al., 2007; Luca and Petrova, 2008; Rosenberg and Tirpák, 2008; Haiss et al., 2009; Arcalean and Calvo-Gonzalez, 2006), and, in addition, have been more comfortable with loan pricing in foreign currency given the absence of long-term local currency reference rates. Bokor and Pellényi (2005) also mention fiscal policies, e.g. taxes and subsidies, and banking regulation, e.g. capital requirements for foreign currency loans, as the drivers of the supply of and the demand for foreign currency lending (e.g. Hungary).

On the demand side, some evidence suggests that interest rate differentials may play a key role. Borrowers who have assets and/or income in foreign

---

[3] In line with de Nicoló et al. (2003, p. 5), by referring to residents' use of foreign currency deposits, we refer to a mix of payment dollarization (foreign currency demand deposits) and financial dollarization (foreign currency term deposits). De Nicoló et al. (2003, p. 5) distinguish between three generic types of dollarization: payment dollarization (also known as currency substitution) referring to residents' use of foreign currency in cash, demand deposits, or central bank reserves for transaction purposes; financial dollarization (also known as asset substitution), which consists of residents' holdings of financial assets or liabilities in foreign currency; and real dollarization, which refers to indexing, formally or de facto, of local prices and wages to the U.S. dollar (euro). In turn, financial dollarization may be domestic (i.e. associated with claims of residents, including against the government), or external (i.e. associated with the claims of nonresidents against residents).

[4] Hysteresis here refers to the continued use of foreign currency deposits due to past experience of high inflation or hyperinflation.

currency may wish to close their own open foreign currency position by taking out a foreign currency loan. Unhedged borrowers, in turn, may wish to take out foreign currency loans if the local currency is expected to appreciate. With respect to regulatory policies, Rosenberg and Tirpák (2008) found that the success of past measures to curb foreign currency borrowing in CESEE and the CIS had been limited, and the role of foreign banks remains disputed.

There is remarkably little cross-country research on the empirical facts of foreign currency lending despite the importance of the issue for CESEE and the CIS. Moreover, prevailing empirical research has focused on aggregate country data – with the notable exception of Brown et al. (2009) – and neglected cross-border lending. To our knowledge, there exists no up-to-date study examining bank-specific data even though the global financial crisis and its repercussions have underlined the risks of foreign currency lending. Whereas for consumers, foreign currency loans entail mainly exchange rate risks, they affect banks' overall risk profile, involving indirect credit risk, concentration risk, funding risk, exchange rate risk, operational risk, legal risk, reputational risk or socio-political risk. The major threat to banking sector stability are concentration risks since foreign currency lending exposes otherwise heterogeneous borrowers to the same risk factor (i.e. the exchange rate) and therefore undermines diversification. Moreover, foreign currency lending increases the dependence of banks on the proper functioning of international financial markets to hedge against exchange rate risks, and thus induces contagion risks. The risks to stability will be compounded further if a large number of banks follow similar strategies

(e.g. Austrian banks in CESEE and the CIS).

This paper addresses the various aspects of foreign currency lending in CESEE and the CIS from a banking sector stability perspective with a focus on the credit, funding and earnings risk positions which had been built up in the period before the crisis hit CESEE and the CIS. We draw on a database that contains data on Austrian banks' direct cross-border foreign currency lending and indirect foreign currency lending via subsidiaries. The period covered by the data allows us to elaborate on the dynamics of foreign currency lending in the run-up to and during the crisis.

The paper is structured as follows: Section 2 gives an overview of the data. In section 3 we describe the development of Austrian banks' foreign currency loan portfolios and their current exposure. Section 4 complements this assessment by an analysis of the risk implications, both from a theoretical as well as an empirical perspective. Finally, we conclude and propose directions for future work in section 5.

2 Data and Method

We analyze two categories of foreign currency loans – direct and indirect foreign currency loans – drawing on data from the supervisory and monetary statistics of the Oesterreichische Nationalbank (OeNB).

For the former, data for cross-border direct loans of Austrian banks are taken from the monthly monetary statistics and the OeNB's Central Credit Register (Großkreditevidenz, GKE). In the monthly monetary statistics, each bank reports its loans broken down by currencies and sectors (mainly households and nonfinancial corporations; for countries outside the EU, a clear differentiation between sectors is not possible). The GKE provides credit risk

data, which, however, cannot be disaggregated by currency. Therefore, the comparability of the quality of banks' foreign currency loans with that of local currency loans is limited. Furthermore, the GKE contains only loans over EUR 350,000, meaning there is a bias towards corporate loans.

Data for indirect loans granted by Austrian subsidiaries abroad is not readily available as part of any standard reporting package. Instead, the OeNB has collected data in biannual surveys from the six largest Austrian banking groups since 2005. This allows us to draw conclusions and make comparisons concerning the behavior of individual banks and their respective foreign currency portfolios in CESEE and the CIS[5] and concerning subregional[6] as well as country-specific patterns.

In 2009, the OeNB increased the frequency of reporting to a quarterly basis and has since refined the survey to reflect the increased risks associated with foreign currency lending. Initially, the survey required banks to report for each country and subsidiary the volumes of foreign and local currency loans and the respective values for collateral and loan loss provisions. The survey was later extended to include more detailed information on nonperforming loans, restructuring, collateral and risk provisioning as well as qualitative questions concerning natural hedges and bullet loans, and leasing contracts. Many topical questions, e.g. regarding loan-to-value ratios or natural hedges, were dealt with on a one-off basis. As it stands, the survey now requires banks to split their loan portfolios into currencies, sectors and (purpose) subsectors (consumer, mortgage), including a breakdown by newly granted loans and remaining maturities. For reasons of data protection, specific country data are omitted wherever only one or two banks have subsidiaries. Some data were available for the first quarter of 2010, but generally, December 2009 is the primary point in time of analysis.

Our main hypotheses are rather heterogeneous and therefore require a differentiated methodical approach. Our assumptions are: First, Austrian banks' growth model in CESEE relies to a larger extent on foreign currency loans than that of local banks due to the former's competitive advantage in funding and home market experience in this area; second, foreign currency loans entail a higher credit risk or at least the existence of a nonlinear relationship between market and credit risk; third, foreign currency loans undermine banks' funding not only in the short but also in the medium term; and fourth, foreign currency lending may be driven by higher profitability due to the mispricing of country risk. Given these assumptions, we have to investigate not only long-term but also short-term developments (e.g. liquidity risk). Furthermore, we have to rely extensively on qualitative techniques since the quality of our data sample (providing, e.g., only a small number of cross-sections or short time series) allows only simple quantitative methods. The purely descriptive and illustrative analysis of our micro dataset is supple-

[5] Note that our sample of CESEE and CIS countries includes Albania, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Hungary, Kazakhstan, Latvia, FYR Macedonia, Montenegro, Poland, Romania, Serbia, Russia, Slovakia, Slovenia and Ukraine.

[6] The subregions under investigation are the aggregates NMS-2004, NMS-2007, SEE and CIS. NMS-2004 includes the Czech Republic, Hungary, Latvia, Poland, Slovakia and Slovenia; NMS-2007 includes Bulgaria and Romania. SEE includes Albania, Bosnia and Herzegovina, Croatia, FYR Macedonia, Montenegro and Serbia. CIS includes Belarus, Kazakhstan, Russia and Ukraine.

mented with consistency checks based on publicly available data (especially for market comparisons on the country level), relevant but private information (about, e.g., ECB tenders) and case studies. Simple regressions are performed for events (i.e. cross-sections only), and some correlations are illustrated in scatter plots.

3 Development of Foreign Currency Lending of Austrian Banks in CESEE and the CIS

In the 1980s and increasingly – following the fall of the Iron Curtain – during the 1990s, Austrian banks expanded to neighboring CESEE and the CIS countries. Among the other EU countries whose banks hold large stakes in CESEE and CIS in terms of their exposure as measured by the BIS only French banks have engaged in an equally long-lasting and intact expansion.

The expansion depicted in chart 1 has essentially been twofold: Austrian banks have granted loans both directly to companies in CESEE and the CIS as well as indirectly, by establishing (greenfield investments) or acquiring banks in CESEE and the CIS and granting loans through these subsidiaries. Austrian banks' foreign currency loan exposure can now be split into three categories: (1) indirect loans granted to customers in CESEE and the CIS by Austrian subsidiaries in the region (volume as at December 2009: EUR 79 billion); (2) direct loans granted to CESEE and the CIS customers from Austria (volume as at December 2009: approximately EUR 41 billion); and (3) foreign currency leasing contracts, which represent the smallest group by far (as at December 2009: EUR 6 billion) and can be regarded as (a close relative of) loans.

3.1 Loans Granted by Austrian Banks' Subsidiaries in CESEE and the CIS

As illustrated in chart 2,[7] Austrian banks and their subsidiaries saw their businesses and respective foreign currency loan portfolios more than double – from EUR 31 billion to almost EUR 79 billion – between the end of 2005 and year-end 2009. This increase is partly due to organic growth but also the result of various acquisitions of banks in CESEE and the CIS.

In December 2008, however, with the financial crisis gaining momentum, foreign currency loans peaked at EUR 78.9 billion. After a slight decline by 2.3% year on year in 2009, Austrian regional subsidiaries' foreign currency loan exposure stood at EUR 77.3 billion as at the fourth quarter of 2009. However, given that the foreign currency loan ratio did not decline overall, the absolute decline in foreign currency lending should be understood in the context of a general lending market

Chart 1

Selected EU Countries' Asset Exposure¹ to CESEE and the CIS

EUR billion
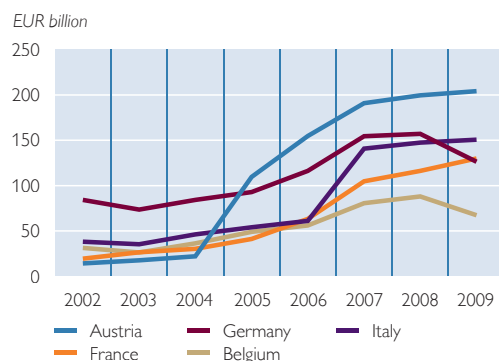
Source: BIS.

¹ Exposure not adjusted for mergers and acquisitions (e.g. Hypo Group Alpe Adria or Bank Austria).

---

[7] Countries which introduced the euro during the observation period have been adjusted retrospectively i.e. the euro is treated as home currency in Slovenia and Slovakia before its actual introduction in these countries.

Chart 2

Share¹ and Volume of Foreign Currency Loans in the Portfolios of Austrian Banks' Subsidiaries in CESEE and the CIS

EUR billion   %

— Foreign currency loans (volume, left-hand scale)   — Foreign currency ratio (right-hand scale)
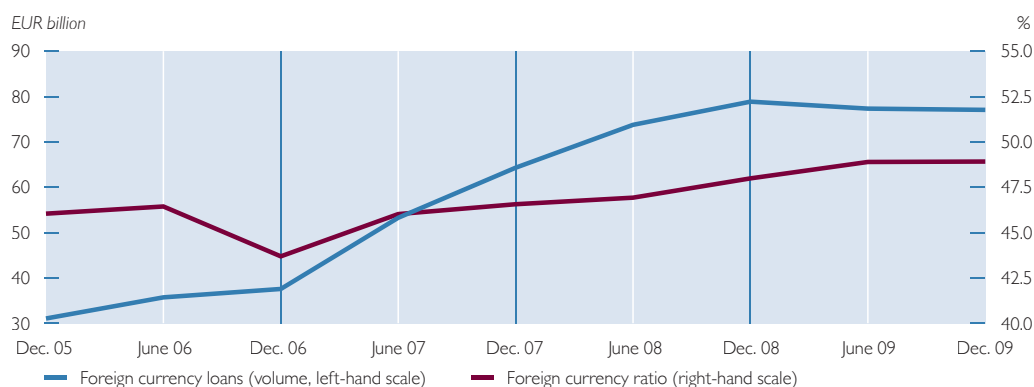
Source: OeNB.

¹ *The foreign currency ratio is the share of foreign currency loans in the total loan volume.*

downturn in CESEE and the CIS rather than a shift to local currency loans. The foreign currency share remained practically unchanged at 48.9% between the second and the fourth quarters of 2009 and was almost equal for households (EUR 31 billion) and nonfinancial corporations (EUR 46 billion).

Besides the growth of foreign currency loans over the past five years, the exposure became increasingly concentrated in Croatia (EUR 16 billion), Hungary (EUR 13 billion), Romania (EUR 12 billion), Russia (EUR 8 billion) and Ukraine (EUR 6 billion); in these countries, 71% of foreign currency loans (as at the fourth quarter of 2009) have been granted by Austrian regional subsidiaries. Also, the country profiles of individual banks must be taken into

Chart 3

Foreign Currency Loan Growth by Country

EUR billion

Croatia   Hungary   Romania   Russia   Ukraine   Other
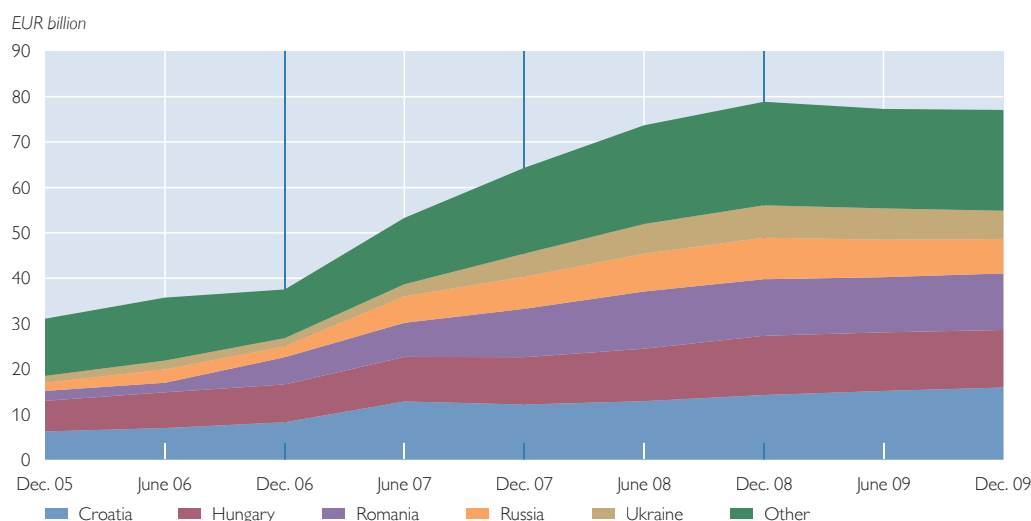
Source: OeNB.

Chart 4

Relation between the Market Share of Austrian Banks' Subsidiaries and the Foreign Currency Share in Their Loan Portfolios[1]

Market share in %

Deviation from average foreign currency share of Austrian banks' subsidiaries in the respective country in percentage points

- Acquisitions
- Greenfield
- Linear (acquisitions)
- Linear (greenfield)
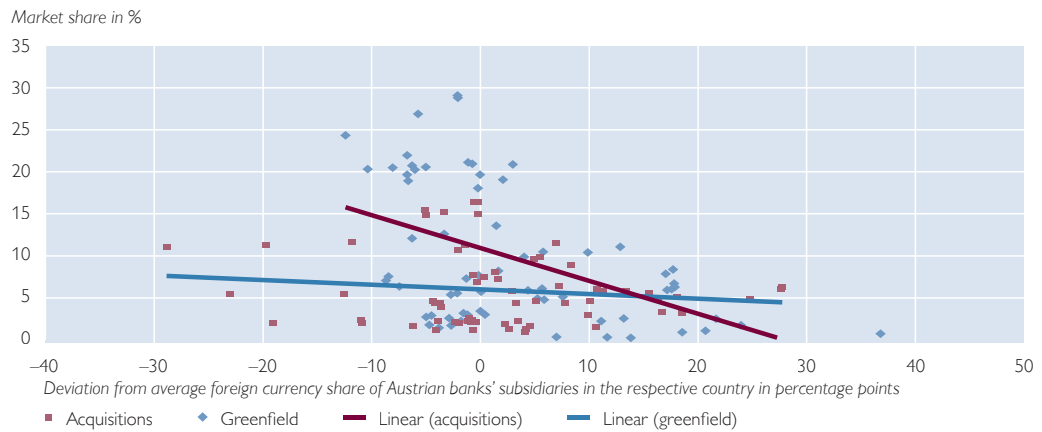
Source: OeNB.

[1] *Squares and diamonds represent individual subsidiaries (data from December 2007, 2008 and 2009 respectively).*

account. At all large banking groups, there is one country that accounts for at least a 20% share of their respective foreign currency loan portfolios; at several banks, this share was even as high as 40%.

Looking at indirect loans, we see that Austrian subsidiaries with smaller market shares (especially those that have been acquired) tend to have a foreign currency loan share above the country average. This could be attributed either to initial difficulties attracting deposits in local currency or a more aggressive push for market share.

A comparison of loan portfolios of Austrian banks with those of their local competitors shows that in almost all CESEE and CIS countries, Austrian banks still have higher ratios of foreign currency loans than their local competitors, which may be because the former

Chart 5

Foreign Currency Loan Share – Austrian Banks versus Competitors

%

- Austrian subsidiaries 2007
- Austrian subsidiaries 2009
- Other banks 2007
- Other banks 2009
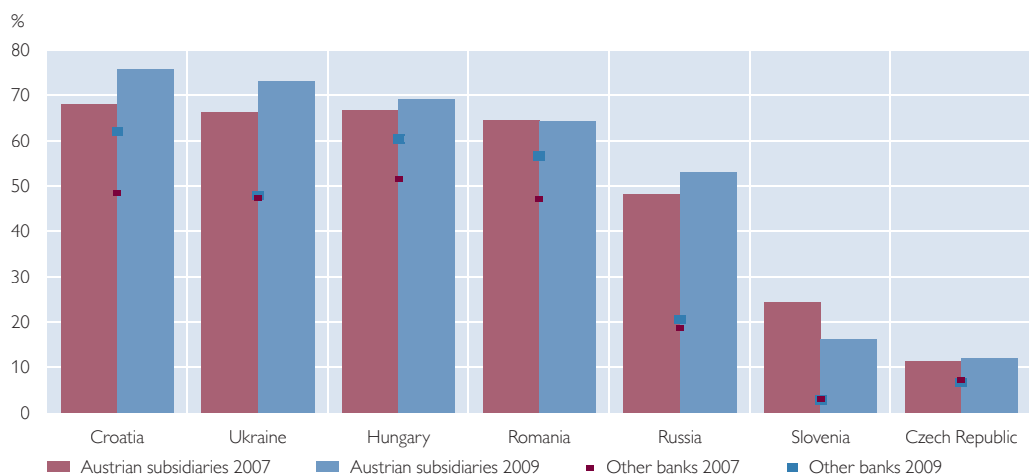
Source: OeNB.

have benefitted from advantageous funding. Over time, this relative position has been rather constant, with neither Austrian banks pulling away, nor competitors closing the gap in all markets.

The trends since the outbreak of the financial and economic crisis have been rather inhomogeneous. In some countries, e.g. Hungary, Romania and – to some extent – Croatia, competitors' foreign currency loan shares have actually approached those of Austrian banks from year-end 2007 to year-end 2009. In the dollarized CIS countries Ukraine or Russia, on the other hand, the share of foreign currency loans in the portfolios of Austrian subsidiaries has continued to be significantly larger than this share in their local competitors' portfolios.

3.2 Cross-Border Loans Granted by Austrian Banks

Over the past decade, the growth of cross-border (i.e. direct) foreign cur-

rency loans (to nonbanks) broadly corresponded to that of indirect loans. Cross-border loans to nonbanks are essentially loans to corporations, the share of loans to households is well below 1% (as data from the GKE show). After expanding from EUR 16.2 billion in December 2005 to EUR 38.2 billion in June 2009, cross-border foreign currency loans contracted by 5.9% to stand at EUR 36.8 billion at the end of 2009. The foreign currency loan ratio for cross-border loans changed only moderately, declining very slowly from 92.7% to 90.9% over the same time period.[8]

Comparing the foreign currency share of direct loans with that of indirect loans reveals no visible (negative or positive) correlation, neither at the individual bank level, nor at the country level over time. One explanation is that the composition of the portfolios and correspondingly, the motives of lenders and borrowers differ greatly.

Chart 6

Growth of Foreign Currency Cross-Border Loans
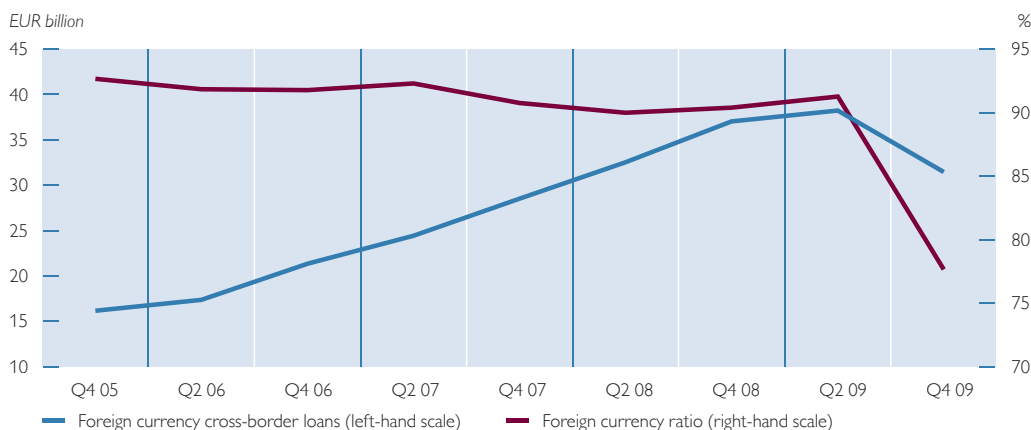
Source: OeNB.

---

[8] Euro loans to Slovenian and Slovakian customers are treated as foreign currency loans throughout the whole time span shown in chart 6 (irrespective of the adoption of the euro as the national currency), since it was our intention to illustrate primarily that there was no change in the foreign currency share over time that had been caused by banks' policies. The "real" foreign currency loan exposure at end-2009 is EUR 31.5 billion, representing a 77.6% share in cross-border loans.

4 Risks of Foreign Currency Lending in Emerging Markets

In general, an assessment of the credit risk of private sector borrowers in emerging markets suffers from severe limitations such as short histories or poor quality or nonavailability of data. Under these circumstances, foreign-owned parent banks tend to rely more on local expertise and collateral than on cash flow analyses and credit assessments when lending in emerging markets. Local managers of subsidiaries in growth markets, in turn, face ambitious budgetary targets set by foreign-owned parent headquarters, which entices them to underreport credit risk (Dubravko, 2008).[9] Regarding the effectiveness of risk mitigation techniques, many emerging markets carry higher legal risks, like weaker bankruptcy procedures and higher costs of bankruptcy proceedings (Dubravko, 2008, and PricewaterhouseCoopers, 2010), which impinge on the realization of collateral.[10]

Foreign currency lending in emerging markets involves additional layers of credit risk. Currency weakening through depreciation in emerging economies is usually more extreme and disorderly than the depreciation of major market currencies. In addition, an increase in foreign currency interest rates, a rise in the funding costs for the parent bank resulting in a pass-through to loan rates, or, in the case of hedged borrowers, a slump in foreign currency income due to a weakening of demand by main trading partners or lower remittances from abroad – all these factors could increase the payment burden of the borrower. Due to a lack of hedging instruments, willing counterparties or liquid markets, banks in turn could be less able to hedge against credit risk in their emerging market loan books in crisis times. Other risks, like foreign currency funding risk, arise primarily due to deposit gaps in the respective currency and the corresponding need for friction-free access to wholesale funding. Earnings risk stems mainly from lower net interest income resulting from higher funding costs.

With regard to indicators showing the occurrence of credit risk, conventional, but not yet internationally standardized, measures like nonperforming loan (NPL) ratios and loan loss provision (LLP) ratios can often be used as lagged indicators only. Drawing conclusions from these indicators about credit risk is subject to another caveat: Country-specific precedents show that banks may try to conceal rising credit risk by restructuring problem loans or off-balance-sheet measures, which help temporarily keep NPL ratios and LLP ratios low (IMF, 2010). Market-based indicators of rising credit risk like the five-year senior sovereign CDS spreads representing country risk, which can be regarded as the floor for credit risk spreads of local customers (except possibly for large, internationally active corporations), had already not boded well from 2008 onwards. Sound risk management requires not only the consideration of some kind of country risk premiums in the lending process but also in the calculation of intra-

---

[9] *Regarding Austrian parent banks, an informal remark from an Austrian banker with strong CESEE and CIS expertise, qualifying loan loss provisioning in subsidiaries of Austrian parent banks in CESEE and the CIS as "a residual" vis-à-vis budgeted profits as at mid 2009, confirms the picture.*

[10] *Legal risk arose e.g. in Ukraine, when parliament adopted a law imposing a moratorium on the repossession of citizens' private residential buildings that had been used as collateral for loans on May 21, 2009. The law was then vetoed by the president, however.*

group fund transfer prices, at least to reflect money market realities and account for political risks (e.g. currency controls or regulatory changes). However, the pass-through of country risk premiums to external prices depends on banks' market power and competitive strategies, which ultimately entail earnings risk. In what follows, we will analyze both the credit, funding and earnings risk dimension of Austrian banks' foreign currency lending in CESEE and the CIS in more detail.

4.1 Credit risk

4.1.1 Credit Risk Indicators for Indirect and Direct Lending by Austrian Banks in CESEE and the CIS

OeNB survey data on indirect lending indicate a steep rise in loan loss provisions for foreign currency loans between year-end 2008 and year-end 2009, mainly driven by a substantial worsening of loan quality in the CIS due to a strong economic contraction and marked currency depreciation (chart 7). While the foreign currency LLP ratio for all indirect lending in CESEE and the CIS hovered at quite low levels until the end of 2008, it more than doubled in 2009 to reach 4.9%, the same level as the local currency LLP ratio. On a subregional level, the local currency LLP ratios in the NMS-2004, the NMS-2007 and SEE continued above foreign currency LLP ratios, with the exemption of CIS.[11] Nevertheless, the yearly increase in the foreign currency LLP ratio beyond the level of the local

currency LLP ratio (except for SEE) points to a relative increase in foreign currency loan risk. Previously higher local currency LLP ratio levels can be attributed to a relatively higher local currency repayment burden due to higher local currency loan rates or the potentially tighter credit standards for foreign currency borrowers.

The main driver behind the swift rise of foreign currency LLP ratios was the stepped-up need for loan loss provisioning in U.S. dollars in the CIS following the marked contraction of the Russian and Ukrainian economies in 2009 and the weakening of local currencies. Currency depreciation also affected Kazakhstan, which, however, continued to grow, albeit at a slower pace.[12]

A customer segment-based view shows that the foreign currency NPL ratio and LLP ratio for households were lower than those for corporates in CESEE and the CIS as at end-2009. On a subregional basis, the situation was the opposite in the CIS and the NMS-2007, where the coverage of corporate foreign currency NPLs by loan loss provisions was lower than in the case of households.

Regarding nonperforming loans, we saw a rise of foreign currency NPL ratios by 39% to 10.5% of all foreign currency loans and a more moderate increase of local currency NPL ratios – by 33% to 9% of all local currency loans – for the aggregate CESEE and the CIS in the second half of 2009. The

---

[11] *The share of mortgage loans in total foreign currency loans to households is higher compared with local currency loans, which may exert a dampening effect on foreign currency LLP ratios due to a higher extent of collateralization. In the CIS, the share of corporates prevails over the "mortgage effect."*

[12] *The predominance of corporate borrowers, who account for 72% of the total indirect foreign currency loan volume, is a striking feature of foreign currency lending in the dollarized CIS. For the case of Kazakhstan, according to the IMF (2010), companies generating income in foreign currency account for only a relatively small share of total loan volume compared to the share of unhedged borrowers in construction, real estate and retail. According to OeNB survey data, Russia is the only country with a high share of naturally hedged indirect loans. If this holds true, a swift economic recovery based on higher price-based competitiveness on the back of a weaker local currency will not necessarily result in a concomitant recovery of foreign currency LLP ratios for corporate loans in the CIS.*

Chart 7

Loan Loss Provision Ratios for CESEE and CIS Countries

Local and Foreign Currency Loans in CESEE and CIS
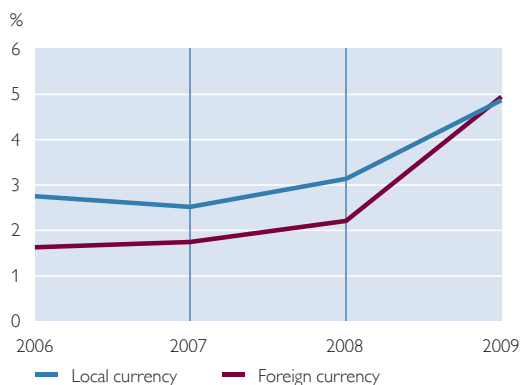
Foreign Currency Loans on a Subregional Basis
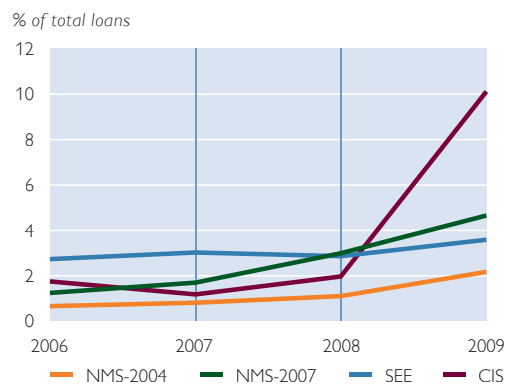
Source: OeNB.

fast dynamics of the NPL ratios led to a general fall in coverage by provisions,[13] which was more marked for local currency-denominated nonperforming loans, from 65% to 54%, while the coverage of foreign currency nonperforming loans fell from 50% to 47%.

With the exception of the CIS, however, all foreign currency coverage ratios were below the local currency coverage ratios as at the end of 2009. The fall in the coverage of foreign currency loans in the NMS-2007 aggregate was most marked and may indicate an increased

Table 1

Loan Loss Provision Ratios, Nonperforming Loan Ratios and Coverage Ratios on a Subregional Basis

	NMS-2004		NMS-2007		SEE		CIS	
	Foreign currency	Local currency	Foreign currency	Local currency	Foreign currency	Local currency	Foreign currency	Local currency
As at June 2009	%							
Nonperforming loan ratio	5.4	5.4	4.7	6.9	7.8	8.2	11.9	11.9
Loan loss provision ratio	1.9	3.1	3.7	5.4	3.5	4.7	6.2	9.1
Coverage ratio	34.7	58.2	78.2	78.2	45.6	57.0	51.7	76.7
As at December 2009	%							
Nonperforming loan ratio	6.3	6.7	7.7	10.4	9.3	12.9	19.3	16.3
Loan loss provision ratio	2.2	3.5	4.7	7.4	3.6	6.5	10.1	8.5
Coverage ratio	34.7	52.2	60.3	71.4	38.4	50.4	52.4	52.0

Source: OeNB.

[13] As data on risk provisions on NPLs are available only for end-2009, we took total loan loss provisions as a proxy. As at end-2009, risk provisions on NPLs are available, and they show a lower coverage: 38% of foreign currency NPLs and 51% of local currency NPLs are covered by provisions.

future need for provisioning (table 1). Data on collateral for NPLs are only partially available, which does not allow a reliable estimate of the further need for provisioning.

Looking at data on direct lending by Austrian parent banks to customers in CESEE and the CIS (direct lending is overwhelmingly corporate lending, with foreign currency loans accounting for an estimated 77%), the coverage of nonperforming direct loans by provisions is quite low, amounting to about 36%, which corresponds to the coverage ratio for indirect corporate lending.[14]

Although the dynamics of loan loss provisioning for direct loans to CESEE and the CIS accelerated from the second to the fourth quarter of 2009, with an increase in the LLP ratio by 70%, the still very moderate LLP ratio for directly granted loans of 2.7% as at end-2009 has been a prominent point of analysis, since cross-border loans have long yielded lower LLP ratios than corporate loans extended to domestic customers in Austria. LLP ratios and NPL ratios for direct loans are about one-third lower than the respective ratios for indirect corporate loans. This difference between LLP ratios for direct and indirect corporate loans is mainly attributable to a high share of direct loans granted to subsidiaries of multinationals in CESEE and the CIS, many of which also have their headquarters in Austria. This evidently lowers credit risk thanks to parental support and, furthermore, implies a

higher share of naturally hedged direct foreign currency corporate borrowers.[15]

4.1.2 Foreign Currency Lending, Risk Costs and Exchange Rate Volatility

The current crisis showed that exchange rate volatility plays a key role in foreign currency lending and credit quality. This fact is illustrated in the following charts, which plot the exchange rate-induced changes in the loan portfolio (i.e. the assumed increase in the repayment burden for foreign currency borrowers due to a depreciation of the local currency) against the changes in banks' risk costs. Both charts suggest a positive correlation between the increase in the repayment burden and risk costs for countries with flexible exchange rates. The impact of adverse exchange rate developments seems to be less pronounced in the case of direct loans,[16] supporting the hypothesis that such borrowers enjoy better protection through natural hedges and a higher creditworthiness in general.

Austrian banks' risk costs in countries with currencies pegged to the euro developed rather heterogeneously. Local currency interest rate changes and (for specific subsidiaries) the quality of risk management before the crisis played a major role. From a policy perspective, our findings underline the crucial role of exchange rate-oriented policies of international financial institutions in the prevention of banking sector crises in general. In the special case of CESEE and CIS, the amply

---

[14] GKE data show five different types of loans (specialized lending, revolving loans, nonrevolving loans, leasing loans, securitized loans) above a threshold of EUR 350,000. The estimated share of direct foreign currency lending in total direct lending of 77% was based on the currency split taken from the OeNB's monetary statistics because there is no currency split available for GKE data.

[15] The OeNB survey as at end-December 2007 showed that the share of naturally hedged direct loans ranged between 30% and 100% according to information by four banks. The share of naturally hedged indirect corporate loans ranged between below 20% and 70%.

[16] The size of the data points of direct loans corresponds to the loan volumes in the respective country as at the second quarter of 2008.

Chart 8

Impact of Exchange Rate Volatilities on Loan Loss Provisions

Indirect Loans of Austrian Banks – Bank Level

Increase in loan loss provision ratio in percentage points (Q2 08–Q4 09)
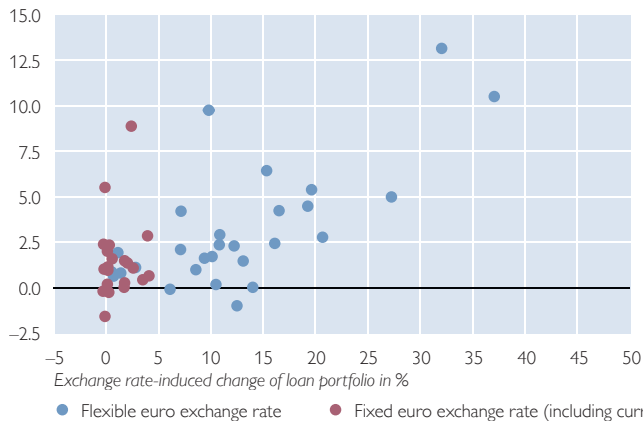
Direct Loans of Austrian Banks – Country Level

Increase in loan loss provision ratio in percentage points (Q2 08–Q4 09)

Exchange rate-induced change of loan portfolio in %

● Flexible euro exchange rate   ● Fixed euro exchange rate (including currency boards)
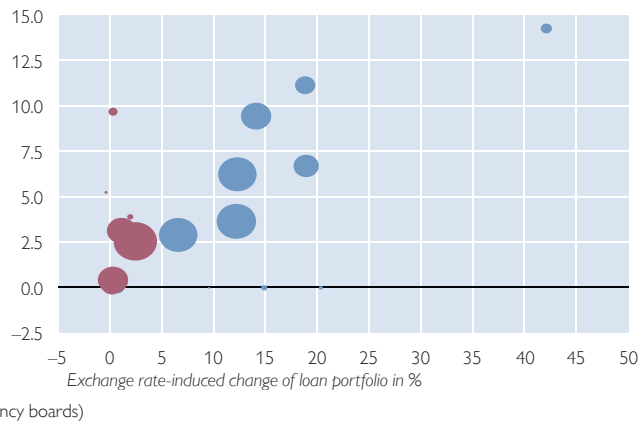
Source: OeNB.

Note: In the left-hand panel, volumes refer to loan portfolios.

4.1.3 Evidence of Credit Risk in Hungary, Romania and the Ukraine

dimensioned and decisive international support in cooperation with local authorities may even have avoided the collapse of the whole regional banking system.

Hungary, Romania and Ukraine are countries with nonpegged exchange rate regimes, in which foreign currency lending accounts for a major share of their respective banking system's loan book and whose currencies have depreciated significantly recently (by 20% and more) vis-à-vis their main borrowing currencies, the Swiss franc, the euro and the U.S. dollar; therefore, we chose these three countries for a more detailed investigation. All three countries have been supported by international financial institutions, though with mixed success. Ukraine has shown a strong connection between the depreciation of the local currency and loan loss provisions, whereas this link has been weaker for Romania and Hungary.

We observe a mixed picture regarding the credit risk of foreign currency loans: Whereas in Ukraine, the NPL ratio for foreign currency — mainly U.S. dollar — loans was higher than the NPL ratio for local currency loans up to the fourth quarter of 2009 for the indirect lending portfolio, in Hungary, where Swiss franc-denominated loans have prevailed, and in Romania, where mainly euro-denominated loans had been taken out, the NPL ratio for foreign currency loans has been lower compared with the NPL ratio for local currency loans (table 2). This picture holds for both customer segments, corporates as well as households. In Hungary, the coverage ratios for households have been in general low, irrespective of the denomination of the loan.

The data for Romania and Hungary could also mirror a delayed fallout from local currency weakening, however. This delay can be attributed to various cushioning effects: Natural hedges on the borrower side in terms of foreign currency cash flows or collateral, lower foreign currency loan rates, timely foreign currency loan restructuring for

**Loan Loss Provision Ratios, Nonperforming Loans Ratios and Coverage Ratios
for Hungary, Romania and Ukraine**

	Hungary		Romania		Ukraine	
	Foreign currency	Local currency	Foreign currency	Local currency	Foreign currency	Local currency
As at Q4 09						
Nonfinancial corporations	%					
Nonperforming loans ratio	6.7	11.5	9.1	9.5	26.7	21.6
Loan loss provisions ratio	2.6	6.5	4.4	4.9	14.1	8.9
Coverage ratio	39.0	56.7	48.3	51.4	52.6	41.1
Households	%					
Nonperforming loans ratio	6.8	20.2	9.0	14.6	28.0	26.0
Loan loss provisions ratio	2.0	5.6	5.9	11.6	16.3	6.3
Coverage ratio	30.2	27.8	65.8	79.8	58.2	24.0

Source: OeNB.

corporate customers (MNB, 2010)[17] as well as focusing foreign currency lending on customers of higher creditworthiness have helped dampen the rise in NPL ratios. Nevertheless cushioning effects can balance depreciation and a deteriorating economic outlook only to a certain extent: The case of Ukraine gives good evidence that a massive economic contraction accompanied by a large local currency depreciation leads to an accelerated increase of foreign exchange rate volatility-induced credit risk.

Due to a lack of country-specific data, we are not able to discern whether natural hedges have played a larger role in Romania and Hungary than in Ukraine, but qualitative information indicates that loan volumes of naturally hedged borrowers have accounted for only a limited share of foreign currency loans. According to OeNB survey data, the share of naturally hedged borrowers

in CESEE and the CIS varied substantially across customer segments and banks. The share of naturally hedged corporate foreign currency borrowers ranged from close to 0% to below 50%, implying that quite a high share of loans had gone to the mainly unhedged nontradable sector.[18] Foreign currency lending to naturally hedged households in CESEE and the CIS was negligible (lower than 10%), indicating that remittances from abroad had played a minor role for borrowers' household income. Historical precedents give evidence of substantial shares of foreign currency lending to unhedged borrowers e.g. in Asia or in Argentina (Bank of Argentina, 2004, and Lindgren et al., 1999).

The higher vulnerability of households to exchange rate volatility-induced credit risk deserves particular attention, as the case of Hungary illustrates: The sectoral structure of foreign currency

---

[17] This is supported by international financial institutions, like the World Bank Group's IFC, even for long-term loans, of which large corporates took advantage e.g. in Hungary: "[Banks] mainly restructured foreign currency-denominated loans in the large-sized enterprises segment."

[18] In Romania, the share of real estate investment loans in total foreign currency loans to nonfinancial companies increased markedly from 2008 to 2009 (see Dragulin, 2010).

borrowers shows a marked share of households taking out foreign currency loans since 2002/03. Király et al. (2008) conclude that it is households who "are the real foreign currency risk takers," especially since it is them who support the currency in case of fundamental imbalances. Compared with corporate foreign currency borrowers, households usually have fewer options to financially hedge their (small volume) foreign currency exposures at low costs.

Banks reacted to the rise in foreign currency loan-related credit risk by increasing their provisioning, receiving intra-group guarantees from their parent banks and by restructuring foreign currency loans. In the second half of 2009, the coverage ratios for non-performing foreign currency loans increased in Ukraine and Hungary (accompanied by a fall in nonperforming local currency loans), and came down from a high level in Romania, where the coverage of nonperforming local currency loans fell in tandem.

Restructuring of foreign currency loans accelerated in the second half of 2009.[19] In Ukraine, the share of restructured corporate foreign currency loans amounted to almost 30% at mid-2009, markedly exceeding the share of restructured local currency loans. In the foreign currency loan book of subsidiaries in Hungary and Romania, the shares of restructured loans reached single-digit levels below the restructuring shares of local currency loans, according to data by four banks included in the OeNB survey. For total restructured mortgage loans,

re-default levels indicated by Hungarian banks amounted to 10% to 20% and for loans linked to repayment vehicles to 20% to 30% (MNB, 2010). By comparison, in the case of Thailand, previously restructured nonperforming loans which later reverted again into the nonperforming loans category accounted for, on average, more than one-third of the total nonperforming loans volume, according to statistics of the Bank of Thailand.

Due to the tendency to delay credit risk-related losses by restructuring, the general vulnerability of the three countries under investigation and the recent rise in country risk, the credit risk of foreign currency loans is expected to continue to rise.

Over the medium term, a further fall in the interest rate differential between lower interest rates on foreign currency loans and higher interest rates on local currency loans in Romania, Hungary and Ukraine may act as the main driver of lowering foreign currency loan-related credit risk on banks' balance sheets.

4.2 Funding Risks

The previous section discussed indirect (credit) risks that arise for banks from lending in foreign currency. This section examines funding and liquidity risks in conjunction with loans and deposits denominated in foreign currency, and thus direct risks to banks. We investigate the existence of "currency mismatches" (i.e. the currency composition of loans does not match the currency composition of deposits) as a consequence of which banks face

[19] *We define "restructuring" in this context as the process by which an institutional lender (such as a bank) modifies or relaxes the terms of a loan agreement to minimize the eventual loss by accommodating a borrower who is likely to become financially incapable of meeting them. Restructuring measures entail for example extending the tenor, forgiving part of the loan, restructuring payments before redemption, or any other measures affecting the net present value of the loan." (see MNB, 2010)*

exchange rate risks. If banks do not want to (or are not allowed to) bear these risks, they can hedge either against other on-balance sheet items (e.g. interbank loans) or through off-balance sheet operations (e.g. currency swaps). However, hedging operations increase banks' dependence on financial market stability in general.

In the current crisis the improper functioning of major cross-currency swap markets threatened to result in the occurrence of foreign currency funding risks. In the case of Hungary, for instance, the share of foreign currency loans amounted to about 60% (with Austrian banks accounting for about 63%) and that of foreign currency deposits to 20% in autumn 2008. Together with a loan-to-deposit (LD) ratio of nearly 140% (Austrian banks: about 150%), the actual lack of foreign currency funds was even higher. After the default of Lehman Brothers and the drying-up of liquidity in interbank markets, swap agreements between the Swiss National Bank, Magyar Nemzeti Bank and the ECB ensured the availability of sufficient Swiss franc and euro swaps to refinance hedges for foreign currency loans and calm markets in Hungary. Currency mismatches were less significant in Romania and Ukraine, but LD ratios in these two countries still came to about 140% and 190% respectively. Austrian banks benefitted from euro liquidity and U.S. dollar swap lines provided by the ECB. However, in relative terms, the Swiss franc facility proved to be especially important for Austrian banks, not least because of the domestic Swiss franc-denominated loan exposure. Austrian banks accounted for, on average, 28% of all bids in Swiss franc swap tenders and in July 2009 for even 45%, representing an average share of 2.4% in euro liquidity.

Prolonged swap market illiquidity would have exposed banks to earnings risks (in the best case) and to direct exchange rate risks (in the worst case). Effective hedges prevented the latter, but sharp local currency depreciations caused a deterioration of the structural refinancing position. More precisely, the excess of foreign currency loans over foreign currency deposits in conjunction with weaker local currencies led to a further increase in the LD ratio of Austrian banks' subsidiaries in CESEE and the CIS from 112% in the second quarter of 2008 to 120% in the first quarter of 2009 (or a jump in the deposit gap by 55%) despite the economic downturn. In some countries, Austrian banks' subsidiaries also suffered from deposit outflows due to the decreasing confidence in banks during the crisis (see Dvorsky et al., 2009), though opposite flows were observed too.

Table 3 shows the results of simple cross-section regressions with the change in the LD ratio from the second quarter of 2008 to the first quarter of 2009. In general, the test statistics of the slope

Table 3

Slope Parameter of Simple Regressions at Bank Level

obs=46 for all countries
obs=20 for fixed exchange rates
obs=26 for flexible exchange rates

Dependent variable	Change in loan-to-deposit ratio (Q2 08–Q1 09)	
Independent variables as at Q2 08	Weighted foreign currency mismatch	
All countries	0.378	**
Fixed exchange rates	0.265	
Flexible Exchange rates	0.383	**

Note: Weighted foreign currency mismatch = difference between foreign currency loans and deposits in % of total deposits; * indicates significance at the 5% level, ** indicates significance at the 1% level; sample adjusted for three outliers.

parameters confirm that currency mismatches played a significant role in countries with flexible exchange rates but not in countries with fixed exchange rates. However, the positive correlation in the case of countries with fixed exchange rates is not surprising either, given the possible interpretation of the share of foreign currency loans as either an indicator of the lack of trust in local institutions or a banking risk indicator.

Subsidiaries' higher structural refinancing needs had to be met mainly by parent banks (intragroup funds: +EUR 7 billion or 15%) since local interbank markets remained frozen. In other words, parent banks had to increase their net exposure to CESEE and the CIS while other investors were busy withdrawing funds from the region. As mentioned before, this behavior may have also been a sign of commitment to the region and the right thing to do, but it weakened the funding position of the Austrian banking sector as a whole and added risks to banking sector stability in the home country, especially since some parent banks had overstretched their balance sheets already before the crisis (showing, e.g., LD ratios above 300%). To prevent the occurrence of contagion risks, the Austrian government adopted a large bank support package and did not impose any restrictions on the reallocation of funds. In the course of 2009, Austrian banks focused on "rightsizing" (i.e. mainly downsizing) their CESEE and the CIS activities and managed to reverse some adverse developments against the background of international support.

4.3 Earnings Risks

Recent experience gave evidence that an important aspect of earnings risk is related to the increase in the cost of foreign currency funding in the event of a financial market crisis. An additional, more structural, risk may arise when banks fail to add adequate country risk premiums when setting local lending terms. When parent banks do not adequately account for such risks in their internal funds transfer pricing models, local subsidiaries, having access to cheap funding via their parent banks, may have an incentive to keep lending rates favorable in order to pursue an aggressive growth strategy. Parent banks, on their part, may opt for capitalizing on their funding advantage in order to gain market share. The excessive loan growth rates in the run-up to the crisis indicate that either scenario may have been taking place in CESEE and the CIS.

However, we were unable to detect a significant correlation between Austrian subsidiaries' foreign currency lending and profitability figures (i.e. interest margin and return on assets), despite robustness checks (e.g. deviations from market averages). This indicates that parent banks at least to some extent charge country risk premiums. A shortcoming of our analysis may be the reliance on indicators derived from banks' financial statements, given the lack of more comprehensive and standardized data.

Neither do data on actual interest rates provided by national central banks for the aggregate sector, as illustrated in chart 9, indicate that higher profitability is an incentive for foreign currency lending. However, there is evidence from Austria that noninterest fees and commissions attached to foreign currency loans tend to be higher than those of local currency loans (Epstein and Tzanninis, 2005). First, local currency lending to households (especially in the case of housing loans) appears to have been more profitable than foreign currency lending – on a risk adjusted

Chart 9

Interest Rates on Loans Granted to Households (New Business) versus Interbank Market Rates (3 Months)

Hungary
Percentage points

Romania
Percentage points

Ukraine
Percentage points

Legend:
- Local currency interbank rate
- Foreign currency loans
- Foreign currency interbank rate
- Interest margin (less risk premium)
- Sovereign CDS spread
- Interest margin (incl. risk premium)
- Local currency loans
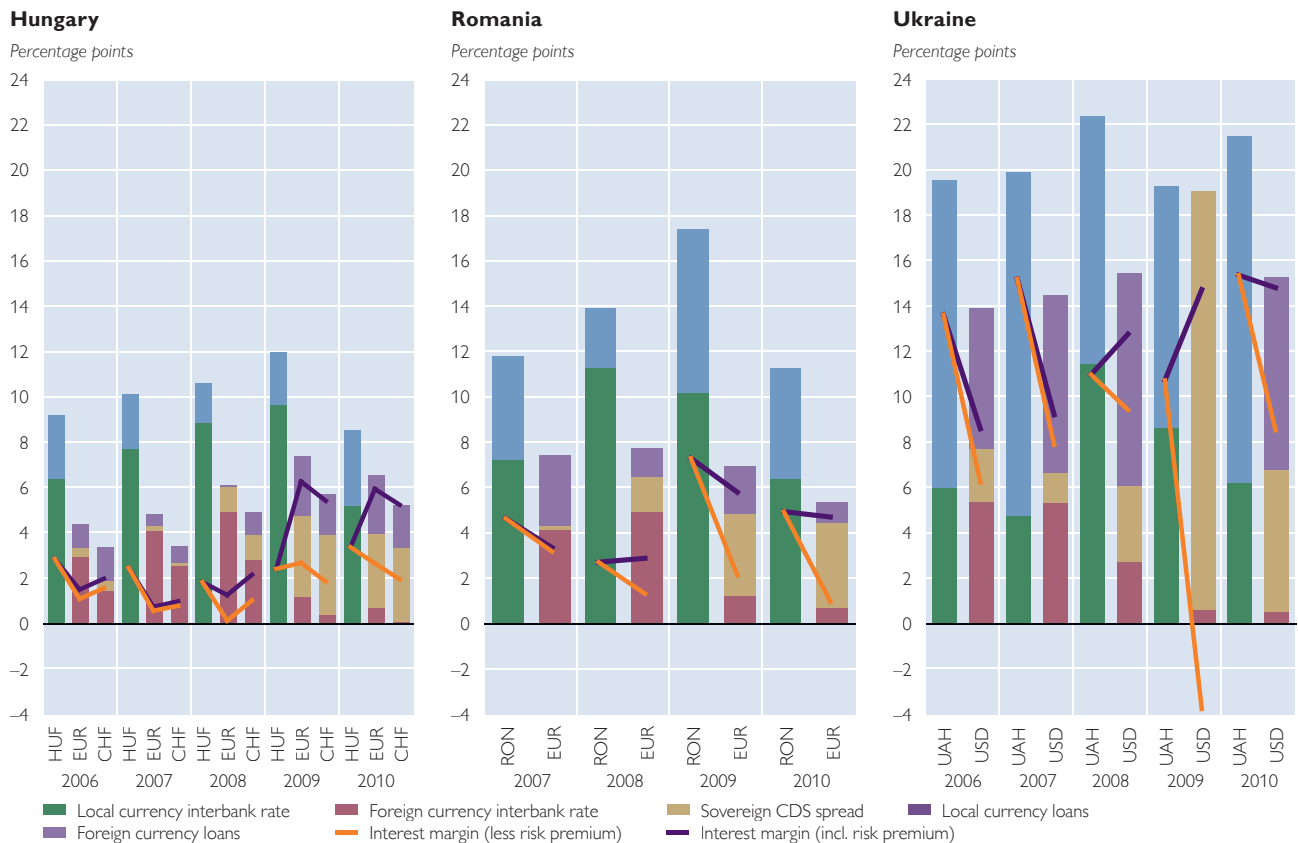
Source: National central banks.

Note: Interest rates on loans refer to housing loans (except for Ukraine), the reference month for each year is June.

basis – in the run-up to the crisis. This finding is robust to changes in the computation of the interest margin (i.e. deposits instead of interbank funds). Second, the large differences between interest rates charged on local currency loans and those on foreign currency loans may explain the strong demand for foreign currency loans. Third, the jump in risk premiums during the crisis led to a further decrease in the relative attractiveness of foreign currency loans and suggests a general mispricing of risk before the crisis. Fourth, banks may be able to generate additional fee income from currency conversions on behalf of foreign currency borrowers but – in contrast to the Austrian market – not from repayment vehicles linked to

foreign currency bullet loans given their minor importance (as indicated by surveys).

5 Conclusions

In the run-up to the current crisis, foreign currency lending to nonbanks was a striking feature of the credit boom in CESEE and the CIS. This paper describes the exposure of Austrian banks, which hold a market share of about 15% in the region (about 22% excluding Russia), to foreign currency loans and discusses associated risks to banking sector stability. For this purpose, we draw on a micro database on Austrian banks which covers direct cross-border lending as well as indirect lending via subsidiaries.

From end-2005 to end-2009, aggregate direct and indirect foreign currency lending by Austrian banks in the region increased by about 75% and 150% respectively, and the foreign currency share in Austrian banks' subsidiaries' loan portfolios was above market average. At the micro level, however, the foreign currency loan portfolios and foreign currency loan shares developed rather heterogeneously.

The sharp depreciations of some of the local currencies in CESEE and the CIS led to the occurrence of indirect credit risks inherent in foreign currency lending. Yet, crude data on the levels of nonperforming loans and loan loss provisions of Austrian banks' subsidiaries do not indicate an overall higher credit risk in the foreign currency loan portfolio. The accelerated deterioration in the respective figures on the credit risk of foreign currency loans, especially the lower coverage ratios, hints at unrealized losses and remaining vulnerabilities (e.g. due to anticipatory restructuring). Moreover, the local currency exchange rate flexibility seems to have played a major role. Evidence on country level even indicates a nonlinear relationship between the occurrence of indirect credit risk from foreign currency lending and local currency depreciation. Loan loss provisions for foreign currency loans in Ukraine, for instance, rose disproportionately more strongly than in Hungary and Romania, given the extent of the currency weakness in the former country. These findings apply to direct foreign currency lending too, but only to a minor extent, presumably due to a larger share of natural hedges and borrowers with generally higher creditworthiness (e.g. subsidiaries of Austrian nonfinancial corporations).

The current crisis also revealed the funding risks inherent in a foreign currency loan portfolio that is not adequately matched by foreign currency deposits. First of all, the turmoil in interbank markets put a strain on foreign currency risk hedging operations. Second, weaker local currencies resulted in a deterioration of structural refinancing positions. And finally, parent banks did not only have to substitute more volatile funding sources but also meet their subsidiaries' increased refinancing needs. It was the intervention of central banks that avoided a prolonged liquidity squeeze and capital losses due to involuntarily open foreign currency positions.

With regard to earnings risks, we did not find evidence – neither on the basis of individual bank data nor according to aggregate data – in favour of the hypothesis of the higher profitability of foreign currency lending.

Several local authorities took measures to curb foreign currency lending already before the crisis. However, some foreign-owned banks managed to circumvent these regulations, especially via cross-border loans, and thus undermined their effectiveness. International institutions and home supervisors teamed up with host supervisors only when the crisis was in full swing to avoid regulatory arbitrage, develop alternatives and reduce associated financial stability risks. Furthermore, the intervention by governments and international institutions considerably mitigated the crisis impact. In the near future, policymakers must therefore use the momentum and restrict foreign currency lending in order to support a more sustainable growth path while avoiding negative pro-cyclical effects. Current relevant initiatives in Austria include the implementation of the Guiding Principles on Foreign Currency Lending of the Financial Market Authority and the OeNB; at the EU level,

proposals to change the capital requirements for foreign currency loans together with the consultation on responsible lending have been put forward, and at the pan-European level, the "Vienna Initiative Plus" has been launched.

Our most recent data suggest that Austrian banks' exposure to foreign currency loans in CESEE has been on the decline, at least vis-à-vis traditional carry-trade currencies (i.e. Japanese yen and Swiss franc) and in absolute terms; the decline has been carried mostly by receding foreign currency loan exposures in CIS countries, however, which is not surprising given the lower attractiveness of foreign currency financing for emerging markets in crisis times and authorities' greater risk awareness.

This paper represents only a first step in the analysis of the build-up, the triggers and the consequences of the (financial) crisis in CESEE and the CIS.

Our findings shed light on certain aspects but are far from conclusive, not least due to data restrictions. Future research should tackle open issues (e.g. dynamics in competition or internal funds allocation of cross-border banking groups) and elaborate in more detail on the different types of risks and their interrelation and on appropriate measures of risks (e.g. profitability). In this context, it will be important to differentiate between taking and the occurrence of risks (e.g. effectiveness of restructuring). Future work could also provide further information on initiatives on foreign currency lending in CESEE. More generally, research has to be conducted on the (macroeconomic) costs and benefits of foreign currency lending, especially regarding the establishment of reasonable alternatives to foreign currency lending (e.g. development of local currency markets).

References

Arcalean, C. and O. Calvo-Gonzales. 2006 Foreign currency lending in emerging European economies. ECB. Mimeo.

Bank of Argentina. 2004. Financial Stability Report.

Bank of Thailand. Statistics on causes for gross NPLs increasing classified by business sector. www2.bot.or.th/statistics/Download/FI_NP_006_ENG_ALL.XLS (as retrieved on July 14, 2010).

Basso, H., O. Calvo-Gonzalez and M. Jurgilas. 2007. Financial dollarization – the role of banks and interest rates. ECB Working Paper 748.

Beer, C., S. Ongena and M. Peter. 2010. Borrowing in foreign currency: Austrian households as carry traders. In: Journal of Banking and Finance 34. 2198–2211.

Bokor L. and G. Pellényi. 2005. Foreign currency denominated borrowing in central Europe: trends, factors and consequences. International Center for Economic Growth – European Center Opinion No. 5.

Boss, M. 2003. Struktur und Risiken von Fremdwährungskrediten in Österreich. OeNB. http://www.oenb.at/de/img/fremdwaehrungskredite_2003_tcm14-9912.pdf (as retrieved on July 14, 2010).

Brown, M., S. Ongena and P. Yesin. 2009. Foreign currency borrowing by small firms. Center Discussion Paper No. 2008-16.

Calin, A., and O. Calvo-Gonzalez. 2006. Foreign currency lending in emerging European economies. Working Paper.

Degryse, H., O. Havrylchyk, E. Jurzyk and S. Kozak. 2009. Foreign bank entry and credit allocation in emerging markets. IMF Working Paper WP/09/270.

De Nicoló, G., P. Honohan and A. Ize. 2003. Dollarization of the Banking System: Good or Bad? IMF Working Paper WP/03/146.

Dragulin I., 2010. Presentation at the OeNB's workshop on "Macrofinancial Stability in CESEE: Have We Learned All the Lessons?" on June 21, 2010.

Dübel H.-J. and S. Walley. 2010. Regulation of foreign currency mortgage loans – the case of transition countries in Central and Eastern Europe. World Bank Global Housing Finance Conference, Washington D.C., May 26 and 27, 2010.

Dubravko, M. 2008. The financial stability implications of increased capital flows for emerging market economies. In: Financial globalisation and emerging market capital flows. BIS Papers vol. 44.

Dvorsky, S., T. Scheiber and H. Stix. 2009. CESEE Households amid the Financial Crisis: Euro Survey Shows Darkened Economic Sentiment and Changes in Savings Behavior. Focus on European Economic Integration Q4/09. OeNB. 71–83.

Dvorsky, S., T. Scheiber and H. Stix. 2010. Real Effects of Crisis have reached CESEE AND CIS Households: Euro Survey Shows Dampened Savings and Changes in Borrowing Behavior. In: Focus on European Economic Integration Q2/10. OeNB. 79–90.

EBRD. 2010. Vienna Initiative. http://ns2.ebrdjobs.com/pubs/factsh/investor/viennainitiative.pdf (as retrieved on July 14, 2010).

Epstein, N. and D. Tzanninis. 2005. Austria: Selected Issues, IMF Country Report 05/249.

European Central Bank. 2010. Addressing risks associated with foreign currency lending in EU member states. In: ECB Financial Stability Review June 2010. 161–169.

European Commission. 2009a. Public consultation on responsible lending and borrowing in the EU. Brussels.

European Commission. 2009b. Consultation regarding further possible changes to the Capital Requirements Directive ("CRD"), Brussels.

European Commission. 2010. Public consultation regarding further possible changes to the Capital Requirement Directive ("CRD"). Brussels.

Haiss, P., A. Paulhart and W. Rainer. 2009. Verbreiten ausländische Banken Fremd-währungskredite in der CEE Region? In: Bankarchiv 2009 (11). November. 786–798.

IMF. 2010. Republic of Kazakhstan: Selected Issues. IMF Country Report No. 10/237. July.

Király, J., J.M. Antal, M. Nagy and V. Szabó. 2008. Retail credit expansion and external finance in Hungary: lessons from the recent past (1998–2007). In: Financial globalisation and emerging market capital flows. BIS Papers vol. 44.

Lindgren, C.-J., J.T. Balino, C. Enoch, A.-M. Gulde, M. Quintyn and L. Teo. 1999. Financial Sector Crisis and Restructuring. Lessons from Asia. IMF Occasional Paper No. 188.

Luca, A. and I. Petrova. 2008. What drives credit dollarization in transition economies? In: Journal of Banking and Finance 32(5). May. 858–869.

MNB – Magyar Nemzeti Bank. 2010. Report on Financial Stability. April.

Nagy, P. 2010. Answer to FC and Foreign Savings Dependence: Organic Local Currency and Local Capital Market Development and Risk Management - EBRD perspective: A New Initiative. Presentation at OeNB Workshop on „Macrofinancial Stability in CESEE: Have We Learned All the Lessons?" June 21, 2010.

PricewaterhouseCoopers. June 2010: NPL Europe Issue 2.

Rosenberg, C. and M. Tirpák. 2008. Determinants of foreign currency borrowing in the New Member States of the EU. IMF Working Paper WP/08/173.

Tzanninis, D. 2005. What explains the surge of foreign currency loans to Austrian households. In: Austria – Selected Issues. IMF Country Report WP/05/249.

Russian Banks on the Route of Fragile Recovery

Stephan Barisitz,
Mathias Lahnsteiner[1]

Largely thanks to the recovery of the real economy, the situation of Russian banks has improved again. After month-on-month loan growth had quickly ground to a halt in late 2008, banks contributed to Russia's deep economic slump in 2009. The share of nonperforming loans had tripled to 10% of total loans by late 2009 and has since remained at about this level. An incipient recovery of lending made itself felt only in the second quarter of 2010. However, as the national authorities had delivered a comprehensive policy response which helped sustain or reestablish confidence, Russia did not experience any major bank run or failure. Temporary deposit withdrawals after the collapse of Lehman Brothers were followed by a rapid expansion of deposits, starting from early 2009. Following a modest crisis-triggered rise, the share of foreign currency loans declined again to about one-fifth of total loans. Banks' access to international capital markets improved from late 2009/early 2010. Profitability, having plunged to zero in mid-2009, subsequently recovered but is still modest. Thanks to recapitalization exercises, capital adequacy is satisfactory. The stabilization of the banking sector has allowed the authorities to start exiting from crisis response measures. Banks face a vulnerable environment given the world economy's post-crisis fragility and Russia's undiminished dependence on the oil price and capital flows, which is exacerbated by persisting structural weaknesses. Nonetheless, the existing shock-absorbing factors are sizeable.

1 Macroeconomic Background: From Crisis-Triggered Slump to Recovery

Russia suffered a deep economic contraction in 2009 and is now slowly recovering again. While banks had contributed to the severe slump, they are not yet among the driving forces of the recovery. After having contracted by 7.9% in 2009 – notwithstanding the authorities' comprehensive anti-crisis policy package – GDP is estimated to have expanded again in the first eight months of 2010, namely by around 4% year on year. The plunge and recovery of oil and metal prices as well as substantial capital outflows and their subsequent partial reversal contributed to the downturn and to the following upswing. In the downturn, gross fixed capital formation and inventory stocks collapsed, while imports slumped more than exports and, hence, the contribution of net exports limited the extent of recession. In the upswing, export expansion was followed by both private consumption and finally fixed investment recovery.

The ruble's nominal effective exchange rate depreciated from end-July 2008 to end-February 2009 by 18%, before regaining 13% until end-August 2010. Most recently, the Central Bank of the Russian Federation (CBR) rendered exchange rate policy more flexible, which allowed for increased volatility of the ruble in September 2010. Reappreciation and the persisting output gap were largely responsible for CPI inflation touching a post-Soviet low of 5.5% (year on year) in July 2010. Inflation rose again to 7.0% in September due to the impact of this year's summer heat wave. The CBR continued to make use of the window of opportunity that low inflation offered to support

Table 1

Macroeconomic Indicators

	2006	2007	2008	H1 09	2009	H1 10
Real GDP growth (annual change in %)	8.2	8.5	5.2	−10.2	−7.9	4.2
Inflation (average-of-period CPI, annual change in %)	9.8	9.1	14.1	13.3	11.8	6.7
Inflation (end-of-period CPI, annual change in %)	9.1	11.9	13.3	12.0	8.9	6.1
Budget balance (general government, % of GDP)	8.4	6.0	4.9	×	−6.3	×
Current account balance (% of GDP)	9.6	6.0	6.1	3.4	4.0	7.5
Net FDI inflows (% of GDP)	0.7	0.7	1.1	−1.1	−0.6	−0.6
Total gross external debt (% of four-quarter rolling GDP)	30.1	33.2	30.4	32.5	36.6	37.0
Gross external debt of the banking sector (% of four-quarter rolling GDP)	9.7	11.6	10.4	9.9	10.0	9.9
Gross international reserves (% of four-quarter rolling GDP)	29.2	34.3	27.0	28.7	34.4	37.4
RUB per 1 USD (average of period)	27.2	25.6	24.8	33.1	31.8	30.1
RUB per 1 EUR (average of period)	34.1	35.0	36.4	44.1	44.1	39.9

Source: Bank of Russia, Federal State Statistics Service, Thomson Reuters.

economic recovery and fight the crisis-triggered credit crunch: It lowered the refinancing rate from 13% in April 2009 to 7.75% at end-May 2010. Since then this key rate has been kept unchanged. As table 1 shows, total gross external debt (with private corporates accounting for the lion's share) has remained manageable at 37% of GDP in mid-2010 and is matched by the size of the foreign exchange reserves.

2 Impact of the Crisis on the Banking Sector

Sizeable capital outflows (both on the assets and the liabilities side of the economy) in the fall of 2008 hit the already feebly functioning interbank market, whose interest rates spiked in early 2009. Given the liquidity squeeze, some small and medium-sized banks, which often had limited deposit bases, grew illiquid and defaulted. Month-on-month expansion of loans[2] ground to a halt in late 2008 and the loan stock started to decline. Given the real economy's downturn, credit quality started to deteriorate: The share of nonperforming loans (narrow definition, NPLs) in total loans more than doubled to 7.6% in the year to mid-2009, and continued to rise.[3] The increase in NPLs also outstripped growth of provisions. In late 2008, the financial market turmoil and the pressure on the ruble temporarily hit depositors' confidence, as savers withdrew ruble deposits. While there was no major run on banks, redollarization tendencies reemerged, as part of the withdrawn money was switched into foreign currency-denominated deposits. Despite the rise of the latter, total deposits declined. Also driven by exchange rate effects, the share of foreign currency-denominated deposits in total deposits of the private sector doubled to about one-third from mid-2008 to end-March 2009. Profitability (ROA, ROE) plunged to almost zero in mid-2009, before starting to recover.

[2] In this article, loans and deposits are defined as related to the private sector, i.e. they exclude interbank loans and deposits.

[3] NPLs as defined in Russian Accounting Standards (RAS) do not correspond to international standards. NPLs according to a wider definition (see also table 2) or measured in line with IFRS are about twice as high.

3 Comprehensive Policy Response

The Russian authorities' policy response was comprehensive and included important measures to inject liquidity (on the part of the government and the CBR). A case in point was the placement of CBR deposits in banks' portfolios; such deposits rose from almost nil to about 14% of banks' balance sheet total at end-March 2009, before declining again. Other measures included (1) the introduction of regulatory forbearance by easing loan classification and provisioning requirements, (2) selective governmental capital injections into large state-owned banks (Vneshekonombank/ VEB, Vneshtorgbank/VTB, Sberbank and Rosselkhozbank), partly for bailing out four medium-sized banks, (3) closures of some smaller banks, (4) a more than two-fold increase of the deposit insurance limit and (5) a controlled step-wise devaluation of the ruble from mid-November 2008 to late January 2009.[4] The authorities' entire crisis-response package, which was not exclusively aimed at the banking sector, is estimated at about 10% of annual GDP; according to government calculations, it mitigated GDP contraction in 2009 by about 2%.

Banks' and other entities' sizeable capital outflows (downsize of external liabilities and buildup of external assets) in the fourth quarter of 2008 implied purchasing foreign currency assets with rubles, which contributed to depreciation pressures. The CBR limited the currency depreciation to a controlled step-wise devaluation by means of substantial foreign exchange interventions. This implied a major loss of foreign exchange reserves, which were effectively transferred to commercial banks and companies. From end-August 2008 to end-February 2009, the CBR's foreign exchange reserves fell by about one-third or almost USD 200 billion. As the ruble depreciated further, credit institutions were able to make exchange rate and trade gains. Thus, in the year until end-March 2009, banks' external assets doubled; from mid-2009, they exceeded banks' external liabilities, which had declined as a result of refinancing and funding problems abroad.

4 Recent Developments

4.1 Internal and External Funding Situation Improves

The stabilization of private sector deposits in early 2009 was followed by a rapid expansion over the subsequent one and a half years. The end of the step-wise ruble devaluation policy and the comprehensive policy response seem to have contributed to boosting depositors' confidence. From March 2009 to August 2010, deposits rose by some 24% in real (CPI-deflated) terms. Deposit expansion was mainly driven by ruble-denominated deposit inflows from households. As foreign currency-denominated deposits of the private sector remained rather stable (adjusted for exchange rate effects) following their increase in late 2008 and early 2009, the share of foreign currency deposits declined from one-third in the first quarter 2009 to one-fifth by mid-2010. As deposits increased much more strongly than loans, the loan-to-deposit ratio declined from 175% at end-2008 to 132% by mid-2010 (see table 2).

While deposits increased, tensions on the interbank market faded in the course of 2009, also thanks to policy measures. Money market rates quickly came down from their spikes recorded in early 2009. The improved liquidity

---

[4] *For more detail on important initial crisis-response activities, see Barisitz et al. (2009), pp. 135–137.*

situation in the banking sector allowed the authorities to start exiting from extraordinary liquidity support and banks to repay their debt to the CBR ahead of schedule. Therefore, CBR funds on the liability side of the banking sector shrank. Moreover, banks increasingly deposited surplus liquidity at the central bank and invested in CBR bonds. The net asset position vis-à-vis the central bank, that had turned deeply negative in the first quarter of 2009 (–5% of GDP), became positive again in the final quarter of the year. The higher share of liquid assets in total assets and the increased ratio of liquid assets to short-term liabilities (above 100% at end-2009 and in mid-2010) also illustrate the improved liquidity position of the Russian banking sector.

Following large asset- and liability-side net foreign capital outflows in the second half of 2008 and in early 2009, capital continued to flow out of the Russian banking sector until the third quarter of 2009. On the liability side alone, net flows remained negative until the final quarter of 2009, reflecting debt repayment and tight external financing conditions. In 2010, the external financing situation improved, however, and the banking sector posted net inflows on the liability side in the first quarter of the year and only small outflows in the second quarter.[5] As the component short-term loans contributed strongly to total outflows in 2008 and 2009, the share of short-term external debt in banks' total external debt fell from one-third in mid-2008 to 18% in

the third quarter of 2009. Due to a reaccumulation of short-term debt and redemptions of long-term loans, this share reached 25% by mid-2010. The Russian banking sector remained a net external creditor until mid-2010, but the position started to narrow from the fourth quarter of 2009 as a result of improved access to (and usage of) foreign funding and a slight decline of assets held abroad.

4.2 Turnaround in Credit Quality and Profitability – Restart of Loan Growth?

After NPLs had risen particularly strongly until mid-2009, the deterioration of loan quality started to decelerate in the second half of 2009 (see chart 1, left-hand panel). In 2010, the share of NPLs (narrow definition) in total loans stabilized at about 10% and was fully covered by provisions. Banks' restructuring of problem loans, the real economic recovery and the appreciation of the ruble – which decreased the debt servicing costs for unhedged foreign currency borrowers – certainly contributed to the easing of pressures on credit quality.[6] In turn, the stabilization of NPLs went hand in hand with a marked decline in the net creation of loss provisions in the first half of 2010. As a consequence, profitability was pushed up to more comfortable levels despite a noticeable decline in net operating income (that had held up well during 2009), with annualized ROA and ROE reaching 1.7% and 10.9%, respectively, in the first half of 2010.

---

[5] *Some Russian banks have recently been able to tap the eurobond market. For example, Vneshtorgbank concluded three deals in 2010 (until September) comprising a total of EUR 1.47 billion. This good news has not, however, prevented medium-sized Mezhprombank (which ranks among the country's 30 largest credit institutions) from defaulting on its EUR 200 million eurobond in July 2010 – the first eurobond default by a Russian bank in more than a decade. The market seems to have judged Mezhprombank's default as a one-off case. The CBR repealed the bank's license in October 2010 (Norton, 2010, p. 241; Ekonomika i Zhizn, 2010, p. 5).*

[6] *While restructuring certainly helped reign in bad loans, precise information seems to be lacking on how many outstanding loans were actually restructured during the crisis (IMF, 2010a, p. 2).*

Selected Banking Sector Stability Indicators

	2006	2007	2008	H1 09	2009	H1 10
Credit risk						
Loans to the private sector (% of four-quarter rolling GDP)[1]	29.2	36.0	38.8	40.5	40.1	38.3
Real growth of loans to the private sector (annual change in %)	34.3	36.0	18.6	−0.3	−10.6	−5.9
Real growth of loans to the private sector (exchange rate-adjusted, annual change in %)	37.6	38.1	14.2	−6.2	−11.0	−5.2
Loans to households (% of loans to the private sector)	23.8	24.7	24.9	22.8	22.7	22.7
Nonperforming loans (% of total loans, narrow definition)[2]	2.4	2.5	3.8	7.6	9.6	9.5
Nonperforming loans (% of total loans, broad definition)[3]	×	11.0	13.5	17.3	19.5	20.0
Market and exchange rate risk						
Foreign currency loans to the private sector (% of private sector loans)	22.0	20.0	22.2	23.7	21.8	21.1
Foreign currency loans to households (% of loans to households)	15.9	13.4	11.8	12.2	11.1	10.3
Foreign currency deposits of the private sector (% of private sector deposits)	16.3	13.9	27.1	28.8	25.7	21.9
Deposit rate, households (%)[4]	6.1	7.1	9.9	10.3	9.2	6.1
Deposit rate, corporations (%)[4]	5.7	7.2	10.6	11.4	8.7	5.7
Lending rate, households (%)[5]	15.5	15.0	18.1	20.5	19.2	18.1
Lending rate, corporations (%)[5]	11.7	11.5	14.1	16.0	13.8	11.7
Liquidity risk						
Private sector deposits (% of four-quarter rolling GDP)	28.6	22.2	22.2	25.1	29.2	29.1
Real growth of private sector deposits (annual change in %)	89.6	−14.5	−5.9	4.1	4.7	15.2
Real growth of private sector deposits (exchange rate-adjusted, annual change in %)	95.8	−13.5	−10.7	−3.0	6.2	17.1
Loan-to-deposit ratio (%)	102.2	162.5	175.4	161.2	137.0	131.8
Liquid assets (% of total assets)	26.8	24.8	25.9	25.7	28.0	27.7
Liquid assets (% of short-term liabilities)	76.8	72.9	92.1	90.5	102.4	101.2
Banks' external assets (% of banks' total assets)	12.2	11.8	16.8	16.7	16.5	14.9
Banks' external liabilities (% of banks' total assets)	20.6	21.3	18.0	16.3	13.4	13.0
Share of short-term external debt (% of banks' total external debt)	39.2	33.0	26.0	21.3	21.7	25.1
Central bank liabilities (% of banks' total assets)	0.3	0.3	13.8	9.0	6.4	3.1
Profitability						
Return on assets (ROA, %)	3.2	3.0	1.7	0.0	0.7	1.7
Retun on equity (ROE, %)	26.0	22.6	13.2	0.3	4.9	10.9
Cost-to-income ratio (%)	×	37.9	38.9	29.0	30.6	35.8
Shock-absorbing factors						
Capital adequacy ratio (%)	14.9	15.5	16.8	18.5	20.9	18.9
Loan loss provisions (% of total loans)	4.1	3.6	4.5	6.9	9.1	9.5
Claims on the central bank (% of banks' total assets)	7.9	7.2	7.2	6.0	6.8	8.0
Memorandum items						
Share of majority foreign-owned banks (% of total assets)	12.1	17.2	18.7	17.6	18.3	17.6
Share of majority state-owned banks (% of total assets)	37.8	39.2	40.6	×	×	×

Source: Bank of Russia, Raiffeisen Research CEE Banking Sector Report 2010, OeNB calculations.

[1] *The private sector comprises households and corporations.*

[2] *Share of problem (IV quality category) and bad (V quality category) loans in total loans. Review of the banking sector of the Russian Federation, table 36.*

[3] *Sum of doubtful, problem and loss loans. Review of the banking sector of the Russian Federation, table 43.*

[4] *Weighted average over all maturities; excluding demand deposits.*

[5] *Weighted average for loans with a maturity of more than one year.*

Thus, the profitability indicators of the Russian banking sector currently stand at about half of the precrisis levels.

Due to capital increases, largely by the state and by foreign parent banks, the capital adequacy ratio increased from 16.8% at end-2008 to 20.9% at end-2009, before declining to 18.9% in mid-2010. Hence, on an aggregate level, the banking sector is well capitalized and disposed of a considerable cushion throughout the crisis period.

Chart 1

Credit Risk and Loan Growth

Nonperforming Loans and Loan Loss Provisions
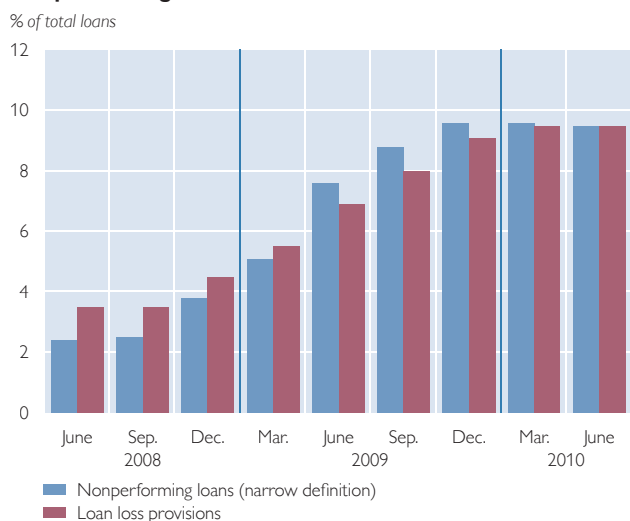
% of total loans

Stock of Domestic Loans to the Private Sector

RUB billion

Nonperforming loans (narrow definition)
Loan loss provisions

Local currency loans to households
Foreign currency loans to households (exchange rate-adjusted)
Local currency loans to corporations
Foreign currency loans to corporations (exchange rate-adjusted)
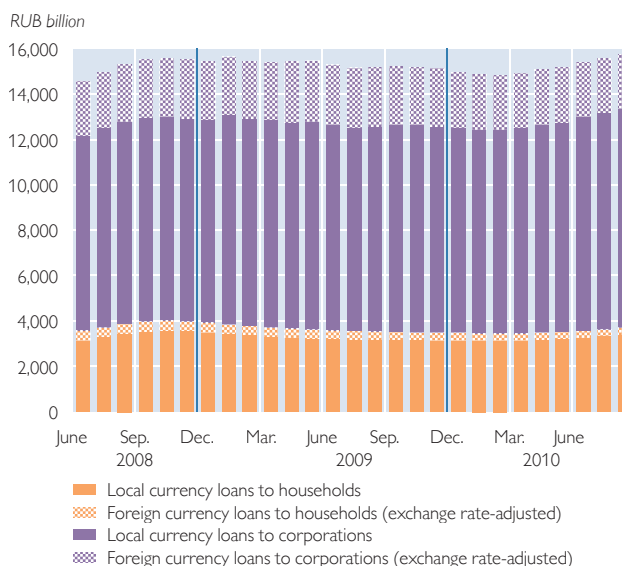
Source: Bank of Russia, OeNB calculations.

Note: Nonperforming loans refer to the share of problem (IV quality category) and bad (V quality category) loans in total loans. Review of the banking sector of the Russian Federation, table 36.

However, there is reportedly considerable variance in the level of problem loans, provisioning and capitalization among individual Russian credit institutions (Standard&Poor's, 2010, p. 5).

Amid rising NPLs and subdued demand for loans given weak macroeconomic conditions, the domestic loan stock (adjusted for exchange rate effects) continued to shrink until February 2010.[7] However, improved liquidity conditions in the banking sector (due to buoyant deposit inflows and better access to foreign funding) as well as the leveling-off of the rise in NPLs and the decline in the creation of provisions set the stage for a revival of lending in early 2010. Moreover, the economic recovery gained momentum, which contributed to containing NPLs and

implied increased demand for loans. Starting from March 2010, the domestic private sector loan stock augmented gradually (see chart 1, right-hand panel). This development was driven by lending to companies as well as households. In both segments, loans were predominantly granted in rubles. The stock of foreign currency-denominated loans to households continued to decline, while some borrowing in foreign currency took place in the corporate sector (but average month-on-month loan growth was lower than for ruble-denominated loans). Still, year-on-year loan growth (in CPI-deflated and exchange rate-adjusted terms) remained negative: in August 2010, it stood at about –3%. It will probably turn positive in the fall of 2010.

---

[7] *In 2009, some temporary increases were caused by lending to companies that was partly supported by government guarantees.*

Austria and Russia Strengthen Supervisory Cooperation[1]

The Austrian Financial Market Authority (FMA) and the Oesterreichische Nationalbank (OeNB) concluded a Memorandum of Understanding (MoU) on supervisory cooperation with the Central Bank of the Russian Federation on October 18, 2010. This MoU is designed to facilitate bilateral cooperation by providing, among other things, for a more explicit regulatory framework for supervisory practice.

The growing financial integration of Austria and the Russian Federation reflects considerable increases in cross-border bank exposure. Among Austrian banks, the Raiffeisen Group and UniCredit/Bank Austria have emerged as the key players in Russia. Austrian banks' overall exposure to Russia totaled EUR 28.5 billion[2] at the end of June 2010 and mainly consisted of retail banking business, with lending to nonbanks accounting for somewhat more than four-fifths of the exposure volume. Conversely, Russia's VTB Bank does substantial business in Austria.

The signing of the MoU represents an important step in strengthening supervisory cooperation across borders, not least given the important role that Russia has come to play in the world financial system as well as the joint responsibilities the FMA and the OeNB have in the supervision of banking groups. In recent years, the FMA and the OeNB have reinforced cooperation with supervisory authorities and central banks across Central, Eastern and South-eastern Europe to enhance supervisory effectiveness.

[1] *Author: Gernot Ebner, Financial Markets Analysis and Surveillance Division, gernot.ebner@oenb.at.*

[2] *According to the BIS, total exposure breaks down into cross-border loans and claims of Austrian banks' subsidiaries in Russia. This figure includes the exposure of UniCredit/Bank Austria, although this banking group is majority-owned by the Italian bank UniCredit.*

4.3 Stabilization of Banking Sector Paves Way for Exit from Crisis Response

As the situation in the Russian banking sector had stabilized, Russian authorities started to withdraw support mechanisms introduced at the height of the crisis (IMF, 2010b, p.12, and Bank of Finland, BOFIT Weekly 39/2010). As already mentioned, the CBR began to exit from extraordinary liquidity support operations as the need for central bank refinancing instruments declined. Lending limits for uncollateralized loans to banks were reduced in February 2010, unsecured lending was stopped almost completely, interbank market guarantees are being unwound, and the CBR intends to tighten eligibility after having expanded the list of eligible collateral for repo transactions during the crisis. Moreover, regulatory forbearance, in the form of easier provisioning requirements, will be gradually brought back in line with precrisis norms. A financial emergency decree introduced in 2009 allows banks that suffer losses in two consecutive quarters to continue to take deposits. Under normal conditions, a bank that posts losses in two consecutive quarters is prohibited from taking further deposits. The decree is valid until the end of 2010. Currently, there is a debate in Russia about whether or not it would be justified to extend the emergency policy into next year.

5 Assessment of Current Banking Risks

5.1 Global Economy, Oil Price and Capital Flows Still Cause for Substantial Uncertainty

The Russian economy's generally positive outlook (the Russian authorities as well as independent experts expect GDP to expand by about 4% to 5% both in 2010 and 2011) is supported by rising

domestic demand. Russia nevertheless remains as dependent as ever on energy and raw material prices and the global economy. Given the world economy's post-crisis fragility and Russia's only weak structural diversification and FDI penetration, the whole economy and the banking sector remain vulnerable to swings in global demand and in investor sentiment on international financial markets.

5.2 Connected Lending, Inadequate Risk Management, Regulatory and Supervisory Shortcomings

Connected or related-party lending is a long-standing deficiency of Russian banking practice. It appears to be partly linked to the modest business climate and the – in view of recurrent crises and turbulent times – relatively large number of credit institutions still in existence. Many medium-sized or smaller banks tend to be strongly dependent on a small number of depositors (creditors) and/or borrowers that may be identical with beneficial owners. Often in the framework of "financial-industrial groups," these "pocket banks" typically function as extended financial departments of owner firms or businessmen. It is in this institutional framework that connected lending, combined with feeble corporate governance and risk management, has remained pervasive. According to CBR estimates, related-party lending (which is often concealed through specific schemes) may account for up to 25%, or in some cases even 50%, of banks' loan portfolios.[8] This is a persistent source of structural weakness, deteriorating credit quality, serious instability

and crisis-triggered defaults (Moody's, 2010, p. 9). Such problems can materialize due to, among other things, regulatory and supervisory shortcomings, including insufficient CBR authority to conduct consolidated supervision. The authorities plan to adjust the pertinent legislation and regulations to curb intragroup lending.

5.3 Still Sizeable NPLs, Insufficient Loan Classification and Provisioning System

While the share of nonperforming loans has stabilized recently, only narrowly defined NPLs (slightly below 10% of total loans) are just barely covered by loan loss provisions. If NPLs are measured according to IFRS, or based on a wider definition, they would account for about one-fifth of total loans, with only about half (or less) covered by loan loss provisions. Accounting rules, loan classification and provisioning are areas where practices continue to be biased toward the formal and largely backward-looking observance of rules in lieu of substantive risk-based and forward-looking procedures (form over substance approach).

5.4 Strong Shock-Absorbing Factors

Russian banks, and even more so the Russian authorities, boast sizeable shock-absorbing factors. Banks' liquidity is satisfactory, as deposits have expanded substantially in the last twelve months (cutting the loan-to-deposit ratio), and depositor confidence remains high. At about one-fifth each, the shares of foreign currency-denominated deposits and loans in total deposits/loans are not very high and thus much lower than

---

[8] *As pointed out by Gennady Melikian, First Deputy Chairman of the Bank of Russia, at the International Banking Congress that took place in St. Petersburg, May 26–29, 2010. According to Melikian, these practices became even more widespread during the crisis.*

in a number of other transition countries.[9] Credit institutions hold sizeable external assets: Following a strong increase in the first half of 2009, external assets are still quite high at about 15% of total banking assets, and exceed external liabilities. Claims on the CBR are also elevated at 8% of total assets. Capital adequacy, as measured, is relatively high.

Although they have already launched the exit from crisis response policies, the authorities could quickly reactivate measures if necessary. The CBR as well as the government maintain considerable room for maneuver: Despite its recent uptick, inflation is still relatively low for Russian standards. The enhanced flexibility of the CBR's exchange rate policy reduces potential policy conflicts. Its heightened volatility notwithstanding, the ruble is currently perceived to be neither substantially overvalued nor undervalued. While the government continues to be saddled with budget deficits, the Russian state's debt remains very low at about 11% of GDP. In addition, gross international reserves continue to be generous (EUR 360 billion in mid-October 2010).

References

Barisitz, S., G. Ebner, M. Lahnsteiner and J. Pann. 2009. Banking and Financial Stability in Russia and the Euro Area amid International Financial Market Turbulences. In: Financial Stability Report 17. OeNB. 123–142.

Bank of Finland. 2009 and 2010. BOFIT Weekly. Various issues.

Bank of Russia. 2009 and 2010. Review of the Banking Sector of the Russian Federation. Various issues.

Ekonomika i Zhizn. 2010. Lishilsya litsenzii odin iz krupneishikh rossiskikh bankov 39. October 8. 5.

IMF. 2010a. IMF Survey Online: Russia: Fragile Recovery from Crisis. August 2.

IMF. 2010b. Russian Federation: 2010 Article IV Consultation – Staff Report. July 2010.

Moody's Investors Service. 2010. Special Comment: Moody's Survey of Russian and CIS Banks' Related-Party Lending. July 15.

Norton, G. 2010. Back to Black: Russian Banks Return to Profit. In: Euromoney. September. 238–241.

Raiffeisen Research. 2010. CEE Banking Sector Report: Gradually Gaining Momentum – and Leaving the Storm Behind. RZB Group. September.

Standard&Poor's. 2010. The Heat on Russian Banks Is Lessening Somewhat as Loan Losses Stop Growing – But Sparks May Still Fly. May 18.

[9] *Moreover, foreign currency-denominated deposits of the private sector have sharply declined from the height of the crisis (end-March 2009: 33% of total deposits, mid-2010: 22%).*

The Economic Impact of Measures Aimed at Strengthening Bank Resilience – Estimates for Austria

Emanuel Kopp,
Christian Ragacs,
Stefan W. Schmitz[1]

This paper proposes a conceptual framework for analyzing the effects that proposals to strengthen the resilience of the banking sector may have on the Austrian economy. We use this framework to quantify the macroeconomic costs of the following regulatory reform measures: Requiring banks to raise the quality of the regulatory capital base, with or without requiring them to hold additional common equity buffers; introducing a global liquidity standard based on a net stable funding ratio; implementing a contingent capital regime to address the risks created by systemically important banks; abolishing implicit government guarantees for senior bank bonds; and reforming EU rules on deposit guarantee schemes. We estimate the macroeconomic costs for different scenarios on a cumulative three-year basis, comparing medium- and long-term effects on the one hand and direct effects (generated in the domestic economy) and indirect effects (including spillover effects from other euro area countries) on the other hand. The results differ significantly depending on the individual measures, but the macroeconomic costs appear to be within reasonable limits and are comparable with those established for other countries by the Basel Committee on Banking Supervision. In any case, the costs are substantially below the results published by individual banks and interest groups.

1 Basel III and Economic Growth

In 2010 the Basel Committee on Banking Supervision (BCBS) proposed a set of measures, known as Basel III, to tighten the existing capital and liquidity standards for banks, among which the capital proposals (BCBS, 2009, 2010b and 2010d) have, no doubt, captured most of the limelight. While acknowledging the objective of the reforms – which is to strengthen the resilience of the financial system – the ensuing economic policy debate has also highlighted the fact that the reforms are going to raise costs for banks and may therefore dampen GDP growth. In other words, there is a case of conflicting economic policy objectives.

However, for those negative growth effects to materialize and to have a size-able impact, a number of conditions must be met according to economic theory: Banks must be undercapitalized by minimum regulatory standards and they must be subject to equity constraints or find it so expensive to raise new equity that the cost of lending becomes a function of the regulatory measures among other things. Furthermore, the dependence of the real economy on bank loans must be significant (Francis and Osborne, 2009, p. 3).[2] Finally, banks must not be in a position to absorb rising funding costs simply by lowering their economic profit or cutting the underlying costs. At any rate, there is more than one link between regulatory patterns and growth dynamics; the size of the growth effect – which may vary considerably from

Refereed by
Mathias Drehmann,
BIS

---

country to country or from case to case – depends on the elasticity of credit supply and demand, and on the elasticity of supply- and demand-dependent macroeconomic variables like consumption and investment. Ultimately, determining the size of the growth effect is thus an empirical issue.

The macroeconomic impact of the Basel III proposals has been simulated by dozens of recent studies. Typically, international institutions and central banks have found these negative growth effects to be comparatively low, whereas banks or their lobbying institutions have found those effects to be comparatively high.[3]

In this respect, we consider the Macroeconomic Assessment Group – which was established by the Financial Stability Board and the BSCB and which brings together the macroeconomic expertise of numerous central banks, regulatory agencies and international institutions[4] – to have contributed a particularly relevant meta study on the impact of Basel III (MAG, 2010). Taking the median across all the results obtained (in 89 papers), the MAG estimates a 1-percentage-point increase in the target capital ratio to lead to a decline in the level of GDP by 0.16% (which masks a range of 0.07% to 0.31%, excluding outliers) after 18 quarters given an implementation horizon of four years. Subject to international spillover effects, the GDP level would drop by another 0.03% in the four-year implementation case. Moreover, the consensus is that a longer transition or implementation horizon cushions the negative macroeconomic impact of strengthening the regulatory environment. Following up on the MAG's work, the BCBS (2010a) examined the long-term (steady state) effects of stronger capital and liquidity requirements. In its meta study, a 1-percentage-point increase in the capital ratio maps into a median decline of 0.09% in the level of GDP, while additional funding required to meet the liquidity standards of Basel III was found to decrease the GDP level by another 0.08%.

The Bank of England (2010) and Barrell et al. (2009) arrive at similarly low effects, with the former finding a 6-percentage-point increase in the capital ratio to trigger a 0.6% decline of the GDP level in the long term, and the latter showing a 1-percentage-point rise in the capital ratio to reduce output by 0.08% in the long run.

In contrast, the results published by the Féderation Bancaire Française (FBF, 2010), the Institute of International Finance (IIF, 2010a) and La Caixa (2010) are markedly more pessimistic. La Caixa estimates the GDP level to contract by as much as 5% (in its most probable scenario) in the long term, the FBF arrives at a drop of 6%, and the IIF expects the decline to lie within a range of 2.6 (United States up to 2015) and 4.4% (euro area up to 2020). With regard to the IIF's figures it should be noted that these results also reflect the introduction of bank taxes, and that the costs of the redefined capital requirements were subsequently revised downward by approximately 30% in an update of the study (IIF, 2010b). This means that the impact on the GDP level would also be lower; by how much the effects would be lower has not been specified, however.

With regard to the impact on Austrian banks, two institutions have published figures so far: the Institute for

---

[3] For an overview see table A-1 in the annex.

[4] See table A-1 in the annex for a list of participating institutions.

Advanced Studies (IHS, 2010) and Bank Austria (2010). Bank Austria (2010) focused on repercussions for bank profits, funding costs and specifically bank lending spreads, rather than calculating direct growth effects. In its best-case scenario, Bank Austria expects Basel III to lower bank profitability; in its worst-case scenario it expects the banking sector to incur losses: Lending spreads are estimated to go up by between 0.06 and 0.14 percentage points for business loans, and by between 0.13 and 0.30 percentage points for consumer loans. The IHS projections imply that the Austrian GDP level stands to contract significantly compared with the findings of international studies. On the assumption that the loan volume will shrink by 10% (20%), the GDP level is projected to go down by 1.26% (2.49%) over a five-year horizon, and by 2.83% (5.66%) over a ten-year horizon. However, based on the information at hand (the full paper is not publicly available) this calculation would not appear to be conclusive; the scenario based on a 20% reduction of the loan volume even includes repayment of the state's participation capital, which causes the estimated contraction of risk-weighted assets to triple. Unlike all other studies, the IHS estimates are based entirely on a quantity adjustment of risk-based assets,[5] the key assumption being that, in the five years following Basel III implementation, banks will be unable to increase capital ratios either by retaining earnings or by issuing equity. In combination with the assumption that nonfinancial corporations do not have access to alternative financing sources, this scenario yields very high growth losses in the long run. In sum, Bank Austria did not look into

growth effects, and the IHS relied on assumptions that do not facilitate meaningful international comparisons and singled out capital requirements from the wide range of measures proposed to improve the resilience of the banking system.

The study we have undertaken closes this gap and analyzes the negative growth effects that the various measures to strengthen bank resilience may have on the Austrian economy. The most prominent (and the most cost-intensive) proposals are the measures aimed at tightening the capital standards. In our long-term three-year scenario, we find the requirement to raise the quality of core tier 1 capital together with the need to hold additional capital buffers (which we assume, for the sake of illustration, to push the common equity tier 1 ratio 1 percentage point above the future regulatory minimum and above current buffer levels) to map into a cumulative 0.26% decline in GDP growth (including spillover effects from other euro area countries on GDP in Austria). In other words, our results are comparable with those of the BCBS.

This paper is organized as follows: Section 2 describes the conceptual framework of our analysis and the underlying methods. Based on this framework, we quantify the impact that the changes to the regulatory framework for banks are likely to have on the Austrian economy (section 3). Specifically, we analyze the macroeconomic costs of six different proposals: (1) requiring banks to raise the quality of tier 1 capital (which includes the requirement to build up capital conservation buffers); (2) requiring banks to raise the quality of equity capital and to hold additional

---

[5] *This assumption does not exclude an endogenous increase of loan rates.*

buffers on top of the capital conservation buffers (which we assume, for purely illustrative reasons, to be equivalent to a 1-percentage-point increase in the common equity tier 1 ratio); (3) introducing a global liquidity standard based on a net stable funding ratio; (4) implementing a contingent capital regime to address the risks created by systemically relevant banks; (5) abolishing implicit government guarantees for senior bank bonds; and (6) reforming EU rules on deposit guarantee schemes. Four of those measures are linked directly or indirectly with Basel III and corresponding drafts of EU legislation. On the issue of deposit guarantee schemes, the European Commission (2010b) has submitted a proposal. Implicit government guarantees might be abolished, for instance, through the implementation of a bank resolution regime, but on this point the EU proposal is yet to be drafted. We have covered this point nonetheless, as it plays a prominent role in the debate on the future regulatory framework.[6] Section 4 provides a summary of the key results, compares the results with the findings of other studies and also discusses potential sources of over- or underestimation of the growth impact.

2 Conceptual Framework of Analysis

Unless adjusted, traditional macro models which have been designed to simulate the effect of economic policy measures and to make macroeconomic projections are typically not able to capture the macroeconomic effects of regulatory measures directly, as most of these models have not been devel-

oped further to include (sophisticated) financial market frameworks. Against this backdrop, different papers have used different analytical approaches. Some economists have developed special macro models which serve to analyze the issues at hand directly. Given the complexity of such models, others have opted for reduced-form models. A third variant is to first use partial-equilibrium models to establish the direct effects that regulatory measures have on the loan market (e.g. on the supply of loans and on loan rates) and to subsequently incorporate the partial-equilibrium model results (e.g. bank lending spreads) as exogenous variables into dynamic stochastic equilibrium models or structural macroeconomic models to work out the overall macroeconomic impact.

In this study, we have opted to proceed along the lines of the third approach, which is also the approach on which the core MAG (2010) results are based: We use three steps to simulate the macroeconomic impact of the different regulatory measures: First, we estimate the absolute costs that the respective measures entail for the Austrian banking sector per year. Second, we convert these costs into a corresponding increase of loan rates based on a number of underlying assumptions. Third, we simulate the macroeconomic effects of rising lending spreads using the OeNB's quarterly macroeconomic model,[7] with due regard to spillover effects from other euro area countries.

Our analysis is based on the assumption that the measures will be implemented over a three-year horizon

---

[6] *The scope of this paper is limited to the six regulatory measures listed here. We do not address the issue of a non-risk-based leverage ratio or that of a systemic risk surcharge, as the specification and calibration of those two measures were too vague when this article went to press to permit meaningful analysis.*

[7] *The documentation on the "Austrian Quarterly Model" is publicly available (Schneider and Leibrecht, 2006).*

and under the current economic conditions. The numerous unknown variables in the analysis have been a challenge in parametrizing the model. This is why the results should not be read as projections but rather as *tentative estimates of how the macroeconomic costs of the individual measures relate to each other.* Last but not least, our analysis is limited to quantifying the macroeconomic costs of the proposed measures; these costs need to be seen in relation to the substantial costs of banking crises.[8]

2.1 Absolute Costs of Individual Regulatory Measures

To design a consistent conceptual framework for assessing the above-named measures, we translate all regulatory proposals into annual flows, i.e. into annual averages of the additional costs that the Austrian banking sector would have to bear. As identification and data problems do not allow us to estimate reliable demand and supply functions of the various bank products, we work with the following two scenarios: In a medium-term scenario[9] we assume that banks implement each measure step by step over a three-year horizon (with the exception of deposit guarantee schemes, which would need to be implemented without delay once the respective EU directive has been transposed into national law). Consequently, any additional costs per year can be passed through only to the aver-

age amount of new loans that banks extend during those three years. In a long-term scenario we start from the assumption that banks have implemented the measures in full and are able to reprice their entire loan portfolio.

2.2 Mapping Absolute Costs of Regulatory Measures into Higher Lending Spreads

The incidence of additional costs is dependent on a number of factors: the capital and liquidity intensity of bank products, the relative elasticity of supply and demand of those products, and banks' pricing power (see e.g. Hartmann-Wendels et al., 2007, p. 685ff.). The regulatory measures discussed here affect both the banking sector's equity capital and its debt capital. While the cost of refinancing debt feeds into internal fund transfer prices (CEBS, 2010) and is not a direct function of return on equity (ROE),[10] the cost of raising equity is directly dependent on ROE targets;[11] therefore, we estimate different scenarios with different ROE targets.

2.2.1. Debt Funding

Our analysis is based on an extended market rate model of product pricing as used in banking management (Hartmann-Wendels et al., 2007, p. 709 ff.). We estimate the additional funding costs banks would face each year based on the spread between the refinancing

---

[8] On this point, see the extensive literature survey in annex 1 to BCBS (2010a) or Laeven and Valencia (2010).

[9] Our definitions of medium- and long-term scenarios differ from the common macroeconomic distinction between medium-term analyses (of business cycles) and long-term (equilibrium growth) analyses.

[10] In the case of debt funding, we calculate funding spreads and the impact on internal fund transfer prices, and we assume that the marginal debt raised does not feed back into ROE. Button et al. (2010) provide empirical evidence for the U.K. showing that lending costs rose even more sharply than internal transfer prices during the crisis. This can be explained by a back book effect: refinancing the existing loan portfolio becomes more expensive, but it is often impossible to price these higher costs into interest rates ex post.

[11] The targeted ROE has a direct impact on the bank's costs, as it determines the target interest rate for equity.

Chart 1

Spreads between Euro-Denominated Corporate and Household Loans and Deposits

Percentage points
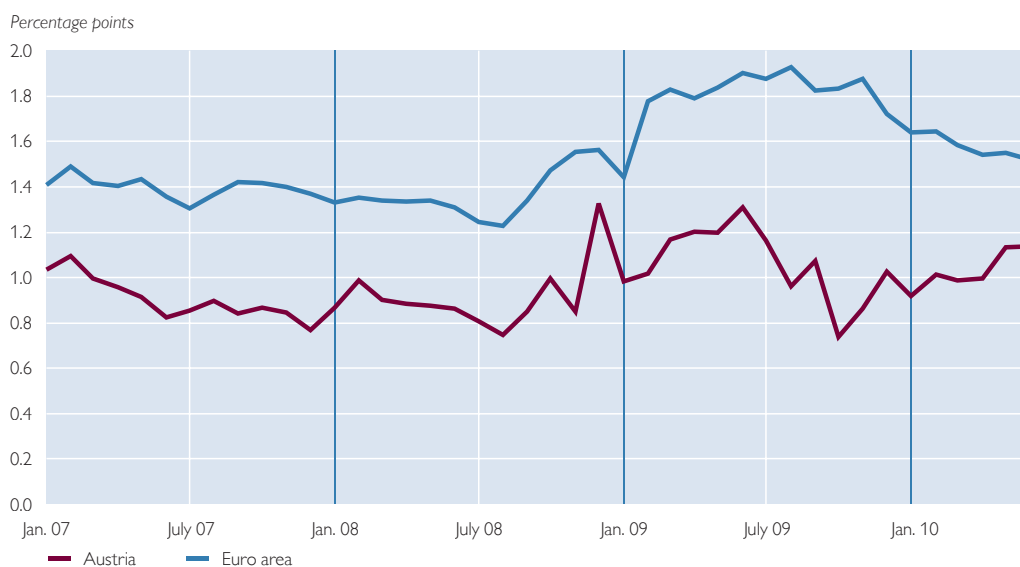
Source: OeNB, ECB.

instruments which the new regulatory framework would prescribe and those that they replace.

Banks have pricing power for just a few – if any – balance sheet positions. In the case of trading book and inter-bank transactions, with regard to liquid assets, own debt issues and participating interests and so on, banks are price takers in the money and debt capital markets. The area in which they have pricing power and may try to price additional costs into their products is, essentially, the deposit and loan business. However, loans are capital-intensive and highly liquidity-intensive products, which means that capital and liquidity costs need to be reflected adequately in loan pricing in line with competitive product pricing. Moreover, competition for deposits has risen considerably recently as a result of the BCBS liquidity rules and the recent liquidity crisis. Last but not last, interest rate margins are already very low in Austria (see

chart 1). This is why our scenarios are based on the assumption that banks will attempt to recoup any additional costs by charging correspondingly higher lending rates. Assuming constant loan-based income streams, the spread by which lending rates need to rise depends, ceteris paribus, on how big the amount of new loans is to which the additional costs can be passed through.

To be able to estimate average outstanding loan volumes for the medium-term and the long-term scenarios, we need to combine different data sources, as maturity data and data on new lending are available only on an unconsolidated basis. At the end of 2009, the loan portfolio of Austrian banks totaled EUR 415 billion on an unconsolidated basis. Naturally, banks are not in a position to reprice their entire portfolio at any one point. The volume of loans that banks can reprice in our medium-term scenario consists of any new loans they

extend during that period: short-term loans (with a maturity of up to 1 year), loans with a maturity of more than 1 year and up to 5 years (which we assume to have an average maturity of 3 years) and loans with a maturity of more than 5 years (which we assume to have an average maturity of 12.5 years). In other words, the average outstanding loan portfolio to be repriced over the three-year horizon equals approximately EUR 170 billion p.a. In the long-term scenario we assume banks to be able to reprice the entire loan portfolio of EUR 415 billion. Another aspect to be considered is that an analysis of equity funding makes sense only on a consolidated basis. For this purpose, we use the consolidated reports filed by banking groups (based on IFRS and Commercial Code rules) and adjust the loan volume that may be repriced with an adjustment factor of 1.22. This adjustment factor results from the relation between the lending data reflected in the financial accounts and the data reported by the respective banking groups. Here we need to make the additional assumption that lending volumes, average maturities and pricing powers are the same in all submarkets. In this context, the higher credit spreads demanded in Central, Eastern and Southeastern European countries may partially offset the higher competition pressures prevailing in Austria. Eventually, we thus work on the assumption that the average loan repricing volume is approximately EUR 200 billion in the medium-term scenario and approximately EUR 500 billion in the long-term scenario.

While the additional costs of raising debt feed into product pricing through the internal fund transfer price, model-ing the additional costs of raising equity is more complex and therefore described separately below.

2.2.2 Equity Funding

To quantify the impact of higher capital ratios on bank lending spreads, we adapt and generalize a loan pricing equation proposed by Elliott (2009). We start from the presumption that a loan should be made only if it provides sufficient return to cover the underlying costs. Expressed in an equation, this specification reads

$$r_{Loan} * (1 - tax) \geq equity * roe +$$

$$+ (1 - tax) * ((1 - equity) * r_{Debt} +$$

$$+ risk + adm),$$

where r_{Loan} = the interest rate on the loan, *equity* = the proportion of equity backing the loan, *roe* = the marginal return on equity, *tax* = the tax rate, r_{Debt} = the interest rate on debt (including deposits) funding the loan, *risk* = the risk premium (such as the credit spread) und *adm* = administrative and other expenses related to the loan. In formulating their irrelevance theorem, Modigliani and Miller (1958) assumed that the tax treatment of debt and equity was equivalent. Yet in practice, debt is tax-deductible while equity payments are not. This is why we include taxes only in the specification for debt.[12] When banks fund a loan with a higher proportion of equity, the share of debt (*1 – equity*) goes down mutatis mutandis. Typically, equity-based funding is more expensive for banks than debt funding, among other things because debt is subsidized by implicit government guarantees and by favorable tax treatment.

---

[12] *Factors determining the share of capital in the capital mix include information asymmetries, conflicts of interest among managers, equity investors and debt investors, and rating agency constraints.*

The decision of whether to reduce the leverage ratio by increasing the proportion of equity funding boils down to the question of whether this would increase the (average) capital costs of banks – and thus decrease their market value, which would go against the interests of equity investors. At the same time, banks are able to decrease the risk per unit of equity capital by substituting equity for debt funding, as a result of which equity capital costs go down (see Hartmann-Wendels, 2002, p. 536). The capital structure irrelevance theorem of Modigliani and Miller (1958) states that the two aforementioned effects will offset each other under optimal market conditions (absence of frictions and capital market imperfections), and that a company's average capital costs will ultimately not be affected by its sources of funding. Moving beyond the world of theory, the capital structure irrelevance theorem does not hold in imperfect markets: If, say, a bank is unable to raise additional equity in the market (as is the case in particular for the decentralized sectors of the banking system), its only options (ceteris paribus) are indeed to either lend less or to make less risky loans in order to reduce the volume of risk-weighted assets, or to charge higher default risk premiums, i.e. to raise lending rates. Thus, increases in the capital requirements would appear to be problematic above all for those banks which are unable to raise new equity in the market because of market access constraints (and hence imperfect capital markets). These banks will either have to curb (risky) lending (which is equivalent to credit rationing) or raise risk premiums.

While our simulations are based on the assumption that capital requirements affect neither debt funding costs, taxes, risk premiums nor administrative costs, we need to take into account that banks will be able to pass rising funding rates onto customers to different extents; therefore we quantify the effects that different capital ratios may have for different ROE levels and for different loan repricing volumes. The smaller the extent to which banks may pass through higher costs to their customers, the larger the impact of costs on their returns will be (given constant cost-income ratios). This is why we conduct our simulations with ROE levels of 10%, 15%, 20% and 25%, respectively. We consider the lower limit for the medium- and long-term ROE to lie at 10%, because the capital costs of Austrian banks currently exceed 10% so that they should find recapitalization at ROE target rates below 10% difficult.[13] Our other assumptions are as follows: Taxes (tax) = 30%, interest rate on debt (r_{Debt}) = 5%, risk premium ($risk$) = 3%, and administrative costs (adm) = 1.5%. We did not simulate any instances of rationing in the capital market, as Austria's banks managed to increase their tier 1 capital by some EUR 12 billion (excluding government participation capital and extra-ordinary effects) despite interim losses even under the highly adverse market conditions prevailing in the period from Q2 07 to Q2 10.

2.3 Macroeconomic Simulations

In the following simulations, we take the higher lending spreads that we established for the measures discussed here as the starting point for quantify-

---

[13] At the same time, Basel III might cause capital costs to decrease in the long term. The ROE averaged 12.2% for a broad sample of banks during the period from 1995 to 2009 (BIS, 2010).

ing the effects that they are likely to have on the Austrian economy (GDP, private consumption, gross fixed capital formation and HICP inflation). To simulate the direct effects of these scenarios on the Austrian economy (changes in long-term interest rates), we use the OeNB's macroeconomic Austrian quarterly model (AQM). In the AQM, higher interest rates work through a number of channels, with varying effects: Above all, higher interest rates drive up the real user costs of capital and as such have a particularly strong impact on corporate investment demand. In addition, but to a much smaller extent, higher interest rates also dampen private consumption, as they cause the saving ratio to increase and net household income to decrease (through a decline in employment). Moreover, higher interest rates also work through the exchange rate channel, as they cause the domestic currency to appreciate against other currencies and thus cause exports to decline. In the case of Austria as a small open economy, the impact on the price level will be limited.

As the implementation of the proposals to amend the regulatory requirements will not be limited to Austria, we are also taking into account the real economic effects that those measures are going to have on the other euro area countries. We do so by integrating projection update elasticities, as provided by the Eurosystem NCBs. These projection update elasticities reflect the elasticity of key economic variables (HICP, GDP, etc.) with regard to interest rates, oil prices, exchange rates, etc. This step serves to explicitly catch any spillover effects between the euro area countries that arise from changes in import demand and trade prices. To simplify this exercise, we assume that the proposed measures are going to

drive up lending spreads by the same amount in all euro area countries.

The simulations were run for two different scenarios (a medium-term and a short-term scenario), which differ with regard to the implementation horizon of the proposed measures and with regard to banks' loan repricing volumes but not with regard to the simulation horizon (three years each). We assume the shocks that we analyzed to be of a permanent nature. In the medium-term scenario, we assume lending rates to be adjusted gradually at quarterly intervals in the first year. In other words, the new target interest rate will not be reached until the fourth quarter of the first year. All simulation results reflect the cumulative baseline deviation of the growth rates in percentage points or the baseline deviation of the GDP level in percent after a period of three years. *The simulation results are broadly linear, i.e. they can be scaled accordingly for different lending spreads.*

3 Macroeconomic Costs of Different Regulatory Measures

3.1 Requiring Banks to Raise the Quality of Capital

The proposal to require banks to raise the quality of capital (and hold capital conservation buffers) is the most prominent and also the most cost-intensive of all proposed measures.

Minimum capital requirements stipulate that (groups of) credit institutions need to hold certain amounts of capital to cushion the risks of their assets. The key rationale for these capital cushions is the need to ensure that banks are adequately capitalized and remain solvent even if unexpected losses materialize. Austrian credit institutions are obligated to hold eligible capital for their business operation risks (credit risks, market risks, operational

risks) at all times in line with the minimum capital requirements specified in Article 22 of the Banking Act. Which forms of capital are deemed eligible in this respect, has been laid down in Article 23 of the Banking Act. As a rule, different types of capital are eligible to different extents. The regulatory framework known as Basel II differentiates between three "tiers" of capital: core capital (tier 1), supplementary capital (tier 2) and subordinated debt (tier 3). The respective minimum capital requirements are expressed as capital ratios, i.e. as the levels of capital that banks must hold relative to their risks. Ever since Basel I, capital ratios have related to banks' risk-weighted assets rather than to their total assets, the idea being that in line with different risk profiles, different buffers will be adequate for different positions. Hence, the absolute amounts of capital banks are required to hold depend above all on the risks they incur and, thus, on the size of their risk-weighted assets. Banks' capital adequacy ratios thus reflect the amount of eligible capital they hold relative to risk-weighted assets.

Another key indicator of a bank's shock-absorbing capacity, alongside the capital adequacy ratio, is the tier 1 ratio. This indicator has become increasingly significant since the financial crisis that emerged in 2007. Unlike the capital adequacy ratio, the tier 1 ratio reflects only capital of the highest quality that banks may use to absorb losses right as they incur. The latest banking and financial crisis has evidenced the need to improve the quality of tier 1 capital, as under the existing Basel II framework credit institutions have been classifying capital items under tier 1 capital that are not necessarily loss-absorbing in the event of adverse developments.

The proposals for a new regulatory regime, dubbed Basel III, which are to be implemented in the EU through amendments to the Capital Requirements Directive (CRD IV), have been designed to simplify the capital structure and to raise the quality of capital (European Commission, 2010a). Under Basel II, banks have in essence been required to achieve a capital adequacy ratio of at least 8% of risk-weighted assets and a tier 1 ratio of at least 4% of risk-weighted assets.

The way things stand at the time of writing, Basel III is shifting the focus from tier 1 capital toward "common equity tier 1 capital" by imposing the constraint that the predominant form of capital must be common shares and retained earnings. Moreover, deductions from capital of intangible assets or stakes in insurance companies and the like will henceforth need to be made, as a rule, from common equity tier 1 capital rather than from the overall level of tier 1. Last but not least, minority interests and hybrid forms of capital will cease to be eligible for inclusion in tier 1 capital under the Basel III proposals published in December 2009 (BCBS, 2009), which should also be instrumental in improving the quality of tier 1 significantly. That said, the latest proposals (BCBS, 2010c and 2010d) have become somewhat more lenient on this point. In the future, only core capital (tier 1) and supplementary capital (tier 2) will be deemed eligible by the regulatory agencies. In other words, tier 3 will be abolished, so that the capital used to meet market risk requirements must be of a higher quality. To be included in tier 1, instruments will, as a rule, need to be sufficiently loss-absorbent on a going-concern basis.

In the context of this study, we have assessed how the new definition of tier 1 capital affects the aggregate capital

ratios of the Austrian banking system.[14] We used banks' reporting data and essentially adjusted them in line with the new regulatory provisions. We thus found the Austrian banking sector to need to raise EUR 8.9 billion to be able to meet the required common equity tier 1 levels (including capital conservation buffers).

The macroeconomic effects of several regulatory requirements are estimated based on the assumption that credit institutions are going to meet the new standards solely by raising additional equity (rather than, for instance, reducing their risk-weighted assets by shifting to less risky portfolios, or, closely related, by transferring risks and thus reducing the risks on their balance sheets). Note that our estimates of the effects that Basel III is likely to have in terms of raising the quality of equity capital explicitly refer to the latest proposals of the BCBS (2010d) dated September 12, 2010. Moreover, our figures include a (common equity tier 1) capital conservation buffer in the range of 62.5 to 250 basis points.[15] Furthermore, we also assume that Austrian banks will *retain the option of deducting participating interests in the central institution of their sector,* as laid down in Article 23 paragraph 13 item 6 Banking Act. This derogation is meant to create a level playing field for the decentralized sectors of the Austrian banking system vis-à-vis the incorporated banks and is a specialty of the Austrian banking sector. At the time of writing, this derogation is subject to an intensive debate, the outcome of which is still unclear. We have opted to as-

Table 1

Medium-Term Growth Impact of Higher Quality of Core Tier 1 Capital (Introduction of Common Equity Tier 1 Capital)

		ROE 10%	ROE 15%	ROE 20%	ROE 25%
	Costs (EUR million p.a.)	386	682	979	1.276
	Lending spread (change in basis points)	19	34	49	64
Direct growth impact over 3 years[1]	GDP	−0.11	−0.19	−0.27	−0.35
	Gross fixed capital formation	−0.34	−0.59	−0.85	−1.11
	Private consumption	−0.15	−0.27	−0.39	−0.51
	HICP	−0.04	−0.07	−0.09	−0.12
Direct and indirect growth impact over 3 years[1]	GDP	−0.15	−0.26	−0.37	−0.48
	Gross fixed capital formation	−0.39	−0.69	−0.99	−1.29
	Private consumption	−0.17	−0.31	−0.44	−0.57
	HICP	−0.05	−0.08	−0.12	−0.16

Source: Simulations based on the OeNB's AQM (direct effects) and on Eurosystem NCBs' projection update elasticities (indirect effects), Eurostat.

[1] Cumulative deviation of simulated growth rates from baseline in percentage points.

Note: Medium-term: Pass-through of increased spreads to new loans and step-wise adjustment to new regulations.
      Long-term: Pass-through of increased costs to entire loan portfolio and full adjustment to new regulations.

[14] *As defined by the European Commission (2010a) and BCBS (2009, 2010d). The following estimates give an indication of the banking system's recapitalization needs following implementation of Basel III for the purpose of our study, i.e. for analyzing the macroeconomic effects of Basel III. However, those figures must not be seen as a supervisory interpretation of Basel III.*

[15] *In contrast, we have not explicitly integrated countercyclical buffers (ranging from 0 to 2.5 percentage points of common equity tier 1 capital) as those measures have not yet been specified in sufficient detail and are ultimately going to be implemented according to national circumstances. What we have simulated is the effect of creating an additional buffer by increasing the level of common equity tier 1 (by 1 percentage point, for the sake of illustration); see section 3.2.*

Table 2

Long-Term Growth Impact of Higher Quality of Core Tier 1 Capital (Introduction of Common Equity Tier 1 Capital)

		ROE 10%	ROE 15%	ROE 20%	ROE 25%
	Costs (EUR million p.a.)	579	1,024	1,469	1,914
	Lending spread (change in basis points)	12	21	29	38
Direct growth impact over 3 years[1]	GDP	−0.07	−0.12	−0.17	−0.23
	Gross fixed capital formation	−0.22	−0.40	−0.57	−0.74
	Private consumption	−0.10	−0.18	−0.26	−0.34
	HICP	−0.03	−0.06	−0.08	−0.10
Direct and indirect growth impact over 3 years[1]	GDP	−0.09	−0.16	−0.23	−0.30
	Gross fixed capital formation	−0.26	−0.45	−0.65	−0.85
	Private consumption	−0.12	−0.20	−0.29	−0.38
	HICP	−0.04	−0.07	−0.10	−0.12

Source: Simulations based on the OeNB's AQM (direct effects) and on Eurosystem NCBs' projection update elasticities (indirect effects), Eurostat.

[1] *Cumulative deviation of simulated growth rates from baseline in percentage points.*

Note: Medium-term: Pass-through of increased spreads to new loans and step-wise adjustment to new regulations.
Long-term: Pass-through of increased costs to entire loan portfolio and full adjustment to new regulations.

sume that this clause will be retained but, to give a full picture, we have detailed the changes that would result should this derogation be abolished. To complete the picture, we have also quantified the Austrian banking system's total *capital adequacy requirements* (tier 1 and tier 2 under the Basel III framework) and assessed the corresponding impact on the Austrian economy (rather than limiting our assessment to the common equity tier 1 ratio, which is likely to be the central and most prominent capital ratio of the future).

In the medium-term scenario, we single out a low ROE of 10% as our main scenario, given that banks are likely to continue to feel the repercussions of the crisis and will most likely not be in a position to pass through the entire cost of the new regulatory framework to their clients in the simulation horizon. Here we find the cumulative three-year macroeconomic effect to be such that GDP growth declines by 0.11 percentage points (see table 1). This decline in the headline figure masks a more pronounced reduction (−0.34

percentage points) in growth of gross fixed capital formation. The impact on the HICP inflation rate appears to be limited.

As the capital proposals are meant to be implemented throughout the EU, we also need to take into account the indirect effects, which bring the total decline in GDP growth (including direct effects) to 0.15 percentage points. This wider perspective also implies a somewhat stronger overall decline in the growth rate of gross fixed capital formation (−0.39 percentage points). In comparison, a ROE of 15% rather than 10% would substantially reinforce the direct effects (decline in output growth by 0.19 percentage points) and also the combined direct and indirect effect (decline in output growth by 0.26 percentage points). A further increase of ROE to 25% would, according to our model calculations, cause GDP growth to contract by a total of 0.48 percentage points (reflecting both direct and indirect effects).

In the long-term scenario we wish to highlight the results based on a ROE of 15%, which in the long term seems

to be most closely aligned with past experience (see table 2). Here, the direct effects as simulated by the model would add up to a cumulative decline in GDP growth of 0.12 percentage points, and of 0.40 percentage points in gross fixed capital formation. Given EU-wide implementation, we also include EU spillovers and thus arrive at an overall decline of 0.16 percentage points for GDP growth and of 0.45 percentage points for gross fixed capital formation.[16] The comparative calculations with higher levels of ROE again show the size of the direct and indirect effects to depend substantially on the ROE levels.

If the derogation under Article 23 paragraph 13 item 6 Banking Act cannot be retained, funding costs are estimated to rise by as much as EUR 520 million in the medium-term scenario and by as much as EUR 1.4 billion in the long-term scenario (reflecting both direct and indirect effects). Those

figures map into a total rise in lending spreads by 26 (28) basis points and into a total contraction of GDP growth by 0.20 (0.22) percentage points.

When we compare the results of the medium-term and the long-term scenario, we find the macroeconomic effects to be stronger for the same ROE levels over the medium term. While the absolute costs are indeed higher in the long term for the same ROE levels, these costs can be spread over a markedly larger volume of loans that can be repriced, so that the lending spreads are in fact lower in the long term. Thus, the sooner banks start implementing the measures, the longer are the transition horizons at which they can aim. This increases the volume of loans that come up for repricing, and this decreases the lending spreads required to finance the higher costs, as a result of which the macroeconomic costs are lower ceteris paribus.

Table 3

Combined Medium-Term Growth Impact of Higher Quality of Core Tier 1 Capital and Additional Buffers (+1 pp of Common Equity Tier 1 Capital)

		ROE 10%	ROE 15%	ROE 20%	ROE 25%
	Costs (EUR million p.a.)	752	1,232	1,712	2,192
	Lending spread (change in basis points)	31	62	86	110
Direct growth impact over 3 years[1]	GDP	−0.17	−0.34	−0.47	−0.61
	Gross fixed capital formation	−0.54	−1.07	−1.49	−1.91
	Private consumption	−0.25	−0.49	−0.68	−0.87
	HICP	−0.06	−0.12	−0.16	−0.21
Direct and indirect growth impact over 3 years[1]	GDP	−0.23	−0.46	−0.64	−0.82
	Gross fixed capital formation	−0.63	−1.25	−1.73	−2.22
	Private consumption	−0.28	−0.55	−0.77	−0.98
	HICP	−0.08	−0.15	−0.21	−0.27

Source: Simulations based on the OeNB's AQM (direct effects) and on Eurosystem NCBs' projection update elasticities (indirect effects), Eurostat.

[1] Cumulative deviation of simulated growth rates from baseline in percentage points.

Note: Medium-term: Pass-through of increased spreads to new loans and step-wise adjustment to new regulations.
Long-term: Pass-through of increased costs to entire loan portfolio and full adjustment to new regulations.

[16] Overall, the capital adequacy costs (tier 1 plus tier 2) total EUR 641 million per annum in the medium-term scenario and EUR 1.7 billion per annum in the long-term scenario, which raises lending spreads by 32 (34) basis points and causes GDP growth to go down by 0.24 (0.27) percentage points (reflecting both direct and indirect effects). If the derogation under Article 23 paragraph 13 item 6 Banking Act cannot be retained, total capital adequacy costs would rise by as much as EUR 793 million (EUR 2.1 billion), which means that lending spreads would rise by 40 (42) basis points and GDP growth would go down by 0.30 (0.33) percentage points.

3.2 Requiring Banks to Raise the Quality of Capital and to Hold Additional Buffers

Apart from requiring banks to build up capital conservation buffers over the regulatory capital minimum that will help them to better absorb losses in periods of financial or economic stress, the BCBS would also require banks to add on countercyclical buffers ranging from 0 to 2.5 percentage points of common equity tier 1 capital. Irrespective of the buffers designed by the BCBS, the markets (or investors) might well be critical of credit institutions which do not exceed the regulatory minimum (by much) and hence force them to do better than the regulatory minimum. In this section we look into the effects that additional buffers other than capital conservation buffers are likely to have on lending spreads and the economy. By way of illustration, we quantify the combined effects of increasing the quality of capital (as outlined in section 3.1) and of creating an additional buffer equivalent to a 1-percentage-point increase in the common equity tier 1 ratio.

In the medium-term estimates, our main scenario is again based on a ROE of 10%. Raising the quality of capital and building an additional buffer equivalent to a 1-percentage-point increase of the common equity tier 1 ratio causes lending spreads to go up by 31 basis points, GDP growth to contract by 0.17 percentage points and growth of gross fixed capital formation to go down by 0.54 percentage points over the three-year horizon (see table 3), when we look at Austria alone. To catch spillover effects within the EU it is, again, important to add indirect effects, which brings the total contraction of GDP up to 0.23 percentage points. Here, too, the model calculations show that higher ROE levels drive up the macroeconomic costs significantly.

In the long-term scenario (see table 4) we again focus on a ROE of 15%. The macroeconomic effects of raising the quality of capital and creating an additional buffer equivalent to a 1-percentage-point increase in the common equity tier 1 ratio are such that lending spreads go up by 33 basis

Table 4

Combined Long-Term Growth Impact of Higher Quality of Core Tier 1 Capital and Additional Buffers (+1 pp of Common Equity Tier 1 Capital)

		ROE 10%	ROE 15%	ROE 20%	ROE 25%
	Costs (EUR million p.a.)	1,129	1,656	2,569	3,289
	Lending spread (change in basis points)	23	33	51	66
Direct growth impact over 3 years[1]	GDP	−0.13	−0.20	−0.30	−0.39
	Gross fixed capital formation	−0.44	−0.64	−1.00	−1.28
	Private consumption	−0.20	−0.30	−0.46	−0.59
	HICP	−0.06	−0.09	−0.14	−0.18
Direct and indirect growth impact over 3 years[1]	GDP	−0.18	−0.26	−0.41	−0.52
	Gross fixed capital formation	−0.50	−0.74	−1.14	−1.46
	Private consumption	−0.22	−0.33	−0.51	−0.66
	HICP	−0.07	−0.11	−0.17	−0.21

Source: Simulations based on the OeNB's AQM (direct effects) and on Eurosystem NCBs' projection update elasticities (indirect effects), Eurostat.

[1] *Cumulative deviation of simulated growth rates from baseline in percentage points.*

Note: Medium-term: Pass-through of increased spreads to new loans and step-wise adjustment to new regulations.
Long-term: Pass-through of increased costs to entire loan portfolio and full adjustment to new regulations.

points and that GDP growth contracts by 0.26 percentage points over the three-year simulation horizon (reflecting both direct and indirect effects). Again, the macroeconomic effects would be almost twice as strong for an ROE of 25%.

If the derogation under Article 23 paragraph 13 item 6 Banking Act cannot be retained, funding costs would rise by as much as EUR 972 million under the medium-term scenario and by as much EUR 2 billion under the long-term scenario (reflecting direct and indirect effects). Those figures map into a total rise in lending spreads by 38 (41) basis points and a total contraction of GDP growth by 0.29 (0.32) percentage points.[17] In other words, raising the quality of capital alone, without creating buffers beyond the regulatory minimum, implies but moderate macroeconomic costs. Regulatory requirements or market demands to hold additional common equity buffers stand to drive up lending spreads more significantly and would thus also translate into stronger macroeconomic effects.

3.3 Liquidity Requirements under Basel III: Net Stable Funding Ratio

In the debate on liquidity standards, the BCBS proposed to establish two global minimum liquidity ratios by introducing a liquidity coverage ratio and a net stable funding ratio (BCBS, 2009 and 2010b). The liquidity coverage ratio (LCR) is meant to ensure that banks maintain a stock of high-quality liquid assets which is sufficient to meet short-term liquidity needs. Eligible assets include above all sovereign bonds, central bank reserves as well as nonfinancial corporate bonds with low credit risk. The objective of the net stable funding ratio (NSFR) is to promote more medium and long-term funding of assets. The idea is to require banks to hold to a minimum amount of long-term funding in relation to the underlying liquidity risk of assets. The available amount of stable funding must be proven to exceed the required amount of stable funding in a stress scenario. The NSFR thus limits the amount of maturity transformation a bank may undertake. Due to the structure of the liquidity coverage ratio, estimating the LCR is rather difficult, which is why we concentrate on the NSFR in the following. Moreover, the NSFR is going to have significantly higher structural implications, as it may fundamentally change the maturity transformation of banks' operations. This means that it is also going to have the stronger macroeconomic effects.

Under the agreement reached on the reform package by the Group of Governors and Heads of Supervision – the oversight body of the BCBS – on July 26, 2010, the NSFR will be subjected to an observation phase and will not be introduced before 2018 (BCBS, 2010b). We are nonetheless assessing the impact of the calibration of the NSFR in our paper, based on the balance sheet structure of the Austrian banking system as at December 31, 2009.

---

[17] *Servicing additional capital requirements for meeting the total (tier 1 plus tier 2) capital adequacy ratios and creating an additional buffer raising the common equity tier 1 ratio by, say, 1 percentage point amounts to EUR 1.1 billion per annum in the medium-term scenario and EUR 2.3 billion per annum in the long-term scenario, which raises lending spreads by 44 (46) basis points and causes GDP growth to go down by 0.33 (0.37) percentage points (reflecting both direct and indirect effects). If the derogation under Article 23 paragraph 13 item 6 Banking Act cannot be retained, the cost of servicing additional capital requirements would increase to EUR 1.4 billion (EUR 2.8 billion), which would in turn raise lending spreads by 52 (56) basis points and cause GDP growth to go down by 0.39 (0.44) percentage points.*

The simulations are based on market opinions, initial internal exercises at major domestic banks and internal OeNB estimates. Assuming in line with market assessments that NSFR implementation will increase EU-wide long-term refinancing needs by between EUR 1,100 billion and EUR 2,600 billion, and assuming that Austrian banking assets (approximately EUR 1,150 billion) account for roughly one-thirtieth (approximately EUR 31,000 billion) of European banking assets, Austrian banks would need to secure additional long-term funding in the range of EUR 33 billion to EUR 80 billion to meet the NSFR standards. Estimates made within the framework the Quantitative Impact Study (QIS) launched by the BIS arrived at a figure at the lower end of this spectrum, namely some EUR 35 billion, which can be attributed to the fact that the balance sheets of Austrian banks exhibit a higher degree of liquidity than the European average.

Austria's largest banks currently expect spreads of long-term refinancing costs above mid-swap of between 60 to 70 basis points and 110 to 150 ba-sis points; against this backdrop we assume the spreads to average 120 basis points for the Austrian banking system. Based on the assumption of additional long-term funding needs of EUR 35 billion over the next three years, which we established above, banks would need to raise their issuance volumes by EUR 11.7 billion in each of the three years of our simulation horizon. In practice, as banks stagger their necessary issuance activities in the medium term over three years, we assume that the stock of long-term debt increases by EUR 23.3 billion on average over the three years. Based on this amount and on a spread of 120 basis points, we arrive at additional annual funding costs of EUR 280 million on average. In the long-term scenario the outstanding stock of long-term debt increases to the full amount of EUR 35 billion, which drives up banks' additional funding costs to EUR 420 million per year. In addition to extending the refinancing horizon, banks may also resort to the substitution of assets: They may replace assets which are assigned high weights under NSFR (such as loans) with assets that carry low weights (such

Table 5

Growth Impact of a Net Stable Funding Ratio

		Medium-term scenario	Long-term scenario
	Costs (EUR million p.a.)	280	420
	Lending spread (change in basis points)	14	8
Direct growth impact over 3 years[1]	GDP	−0.08	−0.05
	Gross fixed capital formation	−0.24	−0.16
	Private consumption	−0.11	−0.07
	HICP	−0.03	−0.02
Direct and indirect growth impact over 3 years[1]	GDP	−0.11	−0.06
	Gross fixed capital formation	−0.28	−0.18
	Private consumption	−0.13	−0.08
	HICP	−0.03	−0.03

Source: Simulations based on the OeNB's AQM (direct effects) and on Eurosystem NCBs' projection update elasticities (indirect effects), Eurostat.

[1] Cumulative deviation of simulated growth rates from baseline in percentage points.

Note: Medium-term: Pass-through of increased spreads to new loans and step-wise adjustment to new regulations.
      Long-term: Pass-through of increased costs to entire loan portfolio and full adjustment to new regulations.

as government bonds). If we assume that opportunity costs are roughly 120 basis points on average in this context, then the type of adjustment does not play a significant role within our conceptual framework. In the medium-term scenario the higher internal fund transfer price can be passed though to a repricing loan volume of EUR 200 billion on average, which maps into an increase in lending spreads by approximately 14 basis points.

The long-term scenario, in which these costs can be passed through to a higher repricing loan volume of EUR 500 billion, the spread narrows from 14 to 8 basis points. Note that these figures do not include second-round effects: The high issuance volumes of European bank bonds, which do not qualify as liquid assets in the LCR scenarios but need to be fully covered with long-term funding under the NSFR scenarios, and the high issuance volumes of EU Member States may cause the spreads of bank bonds to rise.

The medium-term direct macroeconomic effects of implementing the NSFR cause GDP growth to contract by 0.08 percentage points over the three-year horizon, which is rather moderate compared with the other measures. Effects are found to be strongest, and thus quite relevant, for the growth of gross fixed capital formation, which is projected to go down by 0.24 percentage points. The long-term direct macroeconomic effects add up to −0.05 percentage points. As the proposals to amend the Capital Requirements Directive (CRD IV) provide for the EU-wide implementation of the NSFR, we also need to take indirect effects into consideration: Doing so pushes the medium-term contraction of GDP growth up to 0.11 percentage points, and the long-term contraction up to 0.06 percentage points. The overall impact on the growth of gross fixed capital formation is again somewhat higher (−0.28 percentage points in the medium-term and −0.18 percentage points in the long-term scenario).

Taking account of QIS results, the BCBS considerably weakened the initial NSFR calibration and decided to postpone implementation of the revised NSFR at least until 2018 (agreement reached on July 26, 2010). The initial version (December 2009) would have had stronger effects: The combined direct and indirect effect would have been −0.23 percentage points (medium-term scenario) and −0.14 percentage points (long-term scenario).

3.4 Contingent Capital

Government rescue packages providing a downside safety net to protect "too big to fail" institutions from default have created a classic moral hazard problem, referred to in the media as a problem of "privatizing profits, socializing losses." The prospect of government rescue packages prompts systemically important credit institutions to incur higher risks, since they can bank on being bailed out by the government at relatively low cost to themselves, which gives them a competitive edge over more risk-averse institutions (which, in turn, earn lower profits and appear less attractive to investors). Yet the higher risks do not translate into higher refinancing costs on the debt capital markets, as creditors expect the governments to step in anyhow in the event of crisis. Numerous economists have argued that the "too big to fail" problem could be addressed with the issuance of "contingent capital" (Acharya et al., 2009; Kashyap et al., 2008; Shiller, 2010; Squam Lake Working Group on Financial Regulation, 2009). The BCBS (2010b and c) has also discussed the contingent capital idea as a

potential measure for reducing the cost of banking crises and for tackling the "too big to fail" problem.

In practice, banks would issue contingent capital in the form of, for instance, contingent convertible bonds.[18] Under certain extreme conditions (e.g. if the issuing bank would fail to meet a given minimum capital adequacy ratio), those debt instruments would automatically convert into equity qualifying as common equity tier 1 capital. In other words, debt capital would convert into risk-absorbing equity capital. This instrument causes the capital ratio to rise and averts default or significantly weakens the threat of default, thus significantly reducing the underlying systemic risk.

To analyze the use of contingent capital, let us look at two examples: Lloyds Banking Group issued contingent capital, dubbed enhanced capital notes, in November 2009, inviting investors to swap selected tier 1 and tier 2 hybrid capital instruments they already had in their books against the new instruments. Lloyds pays a higher coupon for enhanced capital notes than for existing tier 1 (ranging from +150 to +200 basis points) and tier 2 hybrid capital (+250 basis points). These enhanced capital notes come with compulsory annual coupon payments. As such, the new instruments are not compatible with CRD II provisions. The enhanced capital notes automatically convert to equity should the core tier 1 ratio fall below 5%. Investors swapped the equivalent of GBP 9.3 billion, significantly more than Lloyds had anticipated (GBP 7.5 billion). If we assume the additional refinancing costs to lie in the range of 200 basis points, the additional costs would add up to GBP 465

million. In the absence of data on the maturity structure of the loan portfolio of Lloyds, we deduce the average amount of loans repriced in the medium-term scenario from the Austrian share of 40%: 40% out of a loan portfolio of GBP 626 billion are GBP 250 billion, which we reprice to reflect the additional refinancing costs established above (GBP 465 million). Thus, we find lending spreads to rise by approximately 19 basis points. In the long-term scenario, lending spreads again rise by a lower margin (7 basis points), as the additional costs can be passed through to the entire loan portfolio of GBP 626 billion.

UniCredit launched a similar transaction based on CRD II provisions with a tier 1 contingent capital product in July 2010, issuing 10-year bonds (which it may redeem after those ten years subject to Banca d'Italia approval) with a volume of EUR 500 million and subject to the following conditions: Coupon payments will be suspended if the bank's capital adequacy ratio falls below 8%, and the bonds will be written down, pari passu and pro-rated with the issuer's nonconsolidated tier 1 capital, if the ratio falls below 6%. The paper carries a coupon of 9.375% in the first ten years and was issued at par. The transaction met with strong demand (the offer was oversubscribed 2.2 times). If not called after ten years, the instrument will pay a floating rate coupon equal to the 3-month EURIBOR plus a spread of 749 basis points. Strong investor demand allowed UniCredit to price the coupon slightly below initial expectations. All in all, 210 different parties invested in the instrument, with asset managers accounting for 52%, banks for 32% and insurance compa-

---

[18] Other proposals along the lines of contingent capital refer to the issuance of "regulatory hybrid securities," "mandatory capital notes" or "enhanced capital notes."

Table 6

Growth Impact of Substituting Contingent Capital for Hybrid Capital

		Medium-term scenario	Long-term scenario
	Costs (EUR million p.a.)	200	300
	Lending spread (change in basis points)	10	6
Direct growth impact over 3 years[1]	GDP	−0.06	−0.04
	Gross fixed capital formation	−0.17	−0.12
	Private consumption	−0.08	−0.05
	HICP	−0.02	−0.02
Direct and indirect growth impact over 3 years[1]	GDP	−0.08	−0.05
	Gross fixed capital formation	−0.20	−0.13
	Private consumption	−0.09	−0.06
	HICP	−0.02	−0.02

Source: Simulations based on the OeNB's AQM (direct effects) and on Eurosystem NCBs' projection update elasticities (indirect effects), Eurostat.

[1] Cumulative deviation of simulated growth rates from baseline in percentage points.

Note: Medium-term: Pass-through of increased spreads to new loans and step-wise adjustment to new regulations.
　　　Long-term: Pass-through of increased costs to entire loan portfolio and full adjustment to new regulations.

nies for 4% of investors. Demand was widespread across Europe (only 14% of all investors were based in Italy).

How do we estimate the lending spreads associated with the issuance of contingent capital in Austria? We start out by assuming a total volume of EUR 15 billion (i.e. the amount of equity made available under the Austrian bank support package of 2008). We also assume that the contingent capital instruments would come with the same average spread over the existing hybrid capital as in the Lloyds scenario, and that the instruments would be issued over a period of three years. Thus, we arrive at additional annual costs of EUR 200 million under the medium-term scenario and of EUR 300 million under the long-term scenario. Passing through those amounts to the loan portfolios that come up for repricing (EUR 200 billion and EUR 500 billion, as above), we arrive at an increase in lending spreads by 10 and 6 basis points, respectively.

The macroeconomic impact of issuing contingent capital, as established by the model calculations, is shown in table 6. In the medium-term scenario the direct impact on GDP growth is fairly small, adding up to a cumulative decline in output growth of a mere 0.06 percentage points after three years. This compares with a cumulative reduction of 0.17 percentage points for gross fixed capital formation, and of 0.08 percentage points for private consumption. If EU rules are amended to cover such forms of hybrid capital, it is also necessary to take account of indirect effects. From such a wider perspective, we find GDP growth to decline by as much as 0.08 percentage points.

In the long-term scenario, the effects are even more moderate, as they would be cushioned by a significantly higher volume of loans that can be repriced. In this scenario, increases in lending spreads narrow to 6 basis points, and the cumulative decline in GDP growth narrows to 0.04 percentage points (direct effects). Even subject to the inclusion of indirect effects, GDP growth would not go down by more than 0.05 percentage points.

In sum, we find the relative macroeconomic costs of issuing contingent capital fairly moderate under both the medium-term and the long-term scenario.

3.5 Abolishing Implicit Government Guarantees

Implicit government guarantees might be abolished e.g. under a new bank resolution regime. While the EU has not drafted specific proposals for a bank resolution regime to date, we have nonetheless included the macroeconomic effects of such a measure in our study, as a bank resolution regime does play an important role in the regulatory debate. In the following, we approximate the size of the subsidies granted to banks through implicit government guarantees with two independent methods:

The starting point for the first method is the difference between the spread on senior bank bonds and the spread on tier 1 hybrid capital. The former benefit from implicit government guarantees; there have not been any defaults of such bonds. In contrast, hybrid capital has been used to absorb risks in some instances (cases in point being callable bonds which were not called or lost coupons), and hybrid capital has hence suffered significant price setbacks. This is a relationship that we can exploit with our first method: JP Morgan estimates the yield difference for a sample of 16 major international banks to average 79 basis points (over a 5-year horizon), with U.K. banks reporting significantly higher values on account of European Commission rules. In the case of UniCredit, for instance, JP Morgan (2010) arrived at a value of 68 basis points.

The second method exploits the fact that Moody's publishes a stand-alone rating and a senior debt rating for all banks. The latter explicitly reflects any implicit government guarantees, while the former is an indicator of the financial strength of a given institution. We used the ratings for the seven Austrian banks included in Moody's sam-ple. The average difference between the stand-alone ratings and the senior debt ratings in the sample is seven notches. We use Bloomberg Fair Value indices to translate those rating differences into yield spreads. As a fair number of bank bonds (above all bonds issued by smaller banks such as a number of Austrian institutions) are not traded heavily, Bloomberg calculates theoretical prices for those bonds on the basis of more liquid instruments with the same rating and a similar maturity. Specifically, Bloomberg's Fair Value AA index provides the best fit for the senior debt ratings of the banks included in the sample, while its Fair Value BBB index approximates the stand-alone ratings best. Thus, we arrive at a yield difference of some 75 basis points between the two indices for the first half of 2010.

Our conservative approximation based on those two methods is that implicit government guarantees give Austrian banks an interest rate advantage of 70 basis points. Should those guarantees cease to apply, the higher spreads would apply only to any future issues. According to financial accounts data for Austria (2009), the volume of outstanding bank bonds totals approximately EUR 260 billion, which Moody's (2009) assumes to have an average maturity of 5.7 years. Those figures would imply refinancing needs of some EUR 46 billion per year. Those funding needs would in turn generate additional costs of EUR 322 million in the first year, of EUR 644 million in the second year, and of EUR 944 million in the third year – or of EUR 644 million on average in those three years. In our model, we pass those costs through to the average portfolio of loans that may be repriced in the medium term (EUR 200 billion), thus arriving at an increase in lending spreads by 32 basis

Table 7

Growth Impact of Abolishing Implicit Government Guarantees for Senior Bank Bonds

		Medium-term scenario	Long-term scenario
	Costs (EUR million p.a.)	644	1,820
	Lending spread (change in basis points)	32	36
Direct growth impact over 3 years[1]	GDP	−0.18	−0.21
	Gross fixed capital formation	−0.56	−0.70
	Private consumption	−0.25	−0.32
	HICP	−0.06	−0.10
Direct and indirect growth impact over 3 years[1]	GDP	−0.24	−0.28
	Gross fixed capital formation	−0.65	−0.80
	Private consumption	−0.29	−0.36
	HICP	−0.08	−0.12

Source: Simulations based on the OeNB's AQM (direct effects) and on Eurosystem NCBs' projection update elasticities (indirect effects), Eurostat.

[1] Cumulative deviation of simulated growth rates from baseline in percentage points.

Note: Medium-term: Pass-through of increased spreads to new loans and step-wise adjustment to new regulations.
Long-term: Pass-through of increased costs to entire loan portfolio and full adjustment to new regulations.

points. In the long term, repricing the entire portfolio of bonds (EUR 260 billion) will generate additional costs of EUR 1.8 billion in each of the three years. When we pass through this sum to the entire credit portfolio, we arrive at a widening of lending spreads by 36 basis points.[19]

Abolishing implicit government guarantees on senior bank bonds (e.g. by establishing a bank resolution regime), would generate substantial growth effects. In the three-year medium-term scenario, Austrian GDP growth would go down by a total of 0.18 percentage points (direct effect alone; see table 7). The combined direct and indirect effects of EU-wide implementation of bank insolvency legislation would dampen Austrian GDP growth by as much as 0.24 percentage points.

In the long-term scenario, our model calculations yield a cumulative direct growth effect of 0.21 percentage points, and a cumulative direct and in-

direct growth effect of −0.28 percentage points.

To sum it up, abolishing implicit government guarantees on senior bank bonds (e.g. by implementing bank resolution legislation) stands to create substantial macroeconomic costs both in the medium and long term. It should also be noted that our estimates do not reflect any second-round effects, which might raise the refinancing risk of banks.

3.6 Reforming Deposit Guarantee Schemes

Statutory deposit guarantee schemes protect client savings (deposits made in savings, fixed-term or current accounts and deposits made under saving and loan contracts) if their bank should fail. Such schemes are meant to prevent a run on banks that have become distressed or are rumored to have run into financial troubles. In the following we refer to the legislative proposal to reform the EU Directive on Deposit

[19] In this context, the lending spread is higher in the long-term scenario than in the medium-term scenario. The difference reflects the necessary time lag in the repricing of bank bonds, which depends on the average maturity of close to six years.

Guarantee Schemes that the European Commission (2010b) adopted in mid-2010. Under the reform, banks throughout the EU would provide a uniform level of protection to all depositors, including nonfinancial corporations (EUR 100,000 or the equivalent thereof per depositor and bank).

The proposal reflects the European Commission's preference for a predominant share of ex-ante funding (calculated on the basis of risk-based contributions). Requiring banks to build up sufficiently high stocks is meant to ensure that depositors can be repaid within one week in the event of bank failures. After a transition period from 2013 to 2020, deposit guarantee schemes would have to have assets amounting to 1.5% of eligible deposits on hand. In this respect we can offer only a rough estimate of how big the corresponding burden will be on Austrian banks, as the draft proposal is yet to be fine-tuned in a number of points, and as the provisions are yet to be trans-

posed into national law. At the time of writing, we can only refer to unconsolidated data on the amount of deposits that were subject to deposit guarantees on December 31, 2009. As the draft proposal's definition of assets that are eligible for deposit protection differs from the definition of eligible deposits under current reporting requirements, we can but provide a range estimate. Based on the deposits of domestic households and nonfinancial corporations, eligible deposits totaled EUR 249 billion; including deposits made by nonresident households, nonresident nonbank financial intermediaries and foreign sovereigns, eligible deposits totaled EUR 297 billion at the end of 2009.[20] In line with the proposed ex-ante funding of deposit insurance schemes and the target level of 1.5% of eligible deposits established for 2020, we estimate banks to have to set aside assets within a range of EUR 466 million and EUR 558 million in order to reach this level. For the purpose of esti-

Table 8

Growth Impact of Annual Deposit Guarantee Contributions Based on European Commission Proposals

		Medium-term scenario	Long-term scenario
	Costs (EUR million p.a.)	500	500
	Lending spread (change in basis points)	29	12
Direct growth impact over 3 years[1]	GDP	−0.16	−0.07
	Gross fixed capital formation	−0.51	−0.23
	Private consumption	−0.23	−0.11
	HICP	−0.06	−0.03
Direct and indirect growth impact over 3 years[1]	GDP	−0.22	−0.09
	Gross fixed capital formation	−0.59	−0.27
	Private consumption	−0.26	−0.12
	HICP	−0.07	−0.04

Source: Simulations based on the OeNB's AQM (direct effects) and on Eurosystem NCBs' projection update elasticities (indirect effects), Eurostat.

[1] Cumulative deviation of simulated growth rates from baseline in percentage points.

Note: Medium-term: Pass-through of increased spreads to new loans and step-wise adjustment to new regulations.
Long-term: Pass-through of increased costs to entire loan portfolio and full adjustment to new regulations.

[20] The data on the deposits of domestic households are based on unlimited coverage of deposits, which continued to apply on December 31, 2009. It was not possible to remove the deposits made by nonbank financial intermediaries and foreign sovereigns from the data on nonresident deposits.

mating the underlying macroeconomic effects, we assume that banks will have to contribute EUR 500 million per year to the deposit guarantee funds. Apart from the fact that we need to rely on assumptions with regard to size of eligible assets, there is the problem of consolidation: As the contributions of foreign subsidiaries reflect the risk profile of the subsidiaries and as the contributions of foreign competitors reflect the institutional frameworks prevailing in the individual EU countries, we use unconsolidated data and apply them to unconsolidated loan repricing volumes. Based on loan repricing volumes of EUR 170 billion (medium-term scenario) and EUR 415 billion (long-term scenario), we expect lending rates to rise by 29 and 12 basis points, respectively.

The incidence of these assumptions must be viewed very critically, however, as in this case bank product pricing refers to the internal price of deposits and not to lending spreads. We used the same incidence assumptions as for the other debt funding measures that we assessed above in order to ensure comparability across measures and due to the structure of the macro model.

The macroeconomic costs of the medium-term scenario significantly exceed those of the long-term scenario, as it is not possible to stagger the introduction of the annual contributions in the medium-term scenario, and as loan repricing volumes to which those contributions can be passed through are smaller (see table 8). Over the three-year simulation horizon, GDP growth would go down by a total of 0.16 percentage points (direct effects only) in the medium-term scenario, but only by

0.07 percentage points in the long-term scenario. Again, it is useful to add indirect spillover effects from other EU countries. The combined direct and indirect effect is non-negligible in the medium term (−0.22 percentage points), but moderate in the long term (−0.09 percentage points).

4 Summary and Discussion

Chart 2 provides an overview of the implications that the individual regulatory measures are likely to entail for the Austrian banking system. First, the requirement to raise the quality of the capital base and the need to build additional buffers (which we assume to raise the level of common equity by 100 basis points) maps into additional costs of EUR 752 million in the main medium-term scenario. The corresponding estimate for the long-term scenario is EUR 1,656 million. In the medium-term scenario, those costs break down into the cost of raising the quality of tier 1 capital (EUR 386 million) and of building additional buffers (equivalent to a 1-percentage-point increase in the common equity tier 1 ratio = EUR 367 million).[21] In the long-term scenario, the costs break down to EUR 1,024 million and EUR 633 million. Second, abolishing implicit government guarantees for senior bank bonds e.g. by implementing a bank resolution regime would drive up annual funding costs by EUR 644 million (medium-term scenario) or EUR 1,820 million (long-term scenario). Third, we find the introduction of a net stable funding ratio (NSFR) to create additional average annual costs of EUR 280 million (medium-term scenario) or EUR 420 million (long-term scenario).

---

[21] *Given approximately linear relationships, the effects of the illustrative 1-percentage-point rise in the common equity tier 1 ratio are scalable. For instance, building a 2-percentage-point buffer beyond the regulatory minimum in the form of common equity comes at a cost of some EUR 750 million per year. The measures that we established for the macroeconomic effects are also approximately linear.*

Fourth, reforming deposit guarantee schemes would increase annual costs by EUR 500 million on average (medium- and long-term scenario). Fifth, the issuance of contingent capital would trigger additional annual costs of EUR 200 million (medium-term scenario) or EUR 300 million (long-term scenario). *It is important to see each of these costs simply as an indication of the relative impact of each measure. It is not possible to add up those figures,* as the sum total would have to be adjusted for complex interdependencies between the measures and would need to reflect changes to the balance sheet structure and to the business models and strategies with which banks are likely to respond to the measures. For instance, tighter capital regulations might, ceteris paribus, raise the ratio of available stable fund-

ing and hence decrease the costs of complying with NSFR requirements.

Chart 3 shows the effects on the Austrian economy of banks' higher funding costs. In this respect, two findings are particularly obvious:

First, the medium-term effects tend to be stronger than the long-term effects. This pattern is particularly pronounced with regard to deposit guarantee schemes, the NSFR and contingent capital (see chart 3). Above all, this can be attributed to the fact that the loan repricing volume is significantly higher in the long-term scenario, which implies lower increases of lending spreads. The fact that the macroeconomic effects of requiring banks to raise the quality of capital in combination with the creation of a 1-percentage-point common equity tier 1 buffer are higher

Chart 2

Implications of the Individual Measures for the Austrian Banking Sector

Source: OeNB.

Note: The underlying assumptions of the medium-term scenario include a staggered repricing of loans over the three-year simulation horizon reflecting average new lending volumes and a gradual implementation of all measures (other than deposit guarantee schemes).
The underlying assumptions of the long-term scenario are that the entire loan portfolio can be repriced and that all measures have been implemented in full. This chart reflects the proposed measures to raise the quality and/or quantity of common equity tier 1 capital subject to a 10% ROE in the medium term and subject to a 15% ROE in the long term.

in the long-term scenario can be traced to the higher ROE underlying the long-term scenario (15%, compared with 10% in the medium-term scenario). If we had retained an ROE of 10% in the long-term scenario, the medium-term scenario would again have emerged as the scenario with the higher effects. The only true exception in this respect is the abolition of implicit government guarantees: Its effects are stronger in the long-term scenario than in the medium-term scenario. This can be explained as follows: (liability-side) bank bonds come with a longer repricing period – compared with the time it takes to implement the proposed measures in full – than (asset-side) loans, as the underlying average maturity of bank bonds (which we assume to be about 5.7 years) is longer than the underlying average maturity of loans. With the exception of bank resolution legislation, the clear policy conclusion from the first key finding of the paper is thus as follows: The sooner banks start to implement the measures (above all by recapitalizing their balance sheets and by raising the liquidity of their balance sheets), the longer are the transition periods over which they can phase in the measures. This increases the volume of loans they can reprice and to which they can hence pass through higher costs, and this decreases the lending spreads required to finance the higher costs, as a result of which the macroeconomic costs are lower ceteris paribus.

The second key finding is that the – cumulative three-year – growth effects exceed –0.20 percentage points (including spillover effects from the euro area) only in three instances in the medium-term scenario: Raising the quality of tier 1 capital (–0.15 percentage points) and building an additional 1-percentage-point common equity tier 1 buffer (–0.08 percentage points) maps into a decline of GDP growth by 0.23 percentage points; abolishing implicit government guarantees on senior bank bonds would dampen GDP growth by 0.24 percentage points; and the reform of deposit guarantee schemes would shave 0.22 percentage points off GDP growth – all in the medium term. On a lesser scale, compliance with NSFR requirements – if their introduction had not been postponed to 2018 – would decrease GDP growth by 0.11 percentage points. The negative growth effects are even lower for the issuance of contingent capital, i.e. for the substitution of contingent capital for hybrid capital (–0.08 percentage points).

In the long-term scenario, the negative growth effects (including spillovers from other euro area countries) of raising the quality of tier 1 capital and of building a 1-percentage-point common equity tier 1 buffer add up to 0.26 percentage points; these costs break down into the cost of higher tier 1 capital quality requirements (–0.16 percentage points) and the cost of raising the common equity tier 1 buffer by 1 percentage point (–0.10 percentage points). The macroeconomic costs of abolishing implicit government guarantees stand to rise to –0.28 percentage points compared with the medium-term scenario, whereas the cost of reforming deposit guarantee schemes would dampen GDP growth by 0.09 percentage points. In contrast, the negative growth effects of meeting NSFR targets and of issuing contingent capital would be comparatively low (at –0.05 or –0.06 percentage points). As before, the growth effects of the individual measures cannot be aggregated meaningfully, as it is not possible to estimate the interaction between those measures and banks' response.

Apart from the relationships between the individual measures, the simulations show clearly that the macroeconomic effects are the stronger, the higher the ROE targets are. Conversely, the macroeconomic effects stand to decline as banks raise their efficiency and lower their cost-income ratios. Finally, the macroeconomic costs ultimately also reflect base effects: In banking systems that are well capitalized and very liquid to begin with, those effects are considerably lower than in poorly capitalized and comparatively illiquid banking systems.

What the model simulations can do, in essence, is to highlight the relative magnitudes of the economic effects that the different regulatory measures create: First, the proposed measure will remain work in progress until they become binding for banks; second, analyzing the macroeconomic effects of these measures requires a variety of assumptions, each of which is subject to uncertainty. Some assumptions made in the model calculations will cause effects to be underestimated, whereas other will cause effects to be overestimated.

The underestimation bias results from the impact of other crisis effects which we have neglected (such as the fact that the general repricing of risks in money and capital markets drives up banks' refinancing costs). We focused on price effects and assumed the supply of capital to be price-elastic; yet in the case of very stringent capital and liquidity provisions poorly capitalized banking systems might suffer from rationing and second-round effects. This problem might in fact have been solved through recalibrations of the Basel III framework undertaken in July 2010. An underestimation bias may also result from the fact that, while we did include spillover effects from other euro area countries, we did not take into account spillovers from other economic areas. As the Basel III framework is meant to apply on a global scale, we may have underestimated the effects on exports, and thus on GDP growth.

The overestimation bias underlying the macroeconomic effects results

Chart 3

Negative Growth Effects after Three Years (Cumulative Deviations of Growth Rates from Baseline)
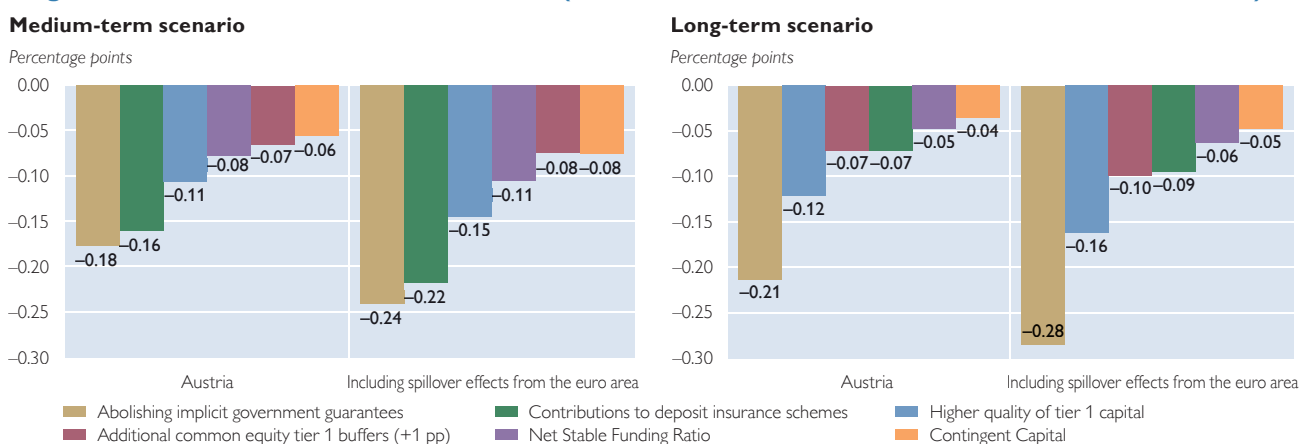
Medium-term scenario

Percentage points

Long-term scenario

Percentage points

Source: OeNB.

Note: The underlying assumptions of the medium-term scenario include a staggered repricing of loans over the three-year simulation horizon reflecting average new lending volumes and a gradual implementation of all measures (other than deposit guarantee schemes).
The underlying assumptions of the long-term scenario are that the entire loan portfolio can be repriced and that all measures have been implemented in full. This chart reflects the proposed measures to raise the quality and/or quantity of common equity tier 1 capital subject to a 10% ROE in the medium term and subject to a 15% ROE in the long term.

above all from the use of recent data on the growth of credit, which has fallen below long-term growth rates in the wake of the financial crisis, and from a failure to account for possible substitution effects in the behavior of banks and borrowers. The reforms themselves might cause equity and debt servicing costs to go down as the banking system becomes more resilient to shocks, as a result of which the macroeconomic effects would be lower than we found them to be in our analysis. Moreover, we started from the assumption of constant asset and liability levels and balance sheet structures. Asset-side and/or liability-side substitution effects should – assuming rational behavior of banks – tend to lower banks' costs and the ensuing macroeconomic effects (e.g. the level of risk-weighted assets should go down as risks go down). Another overestimation bias may result from the fact that we neglected the kind of positive long-term effects that may result from volume effects: The proposed regulatory measures should limit economically inefficient lending (where lending spreads do not cover risk costs) which is detrimental to long-term growth and should thus dampen the boom-bust lending cycle.

Yet in sum, the overestimation and the underestimation bias effects should cancel each other out more or less.

References

Acharya, V.V., Th. Cooley, M. Richardson and I. Walter. 2009. Real Time Solutions for Financial Reform. NYU Stern Working Group on Financial Reform New York, http://govtpolicyrecs.stern.nyu.edu/docs/whitepapers_ebook_full.pdf (retrieved on September 23, 2010)

Bank Austria. 2010. Lehren aus der Krise, neue Herausforderungen. Press tour presentation on July 16, 2010. Bratislava.

BIS – Bank for International Settlements. 2010. 80th Annual Report. Basel.

Bank of England. 2010. Financial Stability Report 27. June 2010.

Barrell, R., E.P. Davis, T. Fic, D. Holland, S. Kirby and I. Liadze. 2009. Optimal regulation of bank capital and liquidity: how to calibrate new international standards. FSA Occasional Paper Series 38. London.

BCBS – Basel Committee on Banking Supervision. 2009. Strengthening the resilience of the banking sector. Consultative document. Basel. December.

BCBS. 2010a. An assessment of the long-term economic impact of stronger capital and liquidity requirements. Basel. August.

BCBS. 2010b. The Group of Governors and Heads of Supervision reach broad agreement on Basel Committee capital and liquidity reform package. Press release made on July 26, 2010. www.bis.org/press/p100726/annex.pdf (retrieved on September 23, 2010)

BCBS. 2010c. Proposal to ensure the loss absorbency of regulatory capital at the point of non-viability. Consultative Document. Basel. August.

BCBS. 2010d. Group of Governors and Heads of Supervision announces higher global minimum capital standards. Press release made on September 12, 2010. www.bis.org/press.p100912.pdf (retrieved on September 23, 2010).

Button, R., S. Pezzini and N. Rossiter. 2010. Understanding the price of new credit. Bank of England Quarterly Bulletin Q3. London. 172–182.

CEBS – Committee of European Banking Supervisors. 2010. Guidelines on Liquidity Cost Benefit Allocation. CEBS 2010–22, London. October 27.

Elliott, D. J. 2009. Quantifying the Effects on Lending of Increased Capital Requirements. Pew Financial Reform Project. The Brookings Institution.

European Commission. 2010a. Financial crisis response: Commission asks stakeholders for views on further possible changes to Capital Requirements Directive ("CRD IV"). IP/10/197. Brussels. February 22, 2010.

European Commission. 2010b. Commission proposes package to boost consumer protection and confidence in financial sectors. IP/10/918. July 12, 2010. Brussels.

FBF – Féderation Bancaire Française. 2010. FBF Comments on the consultative documents published by the BCBS. Paris.

Francis W. and M. Osborne. 2009. On the Behaviour and Determinants of Risk-Based Capital Ratios: Revisiting the Evidence from UK Banking Institutions. FSA Occasional Paper Series 31. March.

Hartmann-Wendels, T., A. Pfingsten and M. Weber. 2007. Bankbetriebslehre. Springer, Berlin.

IHS – Institute for Advanced Studies. 2010. Basel III: Mögliche Auswirkungen auf Kreditvolumina und gesamtwirtschaftliche Entwicklungen in Österreich. Press conference handout (July 21, 2010). Vienna.

IIF – Institute of International Finance. 2010a Interim Report on the Cumulative Impact on the Global Economy of Proposed Changes in the Banking Regulatory Framework. Washington, D.C.

IIF. 2010b. The Net Cumulative Economic Impact of Banking Sector Regulation: Some New Perspectives. Washington, D.C. October.

J.P. Morgan. 2010. Global Banks – Too Big To Fail? London.

"La Caixa" – Caja de Ahorros y Pensiones de Barcelona. 2010. The Impact for Spain of the new Banking Regulations Proposed by the Basel Commitee. Working Paper Series 01/2010. Barcelona.

Laeven, L. and F. Valencia. 2010. Resolution of Banking Crises: The Good, the Bad, and the Ugly. International Monetary Fund Working Paper WP/10/146, Washington, D.C.

Kashyap, A.K., R. G. Rajan and J.C. Stein. 2008. Rethinking Capital Reform. Paper presented at the Fed Kansas City symposion, August 2008.

Kerbl, S. and M. Sigmund. 2009. Quantifying the Cyclicality of Regulatory Capital – First Evidence from Austria. Financial Stability Report 18. OeNB. 96–106.

MAG – Macroeconomic Assessment Group. 2010. Interim Report. Assessing the Macroeconomic Impact of the Transition to Stronger Capital and Liquidity Requirements. Basel.

Modigliani, F. and M. Miller. 1958. The Cost of Capital, Corporation Finance, and the Theory of Investment. American Economic Review, 48(3). 261–297.

Moody's. 2009. Banks' Wholesale Debt Maturity Profiles Shorten, Exposing Many Banks to Refinancing Risks. Moody's Investor Service. London. November.

OeNB – Oesterreichische Nationalbank. 2009. Financial Stability Report 17.

Schneider, M. and M. Leibrecht. 2006. AQM-06: The Macroeconomic Model of the OeNB. OeNB Working Paper 132.

Shiller, R.J. 2010. Engineering Financial Stability. Project Syndicate: A World of Ideas. www.project-syndicate.org/commentary/shiller69/English (retrieved on September 23, 2010).

Squam Lake Working Group on Financial Regulation. 2009. Improving Resolution Options for Systemically Relevant Institutions. Council on Foreign Relations. Working Paper. October.

Annex

<div align="right">Table A-1</div>

Empirical Evidence on the Macroeconomic Effects of Basel III

Paper	Countries	Method[1]	Measures[1]	Ensuing Drop in GDP Growth or Level[1]
MAG (2010)[2]	Very large sample of numerous studies on numerous countries / regions	Many different methodologies: large structural macro models, reduced-form vector autoregressions, DSGE models	1-percentage-point increase in the ratio of capital to risk-weighted assets	Drop in median GDP level (across all papers) after 18 quarters: 0.12% (transition period of 2 years) 0.16% (transition period of 4 years); ranging from 0.07% to 0.31% (excluding outliers); international spillovers: 0.03%
BCBS (2010a)	Similar to above; some overlaps	Long-term steady state analysis, different models	As above	Steady state output loss: 0.09%
Bank of England (2010)	U.K.	Production function approach	6-percentage-point increase in the ratio of capital to risk-weighted assets	Long-term decline of GDP trend growth: 0.6%
Barrell et al. (2009)	U.K.	Cost/benefit analysis, structural models + NIGEM	1-percentage-point increase of capital	Long-term steady state output decline: 0.08%
IIF (2010a)	U.S.A., euro area, Japan	Balance sheet models; profit and loss models; bank capital supply models; macro bloc	Different scenarios with and without regulation	Drop in GDP level 2011–2015: between 2.6 % (U.S.A.) and 4.3 % (euro area) Drop in GDP level 2011–2020: between 2.7 % (U.S.A.) and 4.4 % (euro area)
IIF (2010b)	U.S.A., euro area, Japan	As above	As above	Update (2010a). Cost of redefinition of capital requirements revised downward by 30% (without specifying the expected decline in GDP)
IHS (2010)	Austria	Macroeconomic growth models, sample-based estimate of potential decline in loan volumes in Austria	Decline in loan volume by 10% or 20%	Decline in GDP level after 5 years: between 1.26% (loan volume 10% lower) and 2.49% (loan volume 20% lower) Drop in GDP level after 10 years: between 2.83% (loan volume 10% lower) and 5.66% (loan volume 20% lower)
Bank Austria (2010)	Austria	Profit and loss account	Additional capital needs of between EUR 19.2 billion and EUR 34.9 billion	No GDP effects Bank profits drop to ⅓ (best-case scenario) or turn into losses (worst-case scenario) Lending spreads increase by 6 to 14 basis points for corporate loans and by 13 to 30 basis points for household loans
FBF (2010)	Euro area	Estimated drop in loan volume	New tier 1 ratio and new net stable funding ratio	Drop in GDP level: 1.5% in the short term more than 6% in the long term
La Caixa (2010)	Spain	Estimated drop in loan volume, using ECB elasticities	Shortfall in core capital: EUR 48 billion, new stable funding: EUR 300 billion	Long-term drop in GDP level: between 5% (most likely scenario) and 1.6% (best-case scenario)

[1] Selected results.

[2] Participating institutions: Reserve Bank of Australia, Central Bank of Brazil, Bank of Canada, People's Bank of China, Banque de France, Deutsche Bundesbank, Banca d'Italia, Financial Services Agency (Japan), Bank of Japan, Bank of Korea, Bank of Mexico, De Nederlandsche Bank, Banco de España, Schweizerische Nationalbank, Financial Services Authority (U.K.), Bank of England, Board of Governors of the Federal Reserve System, European Commission, ECB, IMF, Financial Stability Board, BCBS, BIS.

The Economics of Bank Insolvency, Restructuring and Recapitalization

Joint Research Workshop of the OeNB and the Max Planck Institute for Research on Collective Goods

Bank insolvency law, bank restructuring and the recapitalization of banks are not only legal or administrative issues but are of preeminent economic importance. To highlight the economic perspective, the OeNB hosted a two-day workshop on September 16 and 17, 2010, that was organized jointly by the OeNB's Economic Studies Division and the Bonn-based Max Planck Institute for Research on Collective Goods. Controversial and intense discussions proved that there are many innovative ideas to tackle the problems but that there is also a great need for economic policy discussion.

Helmut Elsinger,
Martin Summer[1]

The topics bank insolvency, bank restructuring and bank recapitalization have generally been seen as falling into the realm of specialized legal experts and high-level crisis managers at central banks and ministries of finance. Why these topics crop up on economic researchers' agendas, and what economists have to contribute to such topics at all was discussed in the workshop entitled "The Economics of Bank Insolvency, Restructuring and Recapitalization."

Insolvency law determines what happens when a bank fails and who is entitled to its assets.[2] The quality of the legal framework is key to whether these assets are largely preserved or destroyed, and whether investors have the right risk-taking incentives. Obviously, the features of insolvency law are of substantial economic importance. The protracted economic difficulties Japan experienced after the banking crisis of the late 1980s are generally attributed to a failed restructuring of the banking system.[3]

Not only insolvent banks but also undercapitalized banks create economic problems. An undercapitalized banking system may cause a credit crunch and may thus significantly exacerbate the economic consequences of a financial crisis. The organizers of the workshop, Martin Hellwig (Max Planck Institute) and Martin Summer (OeNB), invited participants from universities, economic policymakers and practitioners to come to Vienna to discuss these topics.

Executive Director Andreas Ittner, who is in charge of financial stability, banking supervision and statistics at the OeNB, opened the workshop with a brief overview of the current debate on how to deal with financial institutions that are considered too big to fail. He stressed that the implicit or explicit acknowledgement that there are banks and financial institutions which must not fail is incompatible with a financial system organized along market principles. Ittner called for mechanisms and institutions that make it possible to restructure failed banks at the lowest possible economic cost, if necessary, instead of simply using tax money to bail them out.

Ittner provided a short review of the various proposals for solutions offered in the recent economic debate, classifying them according to whether they address the "too big" (size) or the "to fail" (ex ante prevention of failure) aspect.

Direct and indirect limits on bank size on the basis of restrictions on total assets or taxation models appear problematic because they involve numerous measurement issues that make it difficult to find a sensible and feasible solution. Interfering in banks' business models by announcing that regulatory protection would only cover narrowly defined business models does not work because it would not be credible. Automatic recapitalization mechanisms that rely on price signals and the obligation to issue equity under particular predefined circumstances face the problem that these measures depend on precisely those institutions and markets whose operation is impaired during a crisis. Insurance-based solutions simply shift problems from the banking sector to the insurance sector, in particular during a systemic crisis. Ittner explicitly identified the banking insolvency law as a further opportunity to dispel the too-big-to-fail problem. This solution involves a special challenge, though: As a rule, those involved have just a single weekend to establish legal certainty in an insolvency or restructuring situation.

The workshop featured contributions on all of the above-mentioned aspects. The following speakers made presentations during the two-day sessions: Oliver Hart (Harvard University), Anat Admati (Stanford Graduate School of Business), Jean-Charles Rochet (University of Zurich), Beatrice Weder di Mauro (Johannes Gutenberg University Mainz and the German Council of Economic Experts), Peter Brierley (Bank of England), Viral Acharya (New York University), Philipp Schnabl (New York University), Peter Englund (Stockholm School of Economics), and Rama Cont (Columbia University and Centre national de la recherche scientifique). Renowned economics and legal experts acted as discussants for each contribution. The general discussion during both days was very lively – the issue of what to do with failed banks and of how to defuse the too-big-to-fail issue is obviously highly controversial.

Ex-Ante Solutions for the Too-Big-to-Fail Problem

Along the classification of the different solutions in Andreas Ittner's opening address, Oliver Hart started the workshop with the presentation "A New Capital Regulation for Large Financial Institutions," which was based on a working paper written jointly with Luigi Zingales (Booth School of Business, University of Chicago). The proposal may be seen as an example of an ex-ante solution to the too-big-to-fail problem.

Hart and Zingales propose a mechanism that differentiates between systemically relevant and systemically irrelevant. The first category includes bank deposits, short-term interbank borrowing and derivative contracts; these obligations must be protected during a crisis. Conversely, the second category (i.e. junior long-term financial debt) faces the risk of default. If the value of a bank's assets decreases to an extent that puts junior financial debt at risk, the regulator has to intervene. The price of a credit default swap (CDS) on long-term debt serves as a trigger mechanism. If this price exceeds a predefined threshold for a certain period of time, the regulator intervenes and subjects the financial institution to a stress test. If this test shows that long-term debt is not at risk, the regulator declares the bank adequately capitalized and, to

prove the validity of this assessment, injects tax money in the form of debt that is pari passu with respect to existing financial debt. If, however, the regulator determines that the debt is in fact at risk, the shareholders' rights are wiped out and the CEO is replaced with a receiver, who eliminates the existing nonsystemic debt, sells the financial institution and distributes the proceeds from the sale. Creditors are not fully repaid even if it would be possible. This haircut guarantees that the CDS price reflects the market perception of the probability of default and is not distorted by the expectation that the bank will be bailed out. The proposed mechanism of regulatory takeover is similar to a milder form of bankruptcy; it prevents inefficient liquidation of the financial institution while at the same time imposing discipline ex ante.

Discussant Josef Zechner (Vienna University of Economics and Business) emphasized that the proposal of Hart and Zingales is based on the highly controversial role of debt as a means to exercise discipline. If debt does not have the effect of increasing efficiency, the problem may also be solved by imposing higher capital requirements. In addition, the model assumes that stress tests very rapidly reveal the true state of a bank's financial health. If this is the case, the regulator could also guarantee bank solvency by means of regular stress tests that are not dependent on CDS prices.

In the model proposed by Hart and Zingales, the regulator does not pursue any selfish objectives, but acts exclusively in the interest of taxpayers. Zechner observed that if this were not entirely

so, it might well happen that negative stress test results are covered up so as not to tarnish the regulator's reputation (in the short run).

Anat Admati (Stanford Graduate School of Business) proposed another ex ante solution to the too-big-to-fail problem in her presentation "Improving Capital Regulation of Large Financial Institutions." The fragility of banks and the high social costs that can result from their failure are a consequence of a capital structure with a very high level of debt. Debt is a form of financing that – unlike equity – establishes payment obligations that have to be met irrespectively of the development of the bank's assets. When the financial crisis broke out, some institutions' (not risk-weighted) equity came to only 1% to 3% of total assets. Even a small loss is enough to create difficulties for banks with such a small capital base. The deleveraging multipliers in case of a forced sell-off of assets are huge.[4] So why are banks not required to hold more equity? The off-the-shelf answer is that equity financing is expensive compared to debt financing. Admati pointed out that many of the arguments put forward in favor of debt financing are fallacies and are often diametrically opposed to the theoretical and empirical results of corporate finance. Some of these arguments are simply wrong,[5] whereas others are based on a confusion of the private cost of (equity) capital and the social costs of a fragile banking system. The tax advantage of debt financing and the system of implicit guarantees in the event of a crisis are in fact tantamount to subsidizing debt financing. As a result of this distortion a higher equity ratio is more

---

[4] *The multiplier for a bank with 2% equity (not risk-weighted) is 50 whereas it is only 4 for a bank with 25% equity.*

[5] *For example, an increase in the equity ratio does not necessarily lead to a reduction in lending.*

expensive for banks privately, but it is an advantage for the economy as a whole. A third class of arguments is based on incorrectly applied theories about the incentive effect of debt financing. According to Admati, the economic advantages of banks having a high equity ratio are obvious, and the costs are low. Consequently, she sees a fairly simple solution to the too-big-to-fail problem: If the (unweighted) equity share in bank assets is raised markedly (to up to 25% to 30% of total assets), some problems on the workshop agenda will simply disappear.

Discussant Urs Birchler (University of Zurich) agreed to the arguments in the paper by Admati, DeMarzo, Hellwig and Pfleiderer. He saw the paper as an important contribution to the discussion of whether equity was expensive for banks or not. He emphasized that the distortionary effect that makes the costs of equity appear high from the viewpoint of bankers has its roots in the tax advantages of debt financing and, in the case of the large banks, the implicit guarantee of this debt by the state. However, Birchler did not see this de facto subsidy changing in the next few years. In his opinion, there would be no way to enforce a capital ratio increase to 25% to 30%. Although Birchler fully agreed with Admati in substance, he considered a solution based on convertible bonds to be more promising.

Jean-Charles Rochet (University of Zurich) presented another ex ante solution, which he and his coauthor Xavier Freixas (Pompeu Fabra University) developed. Their theoretical paper "Taming Systemically Important Financial Institutions" explores whether a combination of supervisory measures, insurance elements and incentive schemes for bank managers could solve the moral hazard problem that arises when a financial institution that has a

bailout guarantee takes on excessive risks. The proposal of Freixas and Rochet combines a systemic banking tax whose proceeds are used to fund the cost of resolutions in future systemic crises and the establishment of a supervisory authority endowed with special resolution powers and the power to control bank managers' compensation during crisis periods.

Discussant Rafael Repullo (Center for Monetary and Financial Studies – CEMFI) criticized the casual use of terminology, such as "market discipline," "bailout" and "systemically important," in Freixas' and Rochet's work. According to Repullo, the model framework was not suited to analyzing the regulation of large financial institutions.

Concrete Proposals for a Bank Restructuring Regime

During the afternoon of the first day of the workshop, two practical proposals for dealing with the too-big-to-fail problem were presented. The proposal of the German Council of Economic Experts presented by Beatrice Weder di Mauro has the status of a recommendation, whereas the British Banking Act presented by one of the key officials involved in its drafting, Peter Brierley (Bank of England), is a proper legal framework that was drafted and passed by Parliament within a year of the insolvency of Northern Rock.

In its expertise, the German Council of Economic Experts recommends combining a systemic risk levy and a systemic risk fund for financial institutions. Under this proposal, the tax is levied only on systemically relevant institutions, which are identified with an indicator comprising size, complexity and interconnectedness measures. The tax proceeds feed into the systemic risk fund that is endowed with comprehensive intervention, disciplining and

restructuring powers. If the systemic risk fund exceeds a certain volume threshold, the surplus is allocated to government.

Discussant Horst Eidenmüller (Ludwig-Maximilians-Universität Munich) focused on the systemic risk tax in his comment. In his view, it is difficult to assess a bank's systemic relevance. The lesson of the problems with IKB and Hypo Real Estate in Germany is that even medium-sized banks can have a major impact on the stability of the sector. For this reason, among taxation models, Eidenmüller prefers to tax all financial intermediaries according to their risk score. He expressed deep skepticism about instituting a systemic risk fund as an authority in its own right. In his view, central banks and supervisory authorities have both the expertise and the data to manage such a fund as is, and an additional institution would merely raise coordination costs.

Peter Brierley (Bank of England) presented the special resolution regime for failing banks that has been effective in the U.K. since 2009. Before the new law was enacted, the British prudential regulator had drawn on general (corporate) insolvency law. But for many reasons, this framework proved to be inadequate during the Northern Rock crisis: Banks are highly dependent on confidence in the system, and financial stability hinges directly on the stability of this trust. However, as financial stability is not an explicit objective of the general insolvency regime, a conventional insolvency may exacerbate an already existing banking crisis. Best-practice regimes should also allow pre-emptive intervention, i.e. intervention before an insolvency actually happens. Moreover, general (corporate) insolvency law is often in conflict with the continuity of key banking functions during insolvency procedures. Finally, general insolvency law does not recognize the special position of bank depositors.

The special resolution regime for banks attempts to address these drawbacks by putting into the hands of the banking supervisor the right to initiate and conduct the process of restructuring. During the procedure, the supervisor is endowed with the power "to carry out an orderly bank resolution in a manner protecting the public interest and financial stability," which overrides all other claims on the bank. The supervisor has a broad set of tools to resolve failing banks, and is obligated to pursue the objective of preserving financial stability. These tools include the power to (1) transfer the failing bank's business to a private sector purchaser, (2) take control of a failing bank's business through a bridge bank, (3) place a failing bank into temporary public ownership, (4) close and liquidate a bank or else recapitalize it. The resolution procedure involves the Financial Services Authority, the Bank of England, the Treasury and the Financial Services Compensation Scheme.

The next steps planned for the special resolution regime are improving its effectiveness in an international context, expanding its scope to other financial institutions, implementing recovery and resolution plans ("living wills") and introducing bail-in options, i.e. imposing losses on creditors.

Gérard Hertig (Swiss Federal Institute of Technology – ETH Zurich) expressed skepticism about the need to transfer insolvency procedures from courts to supervisory authorities. He considers improving the governance and organization of supervisory authorities a more pressing problem. According to Hertig, the biggest advantage of

having a particular bank insolvency procedure is that it gives governments a better negotiating position vis-à-vis banks. The fact that large international banks cannot be subjected to the special resolution regime due to the lack of international agreements took up much of the open discussion. Experience with UBS in Switzerland and Fortis in Belgium and the Netherlands has shown that a legal framework for multinational banks is urgently needed.

Recapitalization in Theory and Practice

The second day of the workshop was dedicated to the issue of bank recapitalization. Viral Acharya (New York University, Stern School of Business) addressed the links between bank bailouts and sovereign credit risk in his lecture "A Pyrrhic Victory? – The Ultimate Cost of Bank Bailouts." The speaker analyzed these links in a theoretical model and then tested their implications empirically in a next step.

Immediately prior to the implementation of rescue packages, CDS prices for bank bonds increased dramatically whereas they remained nearly constant for government bonds. When the rescue packages were concluded, CDS prices rose markedly for government bonds but fell for bank bonds. Soon after that, both sovereign and financial sector spreads started moving in tandem. This means that government intervention not only created long-term incentive problems but also caused government refinancing conditions to deteriorate substantially. The way Acharya sees it, it is wrong to neglect these short-term costs in assessing the cost of bailouts.

Discussant Isabel Schnabel (University of Mainz, Max Planck Institute for Research on Collective Goods, Bonn, and Centre for Economic Policy Research) agreed with Acharya on this last issue, but criticized that the links between financial sector risk and sovereign risk are much more complex than presented in the empirical analysis. She sees the increase in sovereign CDS prices as stemming partly from fiscal measures that are not connected to the rescue packages, and the method applied in the paper does not take the causality problem into account. If sovereign risk increases, financial sector solvency is affected in two ways. On the one hand, the value of their government bonds declines; on the other hand, higher sovereign risk makes a future bailout by government less likely. Consequently, the CDS prices of bank bonds will rise. Conversely, problems in the financial sector raise sovereign risk if investors consider it very likely that the government will implement a rescue package. Furthermore, Schnabel commented that a more precise analysis of international aspects would be useful.

When many governments were putting together rescue packages in fall 2008, they were under great time pressure and had to improvise. But if one could devise a basic design for recapitalization policy, what would it look like? This question might appear purely hypothetical now that all rescue packages have been passed. But it makes sense to think through this problem from various angles if similar crises arise in the future. Philipp Schnabl (New York University, Stern School of Business) presented the results of such a research project in his lecture "Efficient Recapitalization," which is based on a paper written jointly with Thomas Philippon (New York University, Stern School of Business).

In the wake of a financial crisis, the economy may be facing a debt overhang problem. In such a situation, it is not possible for banks to finance valuable new projects because the payment obli-

gations from existing debt are so high that they cannot actually profit from financing those projects. This means that socially valuable projects that should be carried out for reasons of efficiency would not be realized because of a conflict of interests between investors. This situation is referred to as a debt overhang. How can the public sector best solve the debt overhang problem? And how should recapitalization policy be designed?

The key findings of the authors are: If banks are required to participate in the recapitalization program, the form of intervention is irrelevant – the government can make direct equity injections in banks, buy up risky assets or guarantee the banks' debts. All three measures involve the same costs. If, on the other hand, participation in the program is voluntary and the private sector is better informed about the quality of the assets, then a direct equity investment is preferable, as the public sector faces a self-selection problem (the banks with the lowest-quality assets will take part in the program). In this situation, a tradeoff exists between the benefits of financing desirable new projects and the adverse selection of banks with especially low asset quality. Schnabl concluded that under asymmetric information, direct equity investment and compulsory participation resolve this tradeoff more effectively than debt guarantees or the purchase of risky assets.

Discussant Arnoud W. A. Boot (University of Amsterdam and Centre for Economic Policy Research) emphasized that the authors succeeded in developing a model framework that allows making a consistent assessment of the effectiveness of restructuring measures. He suggested that the authors analyze in more depth the link between the information problem – banks are better put to judging the quality of their portfolios than the state – and the question of voluntary or compulsory participation in restructuring programs.

In his lecture "Managing a Banking Crisis – The Swedish Way," Peter Englund (Stockholm School of Economics) gave insights into the resolution of the Swedish banking crisis of 1992, when he was a member of the committee established by government to resolve the banking crisis.

The precrisis period was characterized by a phase of deregulation and capital market liberalization followed by a credit bubble and its bursting in 1992. At the time, there was neither a regulatory framework in place to deal with banking crises, nor were any particular strategies available. At the beginning of the crisis, some banks were recapitalized by government or were nationalized, but when the crisis reached its peak, government shifted to a policy of blanket guarantees followed by severe and efficient restructuring measures in a next stage. The main features of restructuring were: resolution by an independent agency, stringent market assessment of assets and the establishment of bad banks to which the impaired assets were transferred. Englund strongly emphasized the idiosyncratic nature of the Swedish case. In summarizing, he underscored that the authorities in charge gave top priority to the rapid implementation of restructuring measures that fully recognized losses; they accepted the short-term negative cyclical consequences of such a policy.

Discussant Goetz von Peter (BIS) compared the resolution of the Nordic banking crisis with that of the current crisis. According to von Peter's assessment, the Nordic banks had been treated much more strictly than those during the current crisis, in which

governments give higher priority to supporting aggregate demand.

A recurrent topic during the workshop was the poorly defined concept of "systemically important" financial institutions. Experts frequently postulate that the degree of a bank's interconnectedness plays an important role in determining its systemic importance. In his contribution "Measuring Systemic Risk: A Network Perspective," Rama Cont (Columbia University and Centre national de la recherche scientifique) presented a network model with which he constructed an index of the systemic importance of banks using data from Brazil.

Discussant Helmut Elsinger (OeNB) focused on the problem of network models being well suited to identifying systemically relevant banks at a particular point in time, but (because they are static) being unsuitable for forecasts. The impact on the network cannot be predicted if the regulatory framework changes.

Lessons from the Workshop: Is there a Need for Reform in Austria?

The workshop contributions highlighted two main points. The academic literature mainly focused on finding ex ante solutions to the too-big-to-fail problem by proposing procedures that minimize the probability of default. The costs and benefits of all of these mechanisms are controversial. The only thing that all experts agree on is that in a market economy, banks that are too big to fail represent an anomaly that must be remedied.

Even if problems can be largely eliminated ex ante, however, there is still a need for a suitable mechanism that provides for an economically sensible way of restructuring financial institutions without requiring taxpayers to bail them out a priori. A legal framework such as the special resolution regime for banks in the U.K. could certainly serve as such a model. The current legal situation in Austria could certainly be improved.[6]

The workshop contributions suggest a reform that would allow recapitalization measures, restructuring measures and bank insolvencies to be handled within a single, uniform framework.

To begin with, regulators would have to be endowed with rights similar to the "prompt corrective action" mandate in the U.S. that would give them the option of converting debt, making margin calls and temporarily prohibiting dividend payments.

A reform of insolvency procedures should be consistent with the principles of value maximization, incentive compatibility and the preservation of the priority of claims. Such a procedure has to solve the allocation problem by canceling the debt of the insolvent bank, making the creditors the new owners and shifting the decision of what is to happen to the assets of the insolvent bank to the new owner. A procedure that accommodates these elements allows for banks to fail without triggering a bank run, a domino effect or a debt overhang. The workshop showed that economic research holds in store numerous useful ideas that are well suited to supporting a proper reform process.

---

[6] The option of receivership has hardly been invoked in the past decades. Banks that had run into difficulties were liquidated rather than recapitalized. As a rule, bankruptcy proceedings take over ten years.

Annex of Tables

Annex of Tables

Cutoff date for data: November 18, 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

Exchange Rates

	2006	2007	2008	2009	2007	2008	2009	2010
	Year				1st half			
Period average (per EUR 1)								
U.S. dollar	1.26	1.37	1.47	1.39	1.33	1.53	1.33	1.33
Japanese yen	146.06	161.25	152.35	130.27	159.61	160.56	127.27	121.53
Pound sterling	0.68	0.68	0.80	0.89	0.67	0.78	0.89	0.87
Swiss franc	1.57	1.64	1.59	1.51	1.63	1.61	1.51	1.44
Czech koruna	28.34	27.76	24.96	26.45	28.15	25.19	27.15	25.73
Hungarian forint	264.13	251.32	251.74	280.54	250.29	253.66	289.99	271.64
Polish zloty	3.90	3.78	3.52	4.33	3.84	3.49	4.47	4.00
Slovak koruna[1]	37.21	33.78	31.27	×	34.05	32.22	×	×
Slovenian tolar[1]	239.60	×	×	×	×	×	×	×

Source: Thomson Reuters.

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

Key Interest Rates

	2006	2007		2008		2009		2010
	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30
End of period, %								
Euro area	3.50	4.00	4.00	4.00	2.50	1.00	1.00	1.00
U.S.A.	5.25	5.25	4.25	2.00	0.25	0.25	0.25	0.25
Japan	0.280	0.610	0.460	0.570	0.100	0.110	0.094	0.096
United Kingdom	5.00	5.50	5.50	5.00	2.00	0.50	0.50	0.50
Switzerland[1]	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	0.00–0.75
Czech Republic	2.50	2.75	3.50	3.75	2.25	1.50	1.00	0.75
Hungary	8.00	7.75	7.50	8.50	10.00	9.50	6.25	5.25
Poland	4.00	4.50	5.00	6.00	5.00	3.50	3.50	3.50
Slovak Republic[2]	4.75	4.25	4.25	4.25	2.50	×	×	×
Slovenia[3]	3.75	×	×	×	×	×	×	×

Source: Eurostat, Thomson Reuters, national sources.

[1] SNB target range for three-month LIBOR.
[2] From 2009 onwards: see euro area.
[3] From 2007 onwards: see euro area.

Table A3

Short-Term Interest Rates

	2006	2007	2008	2009	2007	2008	2009	2010
	Year				1st half			
	Three-month rates, period average, %							
Euro area	3.08	4.28	4.63	1.23	3.94	4.67	1.67	0.67
U.S.A.	5.20	5.30	2.92	0.69	5.36	3.01	1.05	0.35
Japan	0.31	0.73	0.85	0.59	0.63	0.85	0.66	0.42
United Kingdom	4.80	5.95	5.49	1.22	5.61	5.79	1.72	0.68
Switzerland	1.51	2.55	2.57	0.37	2.32	2.79	0.45	0.21
Czech Republic	2.30	3.10	4.04	2.19	2.67	4.07	2.52	1.41
Hungary	7.00	7.75	8.87	8.64	7.95	8.18	9.64	5.61
Poland	4.21	4.74	6.36	4.42	4.32	6.12	4.63	3.99
Slovak Republic[1]	4.32	4.34	4.15	×	4.34	4.31	×	×
Slovenia[1]	3.58	×	×	×	×	×	×	×

Source: Bloomberg, Eurostat, Thomson Reuters.

[1] *From 1 January 2007 (Slovenia) and 1 January 2009 (Slovak Republic): see euro area.*

Table A4

Long-Term Interest Rates

	2006	2007	2008	2009	2007	2008	2009	2010
	Year				1st half			
	Ten-year rates, period average, %							
Euro area	3.83	4.31	4.24	3.71	4.23	4.26	3.79	3.45
U.S.A.	4.88	4.80	4.22	4.07	4.90	4.47	3.81	4.49
Japan	1.74	1.67	1.49	1.34	1.70	1.50	1.36	1.30
United Kingdom	4.45	5.00	4.49	3.66	4.97	4.78	3.54	3.87
Switzerland	2.52	2.93	2.90	2.20	2.82	3.14	2.30	1.81
Czech Republic	3.80	4.30	4.63	4.84	4.05	4.74	4.98	4.14
Hungary	7.12	6.74	8.24	9.12	6.77	7.95	10.31	7.29
Poland	5.23	5.48	6.07	6.12	5.27	6.02	6.08	5.85
Slovak Republic	4.41	4.49	4.72	4.71	4.35	4.52	4.87	3.95
Slovenia	3.85	4.53	4.61	4.38	4.43	4.51	4.75	3.90

Source: Eurostat, national sources.

Table A5

Corporate Bond Spreads

	2006	2007	2008	2009	2007	2008	2009	2010
	Year				1st half			
	Period average, percentage points							
	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	0.21	0.53	0.97	0.01
BBB	1.24	1.26	3.55	4.65	1.00	2.58	6.31	2.06
	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	0.43	1.53	2.50	0.70
BBB	1.03	1.50	4.16	4.51	1.12	3.10	6.05	2.18

Source: Merrill Lynch via Thomson Reuters.

Table A6

Stock Indices[1]

	2006	2007	2008	2009	2007	2008	2009	2010
	Year				1st half			
	Period average							
Euro area: EURO STOXX	357	416	314	234	416	359	210	265
U.S.A.: S&P 500	1,311	1,477	1,221	948	1,461	1,362	851	1,129
Japan: Nikkei 225	16,124	16,984	13,592	9,348	17,521	13,595	8,627	10,450
Austria: ATX	3,938	4,619	3,358	2,131	4,636	4,030	1,804	2,529
Czech Republic: PX50	1,480	1,776	1,359	962	1,737	1,580	818	1,183
Hungary: BUX	22,528	26,086	19,744	16,043	24,844	22,760	12,692	22,531
Poland: WIG	43,100	58,988	40,681	32,004	57,550	47,246	26,771	40,894
Slovak Republic: SAX16	403	422	431	318	410	450	338	230
Slovenia: SBI TOP	1,206	2,160	1,683	975	1,799	2,020	917	948

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 = 1000, PX50: April 6, 1994 = 1000, BUX: January 2, 1991 = 1000, WIG: April 16, 1991 = 1000, SAX16: September 14, 1993 = 100, SBI TOP: March 31, 2006 = 1000.

Table A7

Gross Domestic Product

	2006	2007	2008	2009	2007	2008	2009	2010
	Year				1st half			
	Annual change in %, period average							
Euro area	3.0	2.8	0.4	−4.1	0.6	0.2	−1.3	0.7
U.S.A.	2.7	1.9	0.0	−2.6	0.5	−0.1	−0.7	0.7
Japan	2.0	2.4	−1.2	−5.2	0.8	−0.3	−1.1	0.8
Austria	3.6	3.7	2.2	−3.9	0.8	0.9	−1.6	0.6
Czech Republic	6.8	6.1	2.5	−4.1	6.6	3.3	−4.3	2.0
Hungary	4.0	1.0	0.6	−6.3	1.5	2.0	−7.1	0.5
Poland	6.2	6.8	5.1	1.7	7.0	6.3	0.9	3.2
Slovak Republic	8.5	10.6	6.2	−4.7	8.9	8.4	−5.6	4.7
Slovenia	5.9	6.9	3.7	−8.1	7.2	6.1	−8.9	0.6

Source: Eurostat, national sources.

Current Account

	2006	2007	2008	2009	2007	2008	2009	2010
	Year				1st half			
	% of GDP, cumulative							
Euro area	0.4	0.4	−0.8	−0.6	0.1	−1.1	−1.4	−1.1
U.S.A.	−6.0	−5.2	−4.9	−3.0	−5.6	−5.1	−2.9	−3.7
Japan	3.9	4.8	3.2	2.8	4.9	4.1	2.5	..
Austria	3.0	3.4	3.6	2.5	1.2	5.7	3.3	2.9
Czech Republic	−2.4	−3.2	−0.6	−1.1	−1.2	1.2	−0.4	−0.6
Hungary	−7.6	−6.9	−7.4	−0.5	−7.7	−6.0	−1.0	1.9
Poland	−2.7	−4.7	−4.8	−2.2	−4.9	−5.1	−1.6	−1.6
Slovak Republic	−7.0	−5.4	−6.6	−3.4	−3.8	−6.6	−3.7	−2.0
Slovenia	−2.5	−4.8	−6.7	−1.5	−2.5	−5.6	−1.4	−0.9

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.

Inflation

	2006	2007	2008	2009	2007	2008	2009	2010
	Year				1st half			
	Annual change in %, period average							
Euro area	2.2	2.1	3.3	0.3	1.9	3.5	0.6	1.3
U.S.A.	3.2	2.8	3.6	−0.5	2.5	4.2	−0.6	2.1
Japan	0.3	0.0	1.4	−1.4	−0.1	1.2	−0.6	−1.1
Austria	1.7	2.2	3.2	0.4	1.8	3.5	0.6	1.5
Czech Republic	2.1	3.0	6.3	0.6	2.1	7.1	1.2	0.7
Hungary	4.0	7.9	6.0	4.0	8.7	6.8	3.1	5.5
Poland	1.3	2.6	4.2	4.0	2.1	4.4	3.9	2.9
Slovak Republic	4.3	1.9	3.9	0.9	1.9	3.7	1.7	0.3
Slovenia	2.5	3.8	5.5	0.9	2.9	6.4	1.1	2.1

Source: Eurostat.

The Real Economy in Austria

Financial Investment of Households[1]

	2006	2007	2008	2009	2007	2008	2009	2010
	Year				1st half			
	Transactions, EUR million							
Currency and deposits[2]	9,430	13,721	13,483	9,399	8,104	8,411	7,469	2,202
Securities (other than shares)[3]	1,483	3,808	5,400	−226	1,820	2,568	−367	177
Shares (other than mutual fund shares)	2,359	−50	1,340	941	−417	788	901	527
Mutual fund shares	2,078	−341	−4,670	943	630	−1,692	−277	860
Insurance technical reserves	5,197	3,837	2,865	4,507	2,660	1,872	2,727	2,579
Total financial investment	20,547	20,975	18,418	15,564	12,797	11,947	10,453	6,345

Source: OeNB.

[1] Including nonprofit institutions serving households.
[2] Including loans and other assets.
[3] Including financial derivatives.

Household[1] Income, Savings and Credit Demand

	2006	2007	2008	2009
	Year			
	Year-end, EUR billion			
Net disposable income	154.3	162.0	167.7	166.4
Savings	16.2	18.8	19.8	18.5
Saving ratio in %[2]	10.4	11.6	11.8	11.1
MFI loans to households	119.2	126.0	132.2	132.6

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

[1] Including nonprofit institutions serving households.
[2] Saving ratio = savings / (disposable income + increase in accrued occupational pension benefits).

Financing of Nonfinancial Corporations

	2006	2007	2008	2009	2007	2008	2009	2010[1]
	Year				1st half			
	Transactions, EUR million							
Securities (other than shares)	2,704	4,595	2,954	6,166	1,868	584	3,232	2,148
Loans	7,659	14,449	13,390	1,725	8,908	8,309	−837	−820
Shares and other equity[2]	8,679	38,552	4,874	277	8,224	2,913	498	1,634
Other accounts payable	440	1,573	1,546	1,333	929	1,554	521	514
Total debt	19,482	59,169	22,764	9,501	19,929	13,360	3,414	3,477

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	2007	2008	2009	2010
	Year				1st half			
	EUR million							
Default liabilities	2,569	2,441	2,969	4,035	1,151	1,110	1,978	1,587
	Number							
Defaults	3,084	3,023	3,270	3,741	1,548	1,619	1,904	1,724

Source: Kreditschutzverband von 1870.

Table A14

Selected Financial Ratios of the Manufacturing Sector

	2006	2007	2008	2009
	Median, %			
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 Austria[1]

Total Assets and Off-Balance-Sheet Operations

	2006	2007		2008		2009		2010
	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30
	End of period, EUR million							
Total assets on an unconsolidated basis	798	859	900	972	1,069	1,058	1,034	1,038
of which: total domestic assets	*504*	*519*	*549*	*582*	*693*	*693*	*696*	*686*
total foreign assets	*294*	*341*	*351*	*390*	*377*	*365*	*338*	*352*
Interest rate contracts	1,361	1,450	1,690	1,513	1,723	1,755	1,836	2,067
Foreign exchange derivatives	280	369	347	394	507	454	419	492
Other derivatives	20	21	19	22	28	30	25	27
Derivatives total	1,660	1,840	2,056	1,929	2,257	2,239	2,281	2,587
Total assets on a consolidated basis	928	1,037	1,073	1,162	1,176	1,159	1,140	1,194

Source: OeNB.

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

Profitability on an Unconsolidated Basis

	2007	2008	2009	2010	2006	2007	2008	2009
	1st half				Year			
	End of period, EUR million							
Net interest income	3,568	3,978	4,396	4,584	7,170	7,399	8,248	8,777
Income from securities and participating interests	1,387	1,470	1,492	1,575	2,878	3,521	7,193	3,327
Net fee-based income	2,453	2,157	1,810	1,970	4,301	4,710	4,218	3,603
Net profit/loss on financial operations	361	−55	338	454	688	290	−812	486
Other operating income	758	826	737	766	1,581	1,592	1,710	1,653
Operating income	8,527	8,376	8,773	9,348	16,618	17,512	20,557	17,846
Staff costs	2,654	2,870	2,870	2,839	5,451	5,468	5,776	5,697
Other administrative expenses	1,800	1,880	1,839	1,888	3,516	3,703	3,952	3,765
Other operating expenses	843	757	734	807	1,828	1,678	1,688	1,056
Total operating expenses	5,297	5,507	5,443	5,534	10,795	10,849	11,416	11,077
Operating profit/loss	3,230	2,869	3,331	3,813	5,823	6,663	9,141	6,769
Net risk provisions from credit business[1]	1,257	1,867	3,043	3,404	1,845	2,012	4,201	4,422
Net risk provisions from securities business[1]	−404	−180	421	−43	−2,875	−430	2,801	4,090
Annual surplus[1]	4,702	3,765	2,536	2,974	3,957	4,787	1,891	37
Return on assets[1,2,3]	0,51	0,40	0,24	0,29	0,50	0,53	0,18	0
Return on equity (tier 1 capital)[1,2,3]	7,4	6,4	3,7	4,1	9,5	8,2	3,0	0,1
Interest income to gross income (%)	42	48	50	49	43	42	40	49
Operating expenses to gross income (%)	62	66	62	59	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.*

Profitability on a Consolidated Basis

	2007	2008	2009	2010	2006	2007	2008	2009
	1st half				Year			
	End of period, EUR million							
Operating income[1]	13,929	14,481	17,095	15,609	23,993	28,093	27,982	33,000
Operating expenses[2]	8,184	8,054	7,794	7,950	14,758	17,041	16,530	15,502
Operating profit/loss	5,745	5,617	8,450	6,619	9,235	11,052	7,855	15,620
Result before minority interests	4,042	3,805	2,727	2,069	8,696	8,015	1,100	1,530
Return on assets[3, 4]	0.92	0.69	0.47	0.36	0.98	0.79	0.09	0.18
Return on equity (tier 1 capital)[3, 4]	21.0	15.2	9.7	6.3	24.0	18.2	2.0	3.6
Interest income to gross income (%)	61	63	57	64	62	64	69	59
Operating expenses to gross income (%)[5]	59	61	51	58	62	61	72	53

Source: OeNB.

[1] Netting the subitems "other operating income" and "other operating expenses" results in values that differ from those published in earlier reports.

[2] As from 2008 on, operating expenses refer to staff costs and other administrative expenses only.

[3] 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.

[4] All figures represent the ratio of total operating expenses to total operating income.

[5] Retrospective modified due to a change of calculation.

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

Sectoral Distribution of Loans

	2006	2007		2008		2009		2010
	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30
	End of period, EUR million							
Nonfinancial corporations	116,078	118,012	121,992	127,711	133,608	131,971	130,155	131,695
of which: foreign currency-denominated loans	12,586	10,501	9,884	10,667	12,134	11,263	11,055	12,101
Households[1]	111,404	114,998	117,601	119,778	124,221	122,378	124,081	128,221
of which: foreign currency-denominated loans	34,266	33,383	32,279	34,758	38,182	36,271	36,127	38,317
General government	28,662	27,296	26,303	26,795	25,073	25,993	26,116	27,326
of which: foreign currency-denominated loans	1,862	1,489	1,603	1,736	1,652	1,709	1,742	2,797
Other financial intermediaries	22,001	20,758	21,646	22,032	25,770	25,251	24,567	24,503
of which: foreign currency-denominated loans	3,353	3,142	2,930	3,079	3,529	3,381	3,398	3,785
Foreign nonbanks	80,985	88,217	103,983	113,057	125,694	121,922	117,726	120,890
of which: foreign currency-denominated loans	31,378	33,961	38,027	39,182	42,600	38,319	36,100	40,274
Nonbanks total	359,129	369,282	391,524	409,372	434,366	427,515	422,645	432,637
of which: foreign currency-denominated loans	83,445	82,476	84,723	89,421	98,096	90,943	88,422	97,275
Banks	230,320	264,854	263,344	313,897	363,123	353,198	333,865	334,802
of which: foreign currency-denominated loans	62,467	70,077	69,652	84,560	108,405	96,271	83,728	76,629

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.

Foreign Currency-Denominated Claims on Domestic Non-MFIs

	2006	2007		2008		2009		2010
	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30
	End of period, % of total foreign currency-denominated claims on domestic non-MFIs[1]							
Swiss franc	90.8	90.0	88.7	88.8	86.4	86.4	86.3	85.5
Japanese yen	2.8	2.8	3.6	3.3	5.5	5.4	5.4	5.9
U.S. dollar	55.0	5.4	5.1	6.1	7.0	6.7	6.7	7.2
Other foreign currencies	0.9	1.8	2.6	1.8	1.1	1.5	1.6	1.4

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.*

Loan Quality

	2006	2007		2008		2009		2010
	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30
	End of period, % of claims							
Specific loan loss provisions for loans to nonbanks (unconsolidated)	2.9	2.7	2.4	2.3	2.2	2.5	2.8	3.1
Specific loan loss provisions for loans to nonbanks (consolidated)[1]	2.7	2.6	2.4	2.4	2.4	2.9	3.5	3.9
Nonperforming loans (unconsolidated)	2.1	×	1.7	×	2.0	×	2.8	×
	End of period, % of tier 1 capital							
Nonperforming loans (unconsolidated)	38.9	×	25.5	×	31.5	×	39.7	×

Source: OeNB.

[1] *Estimate.*

Market Risk[1]

	2006	2007		2008		2009		2010
	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30
	End of period, EUR million and % resp.							
Interest rate risk								
Basel ratio for interest rate risk, %[2]	5.6	5.2	4.5	4.5	3.9	3.7	3.7	3.9
Capital requirement for the position risk of interest rate instruments in the trading book	737.3	980.0	1.082.6	857.0	953.3	911.3	780.9	839.8
Exchange rate risk								
Capital requirement for open foreign exchange positions	75.2	89.1	74.1	99.7	110.3	89.1	75.2	83.1
Equity price risk								
Capital requirement for the position risk of equities in the trading book	101.0	211.6	180.6	204.7	186.9	166.3	176.9	183.0

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.

Liquidity Risk

	2006	2007		2008		2009		2010
	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30
	End of period, %							
Short-term loans to short-term liabilities	66.2	70.1	64.0	69.8	67.0	74.2	72.5	71.2
Short-term loans and other liquid assets to short-term liabilities	115.0	118.7	109.9	112.7	109.0	125.0	124.8	122.9
Liquid resources of the first degree: 5% quantile of the ratio between available and required liquidity of degree 1[1]	152.4	134.4	140.0	140.2	149.4	143.3	139.9	146.5
Liquid resources of the second degree: 5% quantile of the ratio between available and required liquidity of degree 1[1]	111.5	114.1	110.2	113.1	113.5	116.8	110.8	112.4

Source: OeNB.

[1] Short-term loans and short-term liabilities (up to 3 months against banks and non-banks). Liquid assts (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 surpassed by 95% of banks on the respective reporting date.

Table A23

Solvency

	2006	2007		2008		2009		2010[1]
	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30
	End of period, eligible capital and tier 1 capital, respectively, as a percentage of risk-weighted assets							
Consolidated capital adequacy ratio	11.3	12.1	11.6	11.0	11.0	12.1	12.8	13.3
Consolidated tier 1 capital ratio	7.8	8.5	8.1	7.7	7.7	8.7	9.3	9.8

Source: OeNB.

[1] *The data of June 30, 2010, were adjusted for a one-off effect.*

Note: Owing to the transition to Basel II, the method of calculation of the capital ratio and the tier 1 capital ratio used from the Financial Stability Report 16 onwards differs from the method used previously. The denominator of both ratios is given by the sum of all regulatory capital requirements multiplied by the factor 12.5. The numerator of the capital ratio is given by tier 1 and tier 2 capital less deduction items (eligible own funds) plus the part of tier 3 capital not exceeding the capital requirement for position risk. The numerator of the tier 1 capital ratio is given by tier 1 capital less deduction items (eligible tier 1 capital). The sum of all capital requirements consists of the capital requirements for credit risk, position risk, settlement risk, operational risk and the transition to Basel II as well as the other capital requirements.

Table A24

Exposure to CESEE

	2006	2007		2008		2009		2010
	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30
	End of period, EUR million							
Total assets of subsidiaries[1]	158,736	201,394	231,742	261,400	267,484	256,842	254,356	264,517
of which: NMS-2004[2]	*92,805*	*103,482*	*115,377*	*132,770*	*131,809*	*127,693*	*126,916*	*130,700*
NMS-2007[3]	*26,095*	*32,059*	*36,776*	*39,855*	*40,679*	*41,044*	*40,488*	*39,776*
SEE[4]	*26,303*	*41,068*	*43,876*	*45,559*	*46,745*	*47,292*	*48,676*	*49,324*
CIS[5]	*13,533*	*24,786*	*35,713*	*43,216*	*48,251*	*40,813*	*38,285*	*44,717*
Exposure according to BIS in total[6]	x	168,848	190,775	191,672	199,493	186,232	204,228	212,499
of which: NMS-2004[2]	*x*	*86,577*	*96,249*	*105,536*	*111,065*	*103,289*	*112,538*	*117,042*
NMS-2007[3]	*x*	*28,491*	*32,608*	*33,427*	*34,034*	*33,704*	*33,694*	*33,337*
SEE[4]	*x*	*34,800*	*38,520*	*27,301*	*27,928*	*27,300*	*40,409*	*40,901*
CIS[5]	*x*	*18,980*	*23,398*	*25,408*	*26,466*	*21,939*	*17,586*	*21,219*
Total indirect lending to nonbanks[7]	x	x	x	171,337	175,724	172,256	169,178	176,481
of which: NMS-2004[2]	*x*	*x*	*x*	*83,028*	*82,466*	*82,787*	*81,821*	*83,186*
NMS-2007[3]	*x*	*x*	*x*	*25,854*	*26,887*	*26,547*	*27,046*	*27,361*
SEE[4]	*x*	*x*	*x*	*29,004*	*31,192*	*32,344*	*32,021*	*33,458*
GUS[5]	*x*	*x*	*x*	*33,451*	*35,179*	*30,578*	*28,290*	*32,476*
Total direct lending[8]	x	x	x	42,608	45,808	45,655	44,995	45,649
of which: NMS-2004[2]	*x*	*x*	*x*	*25,059*	*25,159*	*24,694*	*24,445*	*24,521*
NMS-2007[3]	*x*	*x*	*x*	*5,046*	*6,370*	*6,840*	*6,562*	*6,687*
SEE[4]	*x*	*x*	*x*	*8,964*	*10,470*	*10,824*	*10,611*	*10,620*
GUS[5]	*x*	*x*	*x*	*3,539*	*3,809*	*3,297*	*3,377*	*3,821*

Source: OeNB.

[1] *Excluding Yapi ve Kredi Bankasi (not fully consolidated by parent bank).*
[2] *"NMS-2004": Estonia (EE), Latvia (LV), Lithuania (LT), Poland (PL), Slovakia (SK), Slovenia (SI), Czech Republic (CZ) and Hungary (HU).*
[3] *"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 according to VEA.*
[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.

Profitability of Austrian Subsidiaries[1] in CESEE

	2007	2008	2009	2010	2006	2007	2008	2009
	1st half				Year			
	End of period, EUR million							
Operating income	4,815	6,515	6,638	6,585	6,524	10,178	14,102	13,398
of which: net interest income	3,145	4,301	4,253	4,584	4,206	6,748	9,231	8,696
Securities and investment earnings	×	58	40	34	×	×	103	50
Fee and commission income	1,353	1,658	1,406	1,437	1,898	2,847	3,432	2,916
Trading income	×	40	785	-42	×	×	46	1,238
Other income	316	458	153	572	420	583	1,291	499
Operating expenses	2,605	3,353	3,122	3,177	3,697	5,495	6,961	6,267
of which: personnel expenses	×	1,551	1,401	1,400	×	×	3,200	2,739
Other expenses	×	1,802	1,720	1,778	×	×	3,761	3,529
Operating profit/loss	2,209	3,161	3,516	3,408	2,826	4,683	7,141	7,131
Allocation to provisions and impairments	×	636	2,024	1,983	×	×	2,277	4,821
Result after tax	1,512	2,065	1,190	1,117	1,730	3,104	4,219	1,767
Return on assets[2]	1.7%	1.7%	0.9%	0.9%	1.3%	1.6%	1.8%	0.7%
Provisions[3]	2.6%	3.7%	3.9%	6.2%	2.4%	2.6%	2.9%	4.9%

Source: OeNB.

[1] Excluding Yapi ve Kredi Bankasi (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.

Key Indicators of Austrian Insurance Companies[1]

	2008		2009		2010	Change
	June	Dec.	June	Dec.	June	% change June 2010 (y-o-y)
	End of period, EUR million					
Business and profitability						
Premiums	8,371	16,180	8,362	16,381	8,510	1.8%
Expenses for claims and insurers benefit	5,568	11,608	5,869	12,348	5,757	−1.9%
Underwriting results	131	−119	96	132	241	151.0%
Profit from investments	1,194	2,370	1,245	2,729	1,589	27.6%
Profit from ordinary activities	333	411	349	744	552	58.2%
Total Assets	91,570	93,911	96,081	99,227	102,625	6.81%
Investments						
Total Investments	85,244	87,698	90,120	92,260	95,541	6.02%
of which: debt securities	34,988	35,209	36,376	36,397	37,062	1.89%
of which: stocks and other equity securities[2]	11,182	12,531	12,728	12,811	12,621	−0.84%
of which: real estate	4,781	5,138	5,188	5,246	5,193	0.10%
Investments for unit-linked and index-linked life insurance	9,291	9,319	10,513	12,822	14,477	37.71%
Exposure versus domestic banks	17,478	17,423	17,355	17,570	17,338	−0.10%
Custody account claims on deposits on reinsurers	1,299	1,272	1,250	1,218	1,229	−1.68%
Risk Capacity (Solvency Ratio)	×	339.7	×	336.3	×	×

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 Dec. 31	2007 June 30	Dec. 31	2008 June 30	Dec. 31	2009 June 30	Dec. 31	2010 June 30
	End of period, EUR million							
Domestic securities	58,332	60,313	58,920	54,428	48,777	49,104	48,765	50,589
of which: debt securities	*17,632*	*15,892*	*14,938*	*13,774*	*14,601*	*16,324*	*16,013*	*16,603*
stocks and other equity securities	*3,930*	*4,220*	*3,812*	*3,527*	*1,473*	*2,144*	*2,863*	*2,813*
Foreign securities	110,528	114,007	106,726	94,487	78,655	80,067	89,845	93,102
of which: debt securities	*70,280*	*71,374*	*66,473*	*61,809*	*57,598*	*57,548*	*61,961*	*63,259*
stocks and other equity securities	*25,186*	*26,231*	*23,723*	*16,598*	*8,899*	*10,064*	*12,663*	*12,870*
Net asset value	168,860	174,320	165,646	148,915	127,432	129,171	138,610	143,690
of which: retail funds	*120,402*	*124,666*	*117,864*	*103,885*	*82,804*	*80,383*	*85,537*	*88,228*
institutional funds	*48,458*	*49,654*	*47,782*	*45,030*	*44,628*	*48,788*	*53,073*	*55,462*
Consolidated net asset value	140,829	144,550	137,092	124,129	105,620	107,076	115,337	120,527
changed by: redemptions and sales[1]	958	1,825	−4,272	−5,060	−7,040	−768	2,399	2,137
distributed earnings[1]	2,326	1,347	2,499	1,070	1,965	930	1,767	705
Revaluation adjustments and income[1]	7,646	3,243	−687	−6,832	−9,505	3,153	7,629	3,759

Source: OeNB.

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

[2] *2 Change in the consolidated net asset vallue of Austrian mutual funds by redemptions and sales (net balance of shares in mutual funds issued and bought back).*

Table A28

Structure and Profitability of Austrian Fund Management Companies

	2006 Dec. 31	2007 June 30	Dec. 31	2008 June 30	Dec. 31	2009 June 30	Dec. 31	2010 June 30
	End of period, EUR million							
Total assets	537	510	544	453	504	546	642	639
Operating profit[1]	69	116	62	80	9	45	60	64
Net commissions and fees earned[1]	150	199	155	169	100	124	134	149
Administrative expenses[1,2]	87	90	103	96	100	88	97	96
Number of fund management companies	27	27	28	29	29	29	30	30
Number of reported funds	2,177	2,244	2,329	2,330	2,308	2,270	2,182	2,192

Source: OeNB.

[1] *All figures are semi-annual figures.*

[2] *Administrative expenses are calculated as the sum of personnel and material expenses.*

Note: HOAM.AT (the Home Accounting Module Austria of the OeNB) replaced ARTIS/TARGET from November 19, 2007. The data refer to the six-month period in each case.

Table A29

Assets Held by Austrian Pension Funds

	2006	2007		2008		2009		2010
	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30
	End of period, EUR million							
Domestic securities	10,742	10,901	10,773	10,650	9,705	10,415	11,721	12,482
of which: debt securities	*116*	*147*	*137*	*124*	*142*	*163*	*169*	*163*
mutual fund shares	*10,589*	*10,722*	*10,603*	*10,499*	*9,543*	*10,228*	*11,520*	*12,296*
other securities	*37*	*32*	*33*	*27*	*20*	*24*	*32*	*23*
Foreign securities	1,224	1,426	1,473	1,085	972	1,093	1,124	1,117
of which: debt securities	*73*	*91*	*140*	*96*	*111*	*182*	*138*	*148*
mutual fund shares	*1,113*	*1,299*	*1,321*	*980*	*851*	*879*	*932*	*944*
other securities	*38*	*36*	*12*	*16*	*10*	*32*	*54*	*25*
Deposits	173	270	282	449	790	664	539	318
Loans	93	124	158	157	154	185	182	153
Other assets	264	249	238	262	332	264	170	176
Total assets	12,496	12,970	12,924	12,592	11,936	12,621	13,734	14,245
of which: foreign currency	*555*	*601*	*620*	*462*	*312*	*373*	*448*	*424*

Source: OeNB.

Table A30

Assets Held by Austrian Severance Funds

	2006	2007		2008		2009		2010
	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30
	End of period, EUR million							
Total direct investment	295.6	415.5	598.3	832.7	1,062.2	1,125.0	883.7	906.5
of which: euro-denominated	*288.4*	*390.5*	*579.6*	*816.8*	*1,043.4*	*1,103.0*	*866.3*	*891.9*
accrued income claims from direct investment	*4.2*	*4.6*	*8.6*	*11.4*	*16.5*	*20.0*	*15.2*	*12.0*
Total indirect investment	832.5	949.3	1,023.8	1,019.7	1,076.4	1,339.0	1,946.3	2,278.0
of which: total of euro-denominated investment in mutual fund shares	*781.4*	*877.0*	*963.8*	*983.3*	*1,038.7*	*1,293.0*	*1,858.1*	*2,126.1*
total of foreign currency-denominated investment in mutual fund shares	*51.1*	*72.3*	*60.0*	*56.2*	*37.7*	*45.0*	*88.2*	*151.9*
Total assets assigned to investment groups	1,128.1	1,364.8	1,622.1	1,852.3	2,138.6	2,464.0	2,830.0	3,184.4
of which: foreign currency-denominated	*54.2*	*92.7*	*70.8*	*60.7*	*40.0*	*48.0*	*90.4*	*x*

Source: OeNB.

Note: Due to special balance sheet operations total assets assigned to investment groups deviate from the sum of total indirect investments.

Transactions and System Disturbances in Payment and Securities Settlement Systems

	2006	2007		2008		2009		2010
	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30	Dec. 31	June 30
	Number of transactions in million, value of transactions in EUR billion							
HOAM.AT								
Number	×	×	×	1.6	1.1	0.7	0.7	0.6
Value	×	×	×	2,360.2	4,363.5	4,535.2	4,769.3	4,949.6
System disturbances	×	×	×	1	4	1	4	4
Securities settlement systems								
Number	1.3	1.8	1.1	1.0	1.0	0.8	1.0	1.0
Value	181.5	330.0	269.8	255.4	247.0	181.2	184.1	230.1
System disturbances	0	0	0	0	0	0	0	0
Retail payment systems								
Number	232.0	237.8	253.9	255.0	272.9	272.2	302.1	298.5
Value	18.4	18.3	18.6	20.0	21.7	21.5	24.3	23.7
System disturbances	33	3	17	0	16	5	14	16
Participation in international payment systems								
Number	9.3	10.2	11.0	12.3	12.7	17.8	13.4	14.8
Value	766.6	868.9	1,077.5	997.2	997.5	675.7	549.2	593.6
System disturbances	3	1	0	0	0	0	0	0

Source: OeNB.

Note: HOAM.AT (the Home Accounting Module Austria of the OeNB) replaced ARTIS/TARGET from November 19, 2007. The data refer to the six-month period in each case.

Notes

List of Special Topics
Published in the Financial Stability Report Series

For further details on the following publications see *www.oenb.at*

Financial Stability Report 18

Recent Developments in the Austrian Banking System's Liquidity Situation and the International Regulatory Debate
Stefan W. Schmitz, Florian Weidenholzer

Investor Commitment Tested by Deep Crisis: Banking Development in Ukraine
Stephan Barisitz, Mathias Lahnsteiner

The Austrian Insurance Industry from a Financial Stability Perspective: An Analysis of the Period from 2002 to 2008
Gernot Ebner, Eva Ubl

Quantifying the Cyclicality of Regulatory Capital – First Evidence from Austria
Stefan Kerbl, Michael Sigmund

Financial Stability Report 19

From Stormy Expansion to Riding out the Storm: Banking Development in Kazakhstan
Stephan Barisitz, Mathias Lahnsteiner

Stress Testing Austrian Households
Nicolas Albacete, Pirmin Fessler

Effects of the Payment Services Act on the Austrian Financial Market
Barbara Freitag, Benedict Schimka

Assessing the Relevance of Austrian Investment Companies and Mutual Funds for Financial Stability
Stefan Kavan, Günther Sedlacek, Reinhardt Seliger, Eva Ubl

Periodical Publications
of the Oesterreichische Nationalbank

For further details on the periodical publications of the OeNB see *www.oenb.at*

Monetary Policy & the Economy   quarterly

This quarterly publication, issued both in German and English, offers analyses of current cyclical developments, medium-term macroeconomic forecasts and studies on central banking and economic policy topics. It also provides summary findings of macroeconomic workshops and conferences organized by the OeNB.

Focus on European Economic Integration   quarterly

The Focus on European Economic Integration (FEEI) is a channel for communicating the OeNB's ongoing research on Central, Eastern and Southeastern European (CESEE) countries, thus reflecting a strategic regional research priority of the OeNB. Contributions to the quarterly FEEI include peer-reviewed studies dealing primarily with macrofinancial and monetary integration as well as economic country analyses and cross-regional comparisons.

Statistiken – Daten & Analysen   quarterly

This publication contains brief reports and analyses focusing on Austrian financial institutions, cross-border transactions and positions as well as financial flows. The contributions are in German, with executive summaries of the analyses in English. The statistical part covers tables and explanatory notes on a wide range of macroeconomic, financial and monetary indicators (these indicators and others are also available online in both German and English). In addition, this series includes special issues on selected statistics topics published at irregular intervals.

Research Update   quarterly

The quarterly English-language research update is published only on the Internet and informs an international readership about selected findings, research topics and activities of the OeNB's Economic Analysis and Research Department. This publication addresses colleagues from other central banks or international institutions, economic policy researchers, decision makers and anyone with an interest in macroeconomics. Furthermore, the research update offers information on publications, studies or working papers as well as events (conferences, lectures and workshops).
For further details see *www.oenb.at/research.update*

Financial Stability Report   semiannual

Issued both in German and English, the Financial Stability Report contains first, a regular analysis of Austrian and international developments with an impact on financial stability and second, studies designed to provide in-depth insights into specific topics related to financial market stability.

Workshops – Proceedings of OeNB Workshops
three to four issues a year

The Proceedings of OeNB Workshops were introduced in 2004 and typically comprise papers presented at OeNB workshops at which national and international experts, including economists, researchers, politicians and journalists, discuss monetary and economic policy issues. Workshop proceedings are generally available in English only.

Working Papers   about ten papers a year

The OeNB's Working Paper series is designed to disseminate, and provide a platform for discussing, findings of OeNB economists or outside contributors on topics which are of special interest to the OeNB. To ensure the high quality of their content, the contributions are subjected to an international refereeing process.

Conference Proceedings of the Economics Conference   annual

The Economics Conference hosted by the OeNB is an international platform for exchanging views and information on monetary and economic policy as well as financial market issues. It convenes central bank representatives, economic policy-makers, financial market players, academics and researchers. The conference proceedings comprise all papers presented at the conference.

Conference Proceedings of the Conference
on European Economic Integration   annual

The OeNB's Conference on European Economic Integration (CEEI) focuses on Central, Eastern and Southeastern European issues and the ongoing EU enlargement process. The Conference Proceedings comprise contributions to the CEEI and are published in English by a renowned international publishing house.
For further details see *http://ceec.oenb.at*

Annual Report   annual

The Annual Report of the OeNB provides a broad review of Austrian monetary policy, economic conditions, new developments in the financial markets in general and in financial market supervision in particular as well as of the OeNB's changing responsibilities and its role as an international partner in cooperation and dialogue. It also contains the OeNB's financial statements, its Intellectual Capital Report and its Environmental Statement.

Addresses
of the Oesterreichische Nationalbank

	Postal address	Telephone/Fax/E-mail
Head Office		
Otto-Wagner-Platz 3	PO Box 61	Tel: (+43-1) 404 20-6666
1090 Vienna, Austria	1011 Vienna, Austria	Fax: (+43-1) 404 20-2399
Internet: *www.oenb.at*		E-mail: *oenb.info@oenb.at*

Branch Offices

Northern Austria Branch Office

Coulinstraße 28	PO Box 346	Tel: (+43-732) 65 26 11-0
4020 Linz, Austria	4021 Linz, Austria	Fax: (+43-732) 65 26 11-6399
		E-mail: *regionnord@oenb.at*

Southern Austria Branch Office

Brockmanngasse 84	PO Box 8	Tel: (+43-316) 81 81 81-0
8010 Graz, Austria	8018 Graz, Austria	Fax: (+43-316) 81 81 81-6799
		E-mail: *regionsued@oenb.at*

Western Austria Branch Office

Adamgasse 2	Adamgasse 2	Tel: (+43-512) 594 73-0
6020 Innsbruck, Austria	6020 Innsbruck, Austria	Fax: (+43-512) 594 73-6599
		E-mail: *regionwest@oenb.at*

Representative Offices

London Representative Office

Oesterreichische Nationalbank
48 Gracechurch Street, 5th floor
EC3V 0EJ London, United Kingdom

Tel: (+44-20) 7623-6446
Fax: (+44-20) 7623-6447

New York Representative Office

Oesterreichische Nationalbank
450 Park Avenue, Suite 1202
10022 New York, U.S.A.

Tel: (+1-212) 888-2334
Fax: (+1-212) 888-2515

Brussels Representative Office

Oesterreichische Nationalbank
Permanent Representation of Austria to the EU
Avenue de Cortenbergh 30
1040 Brussels, Belgium

Tel: (+32-2) 285 48-41, 42, 43
Fax: (+32-2) 285 48-48