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Financial Stability Report

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Editorial close: November 6, 2003

Executive Summary

Economic conditions and the outlook for the quarters ahead have improved since the second quarter of 2003. Among other factors, consumer and government spending as well as the stabilization of business investment helped fuel the economic upturn in the U.S.A., and there are increasing signs that this upswing is set to continue. Continued, albeit fairly moderate economic recovery is expected also for the euro area. However, the high U.S. current account deficit and the concomitant risk of exchange rate fluctuations represent a downside risk for the sustainability of growth. Nevertheless, the more positive economic outlook and investors' decreasing risk aversion have boosted financial markets, as reflected by a rise in stock prices. In line with the recovery of capital markets, the insurance industry both in Austria and across Europe largely stabilized as well. In the same vein, Austrian pension funds' investment performance also improved in the first half of 2003.

Although investment in capital market products has been continuously on the rise in recent years, the stock market still plays a minor role for Austrian investors. Over the medium term, however, further privatization and the accumulation of assets under personal pension schemes are expected to fuel growth.

The currencies of most Central and Eastern European countries (CEECs) fluctuated only moderately against the euro, and foreign currency bond spreads developed favorably in 2003. The profitability of banks in the CEECs improved in 2002, and capital adequacy can be considered satisfactory. The CEECs continue to play a more and more important role for Austrian banks' business activities.

Their satisfactory operating result in this region is mainly traceable to higher margins in interest income, fee-based income and trading income, to banks' greater ability to defend their prices and to a more favorable cost structure. In addition, restructuring measures have not only cut costs but have also enabled banks to release excess loan loss provisions.

Austrian credit institutions have a large credit exposure in the CEECs. The Czech Republic (followed by Germany) tops the list of country exposures if unsecuritized loans extended to foreign nonbanks by Austrian banks – including their subsidiaries in the CEECs – are taken into consideration. The acceding countries account for almost three quarters of the EUR 43.3 billion of Austrian banks' exposure in the CEECs.

Austrian enterprises' need for external funding declined, mainly because of a reduced propensity to invest. Enterprises' equity ratio has been improving since the mid-1990s, which strengthened their risk-bearing capacity. However, it should be noted that by international comparison, debt financing is still relatively high. The moderate income growth of Austrian households had a dampening effect on credit demand. Thus, lending continued to be subdued. Although credit quality improved somewhat in the course of the year, it deteriorated slightly compared with previous years. In the first half of 2003, a number of loans denominated in Japanese yen were redenominated in Swiss franc. The Swiss franc's low exchange rate volatility against the euro should reduce the risk for borrowers. While this development has a positive effect on financial stability, potential non-negligible risks remain.

After having performed rather poorly in 2002, Austrian banks improved their profitability during the first half of 2003. The rise in operating income is mainly traceable to income from financial transactions, which more than doubled against the first half of 2002, given the recovery of the stock markets. While interest rate business continues to face strong competition, interest margins have remained broadly stable. On the expenditure side, banks continued to cut costs. In the first half of 2003, operating expenses went up by no more than 0.6% year on year, which, in real terms, is actually a decrease.

An analysis of bank profitability on the basis of consolidated data confirms the positive trend observed: While administrative expenses of the banking industry augmented by only 2.3%, operating income climbed by 5.6% during the first half of 2003. As a consequence, banks' cost-income ratio improved as well, coming to 68.9% in the second quarter of 2003.

Austrian credit institutions continue to post a stable performance. Banks' profitability is on the rise again, with subsidiaries in the CEECs contributing strongly to operating results; nevertheless, in an international comparison, Austrian banks will have to make further efforts to improve their profitability. Stress tests show that the exchange rate risk for open foreign exchange positions continues to be unproblematic. International rating agencies' assessments, too, basically signal a stable outlook. Currently, the International Monetary Fund (IMF) is carrying out a comprehensive assessment of the Austrian financial system's strengths and weaknesses under its Financial Sector Assessment Program (FSAP). After a second working visit in December 2003, the IMF will present a draft report of the results of this analysis.

REPORTS

Economic Developments and Financial Markets

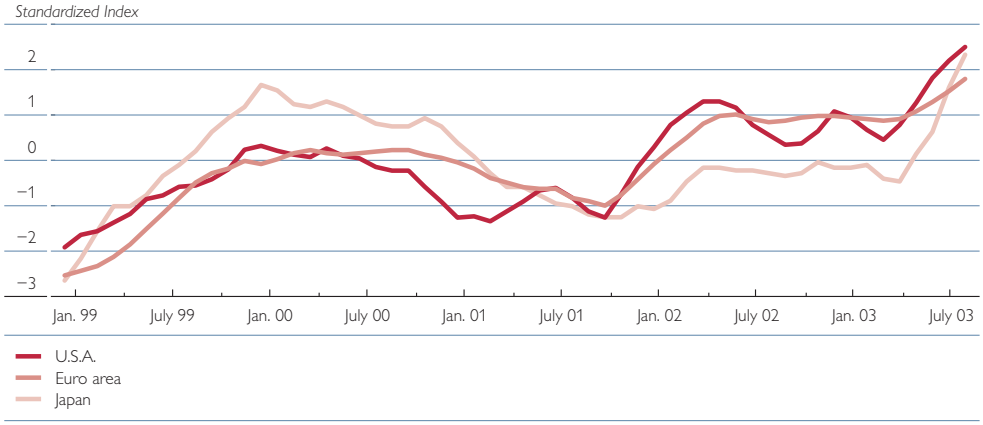
The U.S.A. Is Leading the Recovery of the Global Economy; Upswing in the Euro Area Is Relatively Weaker

The economy and the outlook for the coming quarters and 2004 have stabilized and clearly improved in the euro area, the U.S. and Japan after the negative economic effects triggered by a series of economic shocks put a damper on GDP growth in the three economic regions. In the euro area, the slowing dynamic of the economy continued in the months immediately after the end of the Iraq war, with private consumption acting as the only pillar of support. Exports decreased even further, with the appreciation of the euro in the past few quarters having apparently played a role in this development. Capital spending is still weak. However, the evidence of an economic upturn has been growing since the middle of the year. Surveys point to growing consumer and business confidence. The economy is expected to continue its recovery, albeit at a very moderate pace, for the remainder of 2003. In the U.S.A., robust consumer spending in conjunction with an increase in capital spending and a much higher level of public spending gave GDP a powerful boost in the second and third quarters. This trend seems to have been driven by the end of the uncertainties in connection with the Iraq war, the expansive monetary and fiscal policy, the firmer financial markets and the sustained high productivity growth. In Japan, the economy developed surprisingly well after the end of the Iraq war, with both exports and internal demand growing robustly. The latest surveys indicate that this development will continue in Japan in the second half of the year, which will be helped considerably by the accelerating U.S. economy.

Currently, a return of the economy in the euro area to potential output growth is to be expected in the second half of 2004. The reasons for the rather moderate recovery are to be found mainly in the continued restructuring of balance sheets in the business sector and in the appreciation of the euro. Like in the 1990s, the U.S.A. is expected to play the role of a global growth locomotive for the economy in 2004; its dynamic development will contribute to more robust economic growth in the euro

Chart 1

Development of the OECD Composite Leading Indicator



Source: OECD.

Table 1

Foreign Long-Term Portfolio Investments in U.S. Securities

	As at June 2002	Growth 2002	Annualized growth January to June 2003
	USD billion		
Euro area	912	13.9	60.1
United Kingdom	354	186.0	168.1
Japan	529	91.6	152.4
Asia excluding Japan	558	109.5	148.7
Other	1,573	146.3	246.0
Total	3,926	547.3	775.3

Source: U.S. Department of Treasury (TIC data), in-house calculations.

area and in Japan through positive effects on export demand, global financial markets and economic agents' confidence. However, this requires the transformation of the current recovery induced by an expansive monetary and fiscal policy into a self-sustaining upswing accompanied by rising private investment activity. U.S. and euro area inflation will remain subdued, above all because capacity utilization levels are currently low and unemployment rates are high, with the appreciation of the euro having the additional effect of dampening inflation in the euro area. For the year 2004, the inflation rate in the euro area is expected to stay below 2%. In Japan, the slight deflation will presumably continue in 2004 as well.

Nonetheless, the scenario of a global economic recovery starting out from the U.S.A. also carries certain risks. The volume of the current account deficit of the U.S. – frequently assessed as unsustainable (2002: USD 480.9 billion) and recently also pushed up by the sharply rising deficits in the U.S. federal government budget – could lead to a steep and rather disorderly correction of the U.S. dollar exchange rate. This could result in distortions on global financial markets and could also check global economic growth. The available data on international capital flows, which are currently serving to finance the deficit of the U.S. current account, indicate that a major portion of the financing has been coming from Asia up to now.[1])

Table 1 shows that during the first half-year 2003 persons residing in Asia invested an annualized total of USD 301.1 billion in long-term portfolio investments. Apart from the private capital flows, the exchange rate policies of a number of Asian central banks have been playing a role in this trend. These central banks contributed to financing the U.S. current account deficit by purchasing U.S. assets and until recently thereby prevented their currencies from appreciating against the U.S. dollar.

1 *When interpreting the data collected by the U.S. Department of the Treasury, one should take into account that the survey only records the residence of the initial buyer or holder. If said buyer is an intermediary with its registered office in an international financial center and acts on behalf of an investor resident in another country, this would lead to an overestimation of the financial contribution of the country in which the intermediary resides and to an underestimation of the financial contribution of the country in which the investor resides. For this reason it is necessary to exercise due caution when allocating the financing flows to regions. The system of capturing this data covers cross-border long-term portfolio investments in U.S. assets, i.e. shares in U.S. companies (excluding FDI) and bonds issued by entities resident in the U.S.A. with an original life of over 1 year.*

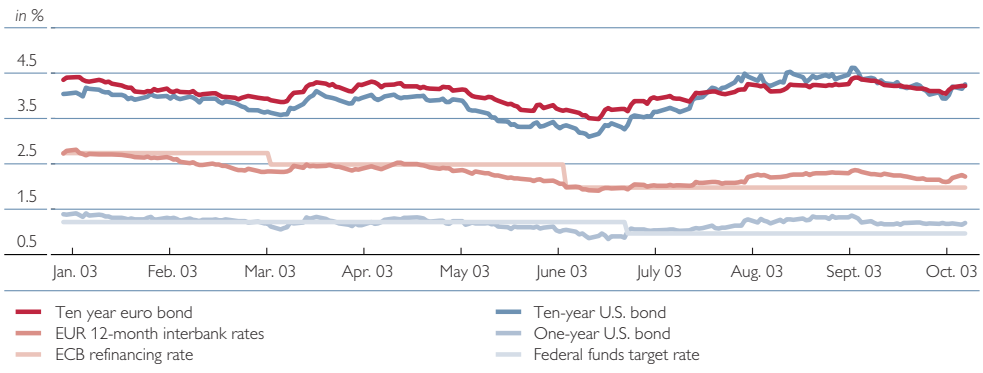
ECB and Fed Lower Interest Rates; Positive Expectations for Growth and Lower Risk Aversion Boost Global Financial Markets

The ECB lowered its key policy target rate by 50 basis points on June 5, 2003, and the Fed cut its federal funds rate by 25 basis points on June 25, 2003. According to the ECB Council, the interest rate cut to 2% took into account the improvement of the outlook for medium-term price stability as well as the downside risks for economic growth that prevailed at the time. The interest rate cut of the Fed to 1% was appropriate from the perspective of the Federal Open Market Committee (FOMC) as additional support for an accelerating U.S. economy, although it did point out – like it did in May 2003 – the low risk of an undesirable further decline of the inflation rate. In the following months, the Fed declared that it believed a continuation of its accommodative interest rate policy for a considerable period was feasible under these overall conditions. The Japanese central bank continued its zero-interest rate policy. The yield curve on the money market in the euro area and in the U.S.A. remained slightly inverted until mid-June and became increasingly steeper after the interest rate moves of the ECB and the Fed.

The yields on ten-year U.S. bonds dropped by around 70 basis points to a level of approximately 3.1% after the monetary policy statement of the Fed on May 6, 2003, which pointed out the low probability of an undesired further drop in inflation. This decline was widely attributed to speculations about possible future price-influencing interventions in the government bond market by the Fed (see box "On the Role of Announcements Effects in the Implementation of Monetary Policy – Latest Developments in the U.S.A."). After the interest rate cut by the Fed on June 25, these speculations quickly dissipated and were replaced in the bond markets by growing optimism about the economy after the release of positive economic data, which resulted in a steeper yield curve. Hedging transactions in connection with U.S. real estate financing deals reinforced the respective price trends on the U.S. bond markets. Yields in the euro area followed the lead of U.S. yields, but not fully. This caused yield spreads at the long end to widen from May to mid-June and to narrow again and reverse afterwards.

Chart 2

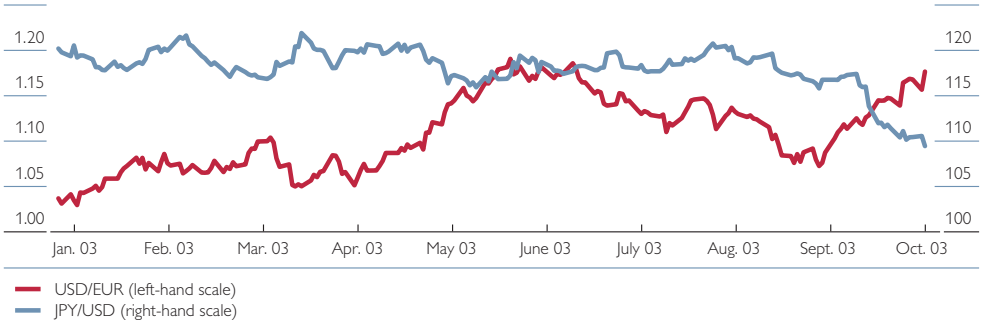
Interest Rates in the Euro Area and in the U.S.A.



Source: Thomson Datastream, Federal Reserve.

Chart 3

Exchange Rate Developments – Euro Area, U.S.A. and Japan



Source: Thomson Datastream.

Stock markets in the U.S.A., the euro area and in Japan rallied strongly from mid-March to mid-June 2003. A number of factors were responsible for this development: First, the end of the Iraq war led to a substantial decrease in risk aversion. Additionally, corporate earnings were surprisingly good, especially in the U.S.A. Finally, the decline of real interest rates on low-risk investments boosted stock markets as of the beginning of May 2003. The higher risk tolerance of investors was reflected not only in higher stock prices, but also in the further narrowing of risk premiums on corporate bonds of issuers with low credit ratings and emerging market bonds. As of mid-June, the rally slowed considerably, above all in the U.S.A., which was probably due in part to the resurgence of real yields on low-risk investments. The steep rise of Japanese stock markets was particularly remarkable, which, starting out from a very low level, clearly reflected the expectations of a global economic upswing.

On foreign exchange markets, the exchange rate of the U.S. dollar against the euro was very volatile after the end of the Iraq war, fluctuating between 1.08 and 1.19 USD/EUR. The exchange rate fluctuations often accompanied changes in yield spreads at the long end. Accordingly, the steep drop in yields in the U.S.A. from the beginning of May to mid-June 2003 was accompanied by the strong appreciation of the euro against the U.S. dollar. Afterwards the U.S. dollar firmed as a result of the improving economic outlook in the U.S.A. relative to the euro area.

There were also major changes in the exchange rate of the Japanese yen against the U.S. dollar. This exchange rate was, on average, at around 118.7 JPY/USD in the first half of 2003, with the Bank of Japan intervening on the foreign exchange market with a volume of approximately USD 120 billion to stabilize the currency and to delay the firming of the Japanese yen against the U.S. dollar. Around the time of the release of the closing communiqué of the G-7 on September 21, 2003, which contained a call for higher exchange rate flexibility based on market forces, the yen surged strongly and quickly against the U.S. dollar by some 7% as compared to the average of the first half-year. The euro also firmed against the U.S. currency after the G-7 meeting, which market experts attributed, among other things, to growing worries about financing the U.S. current

account deficit and to the persistent weakness of the U.S. labor market. The euro also weakened slightly against the Japanese yen. In the weeks that followed the release of the closing communiqué of the G-7, market sentiment on foreign exchange markets was rather volatile and nervous in the major currency pairs. The Swiss franc lost almost 5.5% on the euro from the beginning of April through mid-June 2003 and has been stable ever since in a bandwidth between 1.53 and 1.55 SFR/EUR. The weakening is probably related to the diminishing risk aversion on international financial markets. Thus, the Swiss franc is only 4% below the level it had when the euro was introduced.

On the Role of Announcements Effects in the Implementation of Monetary Policy – Latest Developments in the U.S.A.

On May 6, 2003, the Federal Reserve published the regular press release on its monetary policy decision. The press release pointed out that the risks to economic growth were balanced, while there was a low probability of an unwelcome further drop in inflation. This press release came at a time at which financial markets and economic policymakers were discussing the extent of the risk of deflation in the U.S.A. and the adequate economic policy response. Highly topical was the subject of maintaining the effectiveness of monetary policy by taking extraordinary monetary measures even when short-term rates were already at zero. Below is a brief look at one of the proposed extraordinary measures, namely the direct steering of long-term U.S. interest rates through monetary policy measures.

U.S. monetary policy is pursued through open market operations, which concentrate on buying and selling securities (mainly U.S. government bonds) on the primary and secondary markets to control the liquidity of the U.S. banking system in such a way as to keep the market interest rate for overnight loans between banks, the so-called federal funds rate, as close as possible to the target rate defined by the Federal Open Market Committee (FOMC), namely the federal funds target rate. These operations are carried out in accordance with a number of principles, the most important of which being the avoidance of influence on the prices of long-term bonds (market neutrality). This means that the direct influence on interest rates is only on overnight rates, while the long-term interest rates are determined exclusively by market forces. Nevertheless, the Federal Reserve System in principle has the possibility of suspending this principle and using its portfolio to influence long-term interest rates as well.[1])

The sharp decline in long-term interest rates after May 5, 2003, and the assessment of market participants illustrates that the statement of the Fed was interpreted as an announcement of the significant possibility of future interventions by the Fed to influence prices on the market for long-term U.S. government bonds. This expectation disappeared with the lower-than-expected interest rate cut of June 25, as did the financial markets' deflation fears, giving way to growing optimism about the economy as of mid-June.

The next press releases of the Fed on monetary policy decisions on August 12, September 16 and October 28 stated that under the given macroeconomic conditions, the accommodating interest rate policy of the Fed would be likely to be maintained for a considerable length of time. This type of announcement theoretically also has an influence on long-term interest rates. The effect, also known as the policy duration effect, influences developments through the expectations theory of the term structure of interest rates; the credible assurance that short-term interest rates will be kept low in the future can lead to lower long-term interest rates. The Japanese central bank's monetary policy since April 1999 is a case in point: the assurance of keeping short-term interest rates at zero as long as deflation prevails resulted in a significant decline in long-term interest rates in Japan.

1 *There is a historic example for this type of policy at the Fed. After the U.S.A. entered World War II, the Fed took over the obligation to keep the yields of long-term government bonds at a level of 2½%. This obligation was observed until the so-called Treasury-Federal Reserve Accord of March 4, 1951. This agreement released the Federal Reserve from the obligation to support the market for U.S. government debt at pegged prices and made possible the independent conduct of monetary policy.*

Central and Eastern Europe

High Returns on Bulgarian, Romanian and Russian Eurobonds

The development of yield spreads of U.S. dollar- and euro-denominated government bonds of emerging countries against the benchmark bonds of the U.S.A. and the euro area was very good this year: The average yield premium in U.S. dollars (J. P. Morgan's EMBI Global index) narrowed by 239 basis points to 486 basis points in the first nine months of the year, with the downtrend having flattened noticeably since mid-May. The spread in euro dropped by 200 basis points to 232 basis points until the end of September.

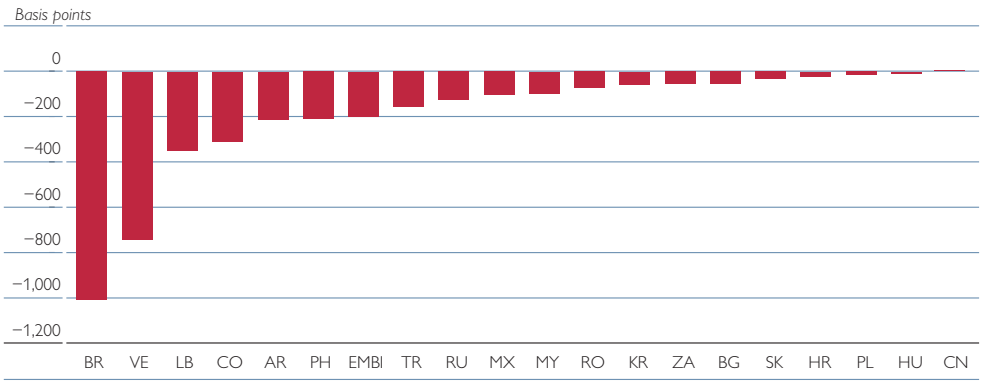
However, these average changes veil the differences between the individual issuers. Thus, the yield spread of Brazilian and Venezuelan government bonds in euro narrowed by 1,000 and 750 basis points, respectively, which is far above average. The yield spreads of bonds of Central and Eastern European (CEE) issuers changed only slightly in contrast.

Russia's yield spread diminished from 270 basis points to 100 basis points in the first half of 2003. The fundamental economic data of the country and the outlook of a higher rating encouraged this trend despite the decline in the oil price, which is important for the country. At mid-year, spreads widened to 150 basis points, reflecting the political uncertainty before the upcoming parliamentary elections in December (the communists achieved good ratings in surveys; the Yukos affair[1]) made investors wary). When Moody's Investors Service raised the rating of Russia's long-term debt denominated in foreign currency at the beginning of October 2003 to investment grade (Baa3), spreads narrowed quickly to around 115 basis points by mid-October. Near the end of October, yield spreads widened again to around 140 basis points as a reaction to the culmination of the Yukos affair.

The second-largest drop among the CEE countries was in Romania, where spreads diminished by 72 basis points (to 214 basis points). Solid fundamental data, progress in EU accession negotiations, political stability and good cooperation with the IMF are a favorable setting. This picture is completed by the rating improve-

Chart 4

Change in Euro EMBI Global Spreads (January to September 2003)

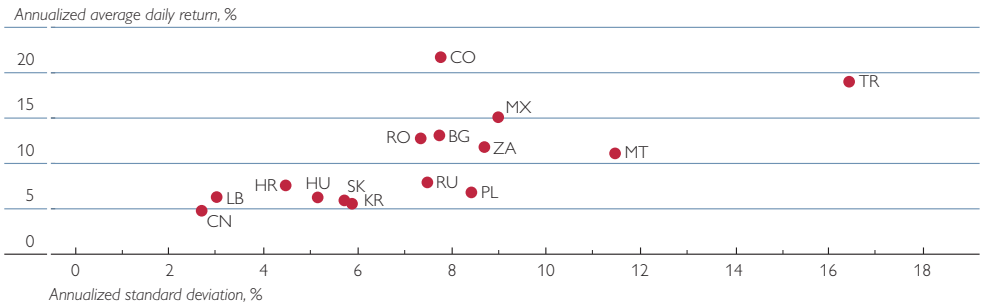


Source: Bloomberg.

1 *The authorities seized most of the stock of Yukos oil company after the arrest of its CEO.*

Chart 5

Euro EMBI Global: Risk/Return Ratio (January to September 2003)



Source: Bloomberg.

Note: The risk-return graph puts the realized return from a financial position during a specified period of time in relation to the associated risk. The return is measured by the average daily change in the value of the position, and the risk is measured by the standard deviation of these changes. Here, higher values on the x axis represent greater risk. Higher values on the y axis represent a higher return. To ensure that the values are comparable for observation periods of different length, the return and risk measures are annualized.

ments and the expectation of further upgrades. Bulgaria's yield spread decreased by 54 basis points (to 195 basis points). Higher ratings in May and June, 2003, and the provisional conclusion of two negotiation chapters with the EU encouraged this development. However, political uncertainties (the finance minister's resignation threat, the governing parties' loss of popularity) and a negative trend in the current account prevented a stronger spread narrowing. Yield spreads in Slovakia decreased by 30 basis points to 19 basis points, those in Croatia shrank by 20 basis points to 105 basis points. The upcoming parliamentary elections in conjunction with the deterioration of the trade balance and the substantial increase in foreign debt make it unlikely that we will see a further spread narrowing soon in Croatia. In Slovakia, it seems as if there is hardly any more room for a narrowing from the current spread level, despite the improving external fundamental data. Poland and Hungary are at the bottom of the list, posting a decline in yield spreads by 16 basis points and 7 basis points (to 67 basis points and 30 basis points).

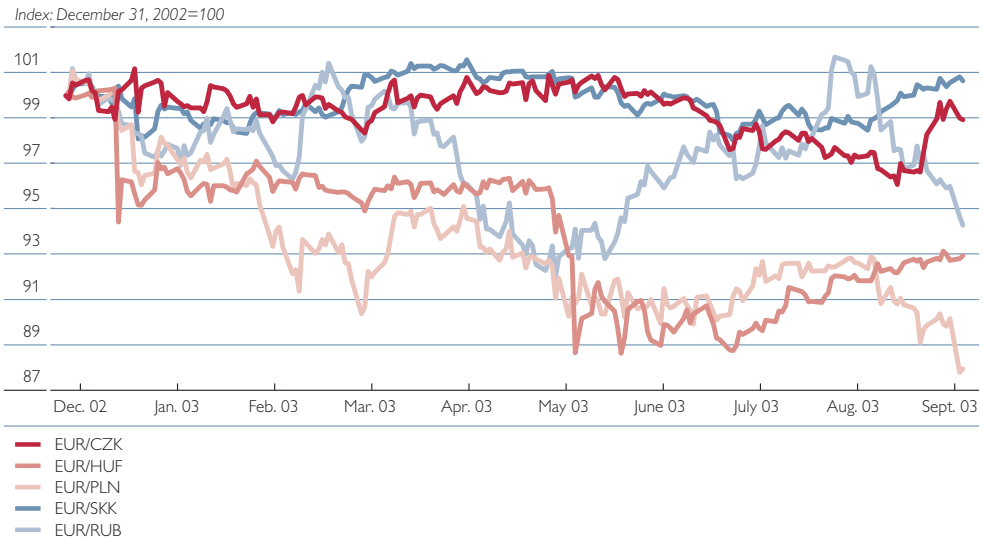
Exchange Rate Trends

With the exception of the Hungarian forint, the Polish zloty, the Russian ruble and the Romanian leu, the most important CEE currencies fluctuated only moderately against the euro (between a loss in value of 1.6% and a gain of 0.7%. In contrast, the cumulative losses of the Hungarian forint and the Polish zloty are around 7.4% and 12.7%, and 6% for the Russian ruble.

In Poland and Slovakia, the development of the current account was positive. In Poland (deficit in 2002: 3.5% of GDP) the deficit decreased in the first eight months of 2003 by 40% against the like period of the previous year (which was favorably influenced by the weakening of the currency). In Slovakia, (2002: deficit 8.2%) the deficit was 80% lower at mid-year 2003 than one year ago, and the latest trade balance data lead us to expect this trend to continue. Moreover, over 60% of the deficit in Poland was financed by direct investments, while in Slovakia inward foreign direct investment (FDI) flows were almost three times as high as the deficit.

Chart 6

Exchange Rate: Euro per Unit of National Currency



Source: Bloomberg.

In the Czech Republic (2002: deficit 6.5%) the deficit for the first half-year 2003 was slightly lower than in the first half-year 2002 despite a marked deterioration in the second quarter. Although the FDI inflows slowed down, they were high enough to finance the deficit. In Slovenia (2002: surplus 1.7%) the current account slid into deficit in the first seven months, and FDI also posted a net loss. Currently, the size of the gap (about 0.2% of the estimated full year GDP) is still very low. By contrast, in Croatia (2002: deficit 6.9%) and Hungary (2002: deficit 4%), the significant deterioration resulted in a considerable current account deficit. After the Cro-

Chart 7

Exchange Rate against the Euro: Risk/Return Ratio

(January to September 2003)

Source: Bloomberg.
Note: See note in chart 5. Here, greater values on the y axis indicate larger increases in the exchange rate per unit of euro and hence a bigger depreciation of the individual currencies.

atian current account deficit remained at the previous year's level in the first quarter of 2003, it has been widening steadily ever since and in the light of the moderate growth of the number of overnight stays by foreign tourists, it will probably also feed into a widening of the current account. In Hungary, the current account posted a deficit for the first seven months of 2003 which was as high as in the full year 2002 (EUR 2.7 billion), while inward FDI flows only amounted to a meager EUR 150 million.

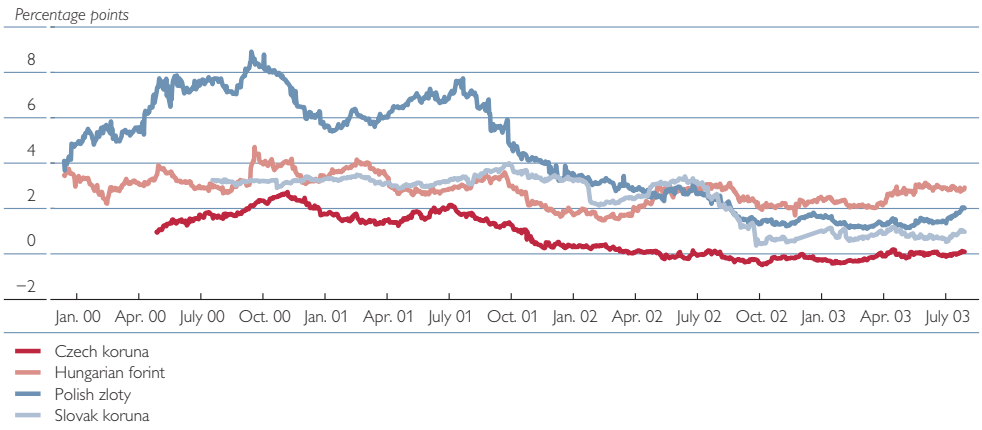
Portfolio capital flows painted a mixed picture. In Croatia and Poland, the Eurobond issues have contributed enormously to raising net income, while in Hungary and Slovakia new issues are used to refinance other issues falling due.

In the Czech Republic and in Poland, we saw net portfolio capital outflows (diminishing inflows, rising outflows) for debt securities. The drop in the yield spread against the euro area probably contributed to this development. Thus, the Czech central bank has reduced its 14-day rate sterilization rate by 75 basis points to 2% since the beginning of the year to prevent a renewed excessive appreciation of the currency. The Polish central bank lowered its key lending rate (14-day sterilization rate) in six steps from 6.75% to 5.25% in response to the favorable inflation environment. In Hungary, the capital inflows into the domestic government bond market developed largely parallel to exchange rate trends. The high yield spread since June as a result of the interest rate hike of 300 basis points revived inflows, and the stock of securities held by foreigners broke a new record by mid-September. However, the higher dependence on portfolio capital is a risk unless the economic data improve. In this context, it remains to be seen if currency developments will follow a separate path in the long run if capital outflows from the bond market, which began in the second half of September, continue. The Slovak central bank lowered its key lending rate by 25 basis points to 6.25% at the end of September. The principal motivation for this move was much slower domestic demand and the ensuing rise in net exports since the beginning of the year, the resulting appreciation pressure on the currency and the expectation that at the end of 2003, the core inflation rate would stay in the lower range of the bandwidth (2.4% to 5.0%) despite the rising overall inflation (around 9%). Finally, in this context we would also like to point out the addition of a five-year bond to the Slovene fixed-coupon tolar-denominated yield curve since March 2003 and also to the issue of a Croatian five-year fixed-coupon kuna-denominated government bond in May, which has opened up new opportunities for foreign investors.

Finally, we would like to stress the effects of the exchange rate of the U.S. dollar against the euro on the development of individual CEE currencies' exchange rates against the euro. Especially in the case of the Polish zloty, this influence appears to have been declining: Here, it seems as if the influence of the U.S. dollar is becoming less related to its former share in the basket of currencies (45%). The development in 2003 of the Russian ruble against the euro (weakening in the second quarter, firming thereafter) was again determined mainly by the trend of the U.S. dollar's exchange rate against the euro. Compared to its reference currency, the U.S. dollar, the ruble strengthened

Chart 8

Yield Spreads to Euro Benchmark Bonds



Source: Bloomberg.

steadily until mid-2003 before it fell slightly from the end of August.

Local Currency Government Bonds

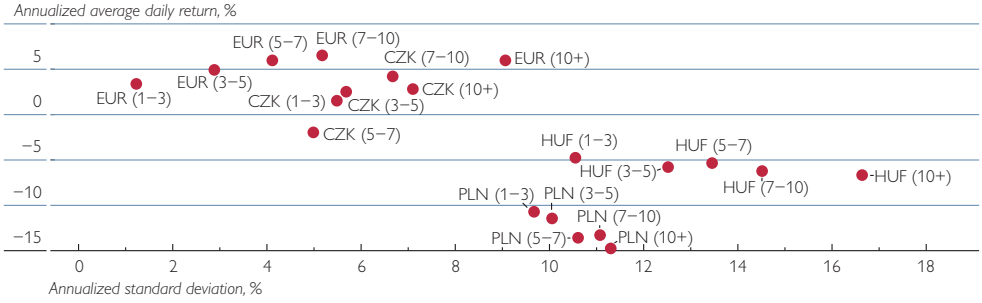
The yields of government bonds in local currency have posted rises of over 100 basis points in the Czech Republic, Hungary, Poland and Slovakia since the beginning of 2003 (with the exception of Czech and Polish short-term bonds). This was due in part to yield rises in the euro area. Country-specific factors played a great role and gave rise to partly divergent developments of the individual yield spreads against the euro.

At the short end of the yield curve, the divergent inflation trends in each country led to different developments of official interest rates and money market rates. At the long end, the movements were generally not as pronounced. In part, the development of inflation benefited bond prices (Czech koruna, Polish zloty), and in part, it was also responsible for the rise in yield spreads against euro benchmark bonds (Hungarian forint, Slovak koruna). While the direction of the change in Hungarian yield spreads was determined by the course of inflation, the extent of the

Chart 9

Local Currency Bonds: Risk/Return Ratio in Euro

(January to September 2003)



Source: Bloomberg.
Note: The figures in brackets indicate the maturity of the government bonds denominated in the currency concerned.

movements was strongly influenced by the interest rate hikes of the central bank. In Slovakia in contrast, the moderate course of core inflation seems to have had a dampening effect on spread widening.

In the Czech Republic and in Poland the yield curves have become steeper since the beginning of 2003 in comparison to the euro yield curve. In Hungary, by contrast, the spread curve flattened in mid-2003 in the wake of the massive interest rate hike. However, the narrowing yield spreads against the euro at the short end at almost constant yield spreads at the long end have resulted in a steeper spread curve since then. Fiscal policy uncertainties played a role in these movements. Thus, for example, the Czech yield curve (in the ten-year and two-year segments) is currently around 15 basis points to 20 basis points steeper than the euro yield curve, and the negative yield spreads against the euro in the ten-year and fifteen-year segments have been replaced by positive spreads of 20 basis points to 40 basis points. According to surveys, market participants expect the Czech koruna to appreciate against the euro in the next few years, so that the fiscal policy risk remains an explanation for this spread. Various factors contributed to the steeper Polish yield curve. At the short end, the firming of the economy, higher inflation expectations, subdued interest rate cut expectations and the announcement of a higher budget deficit in 2004 seem to have been decisive for the wider spreads. The impact of higher inflationary expectations and of the announcement of a rise in the budget deficit in 2004 was stronger on spreads at the long end of the yield curve. In Hungary, the high interest rate and yield spreads livened up capital inflows in the past few weeks. However, moderate decreases among yield spreads were seen only in the short maturity segments, while the spreads in the ten-year range remained steady at almost 300 basis points. The expectation that the deficit targets would be exceeded together with a still adverse trend in the current account were probably the decisive factors.

Turning to expectations, we would like to point out the common risk factors of the four markets. We expect inflation to rise next year in the Czech Republic, Hungary and Poland. In the first two countries, this would be due to temporary one-time effects, but we cannot rule out an impact on interest rate levels. As the latest developments have shown, bond markets also remain sensitive to budgetary developments. Apart from the implications of the budget deficits on the issuing volumes of government bonds, fiscal policy is important also because it may influence market expectations about the date of the introduction of the euro.

The Banking Sector in Central Europe[1])

Operating Performance and Profit Developments

With the exception of Poland and Hungary, the banks in Central Europe (CEE EU accession countries and Croatia) succeeded in raising return on equity from 2001 to 2002 despite

1 *This chapter reviews the development of the banking industry in the Czech Republic, Hungary, Poland, Slovakia, Slovenia and Croatia. The section "Financial Intermediaries in Austria" analyzes the development of all subsidiaries of Austrian banks established in these countries.*

Table 2a

Nominal Return on Equity

	2000	2001	2002	Q1 02	H1 02	Q1 03	H1 03
	%						
Croatia	10.7	6.6	13.7	..	20.4	18.8	..
Poland	14.5	12.8	5.3	14.5	8.7	11.1	10.3
Slovak Republic	25.4	20.8	30.1	32.9	28.8	32.5	..
Slovenia	11.3	4.8	13.3	..	18.4	..	..
Czech Republic	13.0	16.5	25.4	33.1	29.5	24.6	23.5
Hungary	12.5	16.2	15.4	..	17.3	..	..

Source: National central banks, OeNB.

Table 2b

Real Return on Equity

	2000	2001	2002	Q1 02	H1 02	Q1 03	H1 03
	%						
Croatia	4.2	1.6	11.2	..	17.4	16.9	..
Poland	4.0	6.9	3.3	10.7	5.7	10.5	..
Slovak Republic	11.8	12.8	25.9	27.0	23.9	23.1	..
Slovenia	2.2	−3.4	5.4	..	9.8	..	..
Czech Republic	8.7	11.3	23.1	28.3	25.7	25.1	23.7
Hungary	2.5	6.4	9.6	..	10.8	..	..

Source: National central banks, OeNB.
Note: Nominal return adjusted for consumer price inflation (period average). Subperiod data are annualized linearly.

the adverse economic environment. The Czech Republic and Slovakia topped the list with a return on equity of around 25% and 30%, respectively. In Poland, by contrast, the situation worsened compared to the previous year, and it is still unclear whether the data for the first quarter of 2003 are already signaling a trend reversal. Thanks to declining inflation rates, all countries reported an improvement of real (adjusted for consumer price inflation) earnings last year (except for Poland). Only the rise in inflation in Slovakia led to a slight decline in real return of equity in the first quarter of 2003.[1])

In Poland the nominal return on equity dropped by half in 2002, which is grounded primarily on the weakness of the real economy. The adverse economic environment is reflected in decreasing net interest income (as a percentage of average banking assets) and in a further rise in the share of bad loans in total loans (from 18.6% at the end of 2001 to 22.3% at the end of March 2003). In conjunction with this rise, expenses for loan loss provisions also augmented. Only at the beginning of 2003 did the ratio of these expenses to operating income drop in comparison to the like period of the previous year. However, this was not enough to improve the return on equity despite the unchanged net interest income, as the cost-to-income ratio deteriorated even further. Provisions covered 47% of bad loans[2]) as of the end of the first quarter 2003, which is a slightly worse level than at the end of 2001 (53%).

In the Czech Republic, return on equity 2002 was up from 2001. The data for the first half of 2003 reveal a deterioration, with a decline in the return on equity to 23.5% from almost 30% in the like period of the

1 *For methodological reasons, a comparison of the subperiod values with annual values does not provide very useful results wherever aggregates are not based solely on stocks.*
2 *Bad loans are defined as "substandard", "doubtful" or "irrecoverable."*

Table 3a

Net Interest Income

	2000	2001	2002	Q1 02	H1 02	Q1 03	H1 03
	% of annual average bank assets						
Croatia	4.2	3.6	3.3	..	3.2	..	..
Poland	4.0	3.5	3.3	3.0	3.1	3.0	3.0
Slovak Republic	2.3	2.5	2.7	2.5	2.6	2.2	..
Slovenia	4.7	3.6	3.7	..	3.7	..	..
Czech Republic	2.5	2.5	2.4	2.4	2.5	2.1	2.1
Hungary	3.6	3.7	3.6	..	3.5	..	..

Source: National central banks, OeNB.
Note: Data are not comparable across countries. Subperiod data are annualized linearly.

Table 3b

Current Operating Costs

	2000	2001	2002	Q1 02	H1 02	Q1 03	H1 03
	% of current operating revenues						
Croatia	56.7	65.6	59.3	..	59.1	..	..
Poland	65.5	65.2	67.6	63.3	60.7	69.9	..
Slovak Republic	67.7	65.7	57.9	58.3	58.8	56.7	58.9
Slovenia	55.3	65.2	59.6	..	56.3	..	..
Czech Republic	53.9	53.4	51.4	48.0	48.8	49.0	49.4
Hungary	73.3	64.8	66.0	..	66.3	..	..

Source: National central banks, OeNB.

Table 3c

Net Changes in Loan Loss Provisions

	2000	2001	2002	Q1 02	H1 02	Q1 03	H1 03
	% of current operating revenues						
Croatia	20.6	13.7	6.6	..	−0.4	..	..
Poland	16.3	18.9	21.0	14.6	19.2	10.4	..
Slovak Republic	−17.1	−33.4	−9.8	−9.7	−6.4	−5.1	−13.1
Slovenia	23.9	25.9	19.7	..	12.2	..	..
Czech Republic	68.5	22.8	11.6	12.5	13.8	18.6	16.1
Hungary	0.9	7.0	4.9	..	2.1	..	..

Source: National central banks, OeNB.

previous year. This development may be attributed largely to a decreasing tendency in net interest income (as a percentage of average banking assets) which could not be compensated by higher noninterest income. The ratio of administrative costs to operating income remained almost 50%. After a substantial decline in expenses for loan loss provisions (including the writeoff of receivables and the costs of assigning receivables) in 2002, expenses in this area climbed again in the first half of 2003. By mid-2003, the share of bad loans (in total loans) had dropped to 6.5%, which is reduction by half since the end of 2001. As provisions were not released in the same amount, about 90% of the bad loans are covered by provisions.

The situation of Hungarian banks remained stable in 2002. The banking system posted a slight decline in return on equity to 15.4% (2001: 16.2%). The reason for the drop was the slight deterioration of both net interest income and noninterest income (as a percentage of average banking assets), but administrative expenses also rose somewhat faster than operating income. Expenses for loan loss provisions were reduced, while the share of bad loans remained stable at around 7% (all receivables).

In Slovakia, return on equity improved (from 20.8% to 32.5%) in 2002 thanks in part to higher net interest income (in percent of assets). The release of loan loss provisions also contributed to total income, although to a lesser extent than in 2001, when recapitalization and privatization helped achieve record levels. This factor was decisive, especially in the first half of 2003, considering that net interest income at the beginning of the year had posted a sharp drop. The cost-to-income ratio improved in 2002 and dropped from almost 66% in 2001 to 58% in 2002. The share of bad loans was reduced even further (11.7% at the end of March), with provisions covering more than 80% of these loans.

The return on equity of Slovene banks improved substantially in 2002 (from 4.8% to 13.3%). The ratio of net interest income to average assets rose slightly to 3.7%. Moreover, noninterest income was higher, and expenses for loan loss provisions were lower than in 2001. The cost-to-income ratio improved. Furthermore, changes in legal provisions contributed to improving return on equity, as equity capital no longer had to be indexed to inflation. The share of bad loans remained low at 7% and up to 90% are covered by provisions.

In Croatia, the return on equity of banks also shot up, doubling to 13.7% in 2002. This increase was driven by a rise in noninterest income, the reduction by half of the required provisions for bad loans and the improvement of the cost-to-income ratio. Net interest income was somewhat lower than in 2002. Bad loans amounted to 5.9% of total loans at the end of 2002 (2001: 7.3%), and there are enough provisions to cover these (approximately 85%).

Capital Adequacy

Capital adequacy (the ratio of equity to risk-weighted assets) was satisfactory at the end of 2002 in all six countries reviewed, with double-digit percentages of between 11.9% (Slovenia) and 21.3% (Slovakia). The slight drop in the capital adequacy ratio in four of the six countries is due partly to changes in legislation, which, among other things, have enlarged the scope for depreciation (Poland, Czech Republic) or called for higher capital requirements. Further reasons are the reappraisal of asset items (e.g. stock holdings) and the failure of capital growth to keep up with the rapid rise in risk-weighted assets (Hungary, Croatia). The improvement of capital adequacy in the Slovak banking system can be explained by the rapid growth of regulatory capital.

Table 4

Capital Adequacy

	2000	2001	2002	Q1 02	H1 02	Q1 03	H1 03
	Ratio of equity to risk-weighted assets, %						
Croatia	21.3	18.5	17.2	17.1	17.5	16.6	..
Poland	12.9	15.1	14.2	14.0	13.7	13.1	13.3
Slovak Republic	12.5	19.8	21.3	19.9	21.0	21.4	..
Slovenia	13.5	11.9	11.9	..	11.4	..	..
Czech Republic	14.9	15.5	14.2	15.0	15.6	14.1	15.7
Hungary	15.2	13.9	12.5	..	12.5	..	..

Source: National central banks, OeNB.

Banking in Romania: On the Catching-Up Route

Compared to other countries, the Romanian banking sector is small and not very developed. Total banking sector assets amount to about a third of GDP; in central European countries the respective average ratio comes to about 70%, in the euro area it reaches 260% of GDP. Throughout the 1990s, the Romanian banking sector was plagued by sluggish restructuring of the real sector, stop-and-go macroeconomic policies, weak supervision and adverse external conditions. Only after a severe economic slump (1997–99), an overhaul of banking legislation and a major clearing up effort entailing the bankruptcy of a relatively large bank and a number of small banks did the situation stabilize. Confidence slowly rose and credit institutions expanded their activities.

Total banking sector assets grew from 29.2% of GDP in 2000 to 31.6% in 2002. Loans to enterprises correspondingly rose from 9.4% to 11.9% of GDP. The year 2002 witnessed a real credit expansion to the enterprise sector of 30%, which accelerated to about 40% in the first eight months of 2003. The speed of the credit expansion gave rise to concern on the part of the central bank (Banca Naţională a României – BNR) and the IMF. The maturity structure of loans moved from predominantly short-term (i.e. below one year) to medium-term. Consumer credits, notably mortgage loans, multiplied, but from a very low starting point. Credits denominated in foreign currency expanded particularly strongly, enhancing imports. The BNR took measures to rein in credit growth, e.g. in the third quarter of 2003 the benchmark overnight deposit rate was hiked by 200 basis points to 20.25%.

While foreign-owned banks have steadily gained importance in Romania and now dominate the sector, state-owned credit institutions still play a more important role than they do in most other neighboring countries. As of July 2003, three banks (of a total of 38 banks or 39% of total banking assets) were still in majority state ownership, the two largest of which are Banca Comercială Română (BCR) and Casa de Economii si Consemnatiuni (Savings Bank). 29 credit institutions (or 57% of total banking assets) were owned by foreigners. The largest are Banca Romana pentru Dezvoltare (Romanian Development Bank, owned by Société Générale), ABN Amro Bank and Raiffeisen Bank. As regards registered statutory capital, Austrian banks are leading among foreign banks, followed by Greek and French banks. Six banks (only 4% of total banking assets) are in domestic private hands.

The BNR has been striving lately to further improve banking supervision practices. In January 2003 loan classification and loss provisioning rules were tightened. Due to increasing competition, interest rate spreads have been declining, but they are still high (July 2003: 14.5%). Banks' liquidity is generally satisfactory; profitability has been on a rising trend, though most recently it declined, due to the narrowing of spreads. In May 2003, the overall capital adequacy ratio was measured at the very favorable level of 23%. The share of non-performing loans in total loans reached 11% in June. The authorities intend to come into compliance with IAS in 2005. If framework conditions do further adjust, there remains ample growth potential for the Romanian banking sector in the medium and long term. But major shortcomings still need to be addressed, including banks' insufficient risk analysis and management capacities, weak corporate governance, continuing limited contract enforcement capacities, weak creditor protection, sprawling bureaucracy, corruption.

Banks

Business Activities and Profitability

After a Period of Stagnation,
Austrian Banks' Total Assets Are Up Again

Following a slight decline in the first quarter and weak growth in the second quarter of 2003, Austrian banks' total assets recently posted a clear year-on-year rise. Unconsolidated total assets were up 4.2% from EUR 574 billion in August 2002 to a new record high of EUR 598 billion in August 2003. The stagnating growth in total assets in the first half of 2003 was attributable primarily to the persistently adverse economic environment. However, the recent increase might already be the start of a trend reversal. The total assets of Austria's top ten credit institutions were likewise going up again in August 2003, even though, at 2.4%, their rate of growth was lower than that of all Austrian banks taken together.[1])

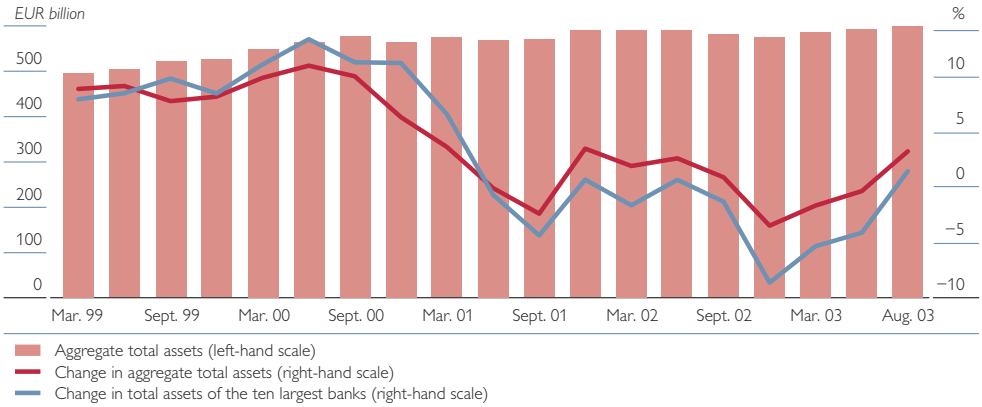
The main reason why total assets trended upward in August 2003 was the increase in external assets by EUR 15.3 billion, or 9.5%, year on year. Particularly, claims on foreign credit institutions expanded significantly. During the same period, domestic interbank business also augmented by EUR 5.6 billion or 5.4%.

On the liabilities side, external liabilities were likewise up EUR 8.8 billion or 5.1% compared to August 2002, which was attributable largely to the securitization of liabilities abroad. Overall, external assets worth EUR 176.2 billion contrasted with external liabilities to the amount of EUR 180.4 billion.

An analysis by size shows that the relatively large number of small banks remained unchanged in June 2003. 5 credit institutions had total assets in excess of EUR 20 billion, 4 banks reported total assets between EUR 10 billion and EUR 20 billion, and 43 credit institutions were in the range between EUR 1 billion and EUR 10 billion. The remaining 854 of the total of 906 credit institutions posted total assets of less than EUR 1 billion. The market share held by Austria's top ten banks shrank continuously between

Chart 10

Austrian Banks Total Assets

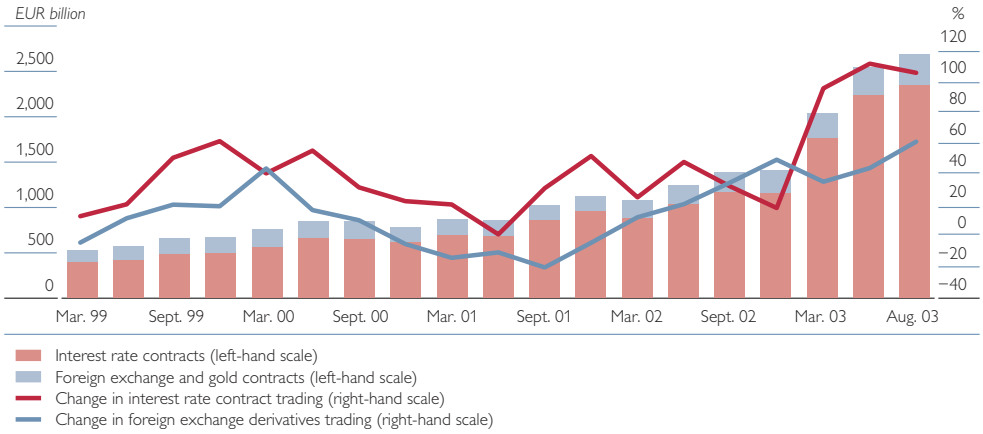


Source: OeNB.

1 *This calculation is based on the ten largest banks in terms of total assets as of August 2003. To allow for a meaningful comparison with pre-merger data, an eleventh bank was added to this group for the period prior to the merger of Bank Austria and Creditanstalt in August 2002. Special purpose banks are not included here.*

Chart 11

Derivatives



Source: OeNB.

June 2002 and June 2003, from 54.8% to 52.8% of aggregate total assets. In June 2003, the five largest credit institutions accounted for 43.4% of aggregate total assets compared with 46.3% in June 2002.

Steep Rise in Derivatives Trading

In August 2003, the notional volume of Austrian credit institutions' derivatives business expanded substantially by 101.7% to EUR 2,651.4 billion year on year. Specific off-balance sheet transactions were thus 4.4 times higher than total assets, while in the like period of the previous year, the comparable figure had been 2.3. The most common type of derivatives are interest rate contracts (almost exclusively between banks), which accounted for 87% of total derivatives in August 2003. Among interest rate contracts, interest rate swaps[1]) are the most important category. This uptrend in interest rate swaps, specifically short-term EONIA swaps, is mainly attributable to the fact that one of Austria's major banks makes increased use of this instrument for asset and liability management at the expense of traditional interbank operations with a view to reducing costs and risks (namely capital adequacy requirements and liquidity costs).

Accounting for 12% of Austrian banks' derivatives business in August 2003, foreign exchange derivatives were the second most important derivatives category after interest rate contracts. All other derivatives, including precious metals and commodity contracts, continue to play only a minor role.

Capital Market Recovery Is the Major Cause of Austrian Banks' Improving Profitability

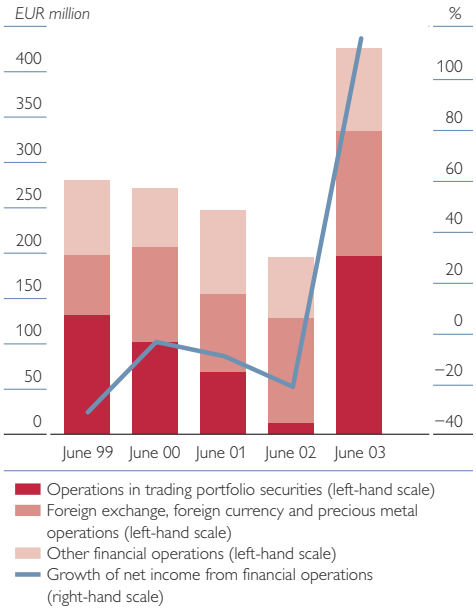
After a weak year 2002, the profitability of Austrian banks improved in the first half of 2003. Since the first half of 2002, the unconsolidated[2]) operat-

1 *Interest rate swaps are contracts between two counterparties involving the exchange of differently structured interest payment flows over a specified period of time without exchanging the underlying principal amount.*

2 *The quarterly report (data of June 2003) records the income statement data of banks operating in Austria on an unconsolidated basis, i.e. exclusive of the revenues and expenses of Austrian banks' subsidiaries in the CEECs.*

Chart 12

Net income from Financial Operations



Source: OeNB.

ing profit of the entire banking sector has gone up by 8.7% from EUR 2 billion to EUR 2.2 billion.

At the end of the second quarter of 2003, operating results augmented by 3.0% (EUR 201 million) year on year, after having contracted by 2.4% at end-2002. This recovery was attributable mainly to income from financial operations, which more than doubled at a rate of 119%. Their share in operating results grew from 2.9% in June 2002 to 6.3% in June 2003. Chart 12 shows that operations involving trading portfolio securities, in particular, contributed significantly to the result of the second quarter of 2003: After hitting a low in the second quarter of 2002 at only slightly above EUR 12 million, this income category surged to EUR 199 million year on year. The net result from foreign exchange, foreign currency and precious metal operations contributed EUR 140 million (+20.2%) to income from financial operations, while the balance from other financial operations contributed EUR 92 million (+36.2%).

In the first half of 2003, net fee-based income[1]) increased by 2.6% (EUR 39 million) year on year, accounting for more than 22% of overall operating income. In particular, fee-based income from lending operations (+18.2%), payment services (+8.2%) and foreign exchange, foreign currency and precious metal operations (+5.9%) went up against the first half of 2002.

Income from securities and participating interests that are not included in the trading portfolio[2]) dropped by 1.6% compared to the corresponding 2002 period. This development is attributable primarily to income from domestic participating interests, which fell by more than 50% from EUR 194 million in the second quarter of 2002 to EUR 94 million year on year. This plunge was compensated partly by income on domestic shares, other participating interests and floating rate securities, which rose by EUR 19 million over this period, as well as by income on foreign securities and participating interests, which surged from EUR 72 million to EUR 143 million.

In the first half of 2003, net interest income declined slightly by 0.6% year on year. The development of interest income and interest expenses reflects the falling interest rate levels: interest income shrank by 9.8% (EUR 1.2 billion), interest expenses by 13.7% (EUR 1.1 billion). Against the second quarter of 2002, the interest margin remained constant at 1.29% for the

1 *Net fee-based income is defined as the difference between fee-based income and fee-based expenditure.*
2 *Chart 12, by contrast, depicts income from securities actively traded by banks.*

Table 5

Cost/Income Ratio

	1998 1st half	1999 1st half	2000 1st half	2001 1st half	2002 1st half	2003 1st half
	%					
Mean of all banks	68.5	70.4	65.4	69.1	70.1	68.4
Mean of the ten largest banks	66.6	70.8	64.7	70.4	72.5	70.0
Mean of all banks without the ten largest	69.9	70.2	65.9	68.1	68.5	67.3

Source: OeNB.

entire interest rate business.[1]) After going down from more than 1.6% to slightly below 1.3% in the period from 1997 to 1999, the interest margin has been hovering around 1.3% since early 1999.

On the cost side, banks continued their cost-cutting policies. In the first half of 2003, operating expenses increased by no more than 0.6% year on year. Considering an inflation rate of 1.1% in June 2003, operating expenses in real terms actually went down. After an annual growth rate of 0.25% at end-2002, the current rate is the second-lowest rate observed in the past five years. Other administrative expenses even contracted by 1.1% year on year. At 2.4%, staff costs grew at a very moderate rate, reflecting the effects of reduced expenditure on wages and salaries and increased expenses for statutory social charges, higher retirement benefits and allocations to pension fund reserves.

As operating income went up while operating expenses remained stable, the entire banking sector's cost/income ratio improved, on balance, from 70.1% in the first half of 2002 to 68.4% in the first half of 2003 – without, however, reaching the value of 65.4% recorded in the first half of 2000. Even though the ten largest banks trimmed their cost/income ratio from 72.5% to 70.0%, they are still trailing the remaining banks, which managed to reduce their cost/income ratio from 68.5% in the second quarter of 2002 to 67.3% in the second quarter of 2003 (see table 5).

At the end of June 2003, Austrian banks expected annual operating results of EUR 3.9 billion for the 2003 fiscal year – 1.9% less than forecast in June 2002. Based on these expectations, the balance on loan loss provisions and income from the release of loan loss provisions would fall by 13%, thus reducing expenses. Based on the forecast for 2003, the balance on transfers to provisions for securities and income from the release of such provisions would turn negative and thus increase income. Taking into account expected taxes and expected extraordinary income, the profit for the year is predicted to amount to EUR 1.8 billion – rising by 17.1% year on year.

An analysis of consolidated income,[2]) which permits a more comprehensive assessment of the Austrian banking sector, confirms the positive

1 *This margin is calculated using the ECB method, which accounts for different volumes on the assets and liabilities sides. However, this method does not take the different term structures of assets and liabilities into account. For details see the ECB study "EU banks' margins and credit standards" published in December 2000.*

2 *The consolidated approach considers the consolidated financial statements of major banks prepared in compliance with the International Accounting Standards (IAS) and the requirements of the Austrian Commercial Code. It thus captures the revenues and expenses of banking groups as a whole (including their foreign subsidiaries).*

development indicated by the trend in unconsolidated income. Interest income, which in this case, however, includes income from securities and participating interests, rose by 1.8% to EUR 5.6 billion in the first half of 2003. Fee-based income was up 5.8% and trading income 52.6%. The entire banking industry reported a consolidated operating income of EUR 8.3 billion in the first half of 2003, climbing 5.6% year on year.

Consolidated staff costs grew at a rate of 2.5% in the second quarter of 2003, largely at the same pace as unconsolidated staff costs, while consolidated other administrative expenses edged up slightly by 0.4% in contrast to unconsolidated figures. Overall, at a rate of 2.3%, administrative expenses rose more slowly than operating income.

As a result, the cost/income ratio of the consolidated banking sector improved from 71.1% in the second quarter of 2002 to 68.9% in the second quarter of 2003. Taking into account extraordinary income, taxes and minority interests, the consolidated result for the first half of 2003 runs to EUR 1.3 billion, thus rising by 30% above the corresponding figure for the same period in 2002.

In an EU-wide comparison, however, the Austrian banking sector ranks only in the lower middle range with a consolidated return on assets (ROA) of 0.38%[1]) and a consolidated cost/income ratio of 68.9%. This position leaves some potential for further improvement in income and costs, which could be achieved by further structural consolidation, e.g. of banking offices.

Credit Risk of Austrian Banks

Loan Growth Remains Slow

The relatively slow growth in lending reported already in 2002 continued throughout the first half of 2003. Credit growth slowed down significantly, which was attributable primarily to the slumping national and international economy. In mid-2003, the Austrian banking sector as a whole for the first time recorded a decline (by 0.1%) in loan volume (see chart 13). In July and August 2003, however, loan growth turned positive again, possibly indicating a trend reversal. The decline in lending volumes was traceable mainly to the fact that the ten largest banks recorded a change of –3.0% in their loan volume at end-June. However, as in previous periods, the median[2]) of loan growth remained positive at 2.7% as at the end of June 2003.

At mid-2003, all banking sectors except state mortgage banks and special purpose banks registered a decline in loan volume growth. While in most sectors this slowdown appears to be only a short-lived phenomenon, new lending of the building and loan sector seems to be showing signs of a more persistent weakness. Since September 2002, this sector has been reporting a cut-down on lending, with loan growth hitting a low in June 2003 at a rate of –3.37% (June 2002: 1.85%).

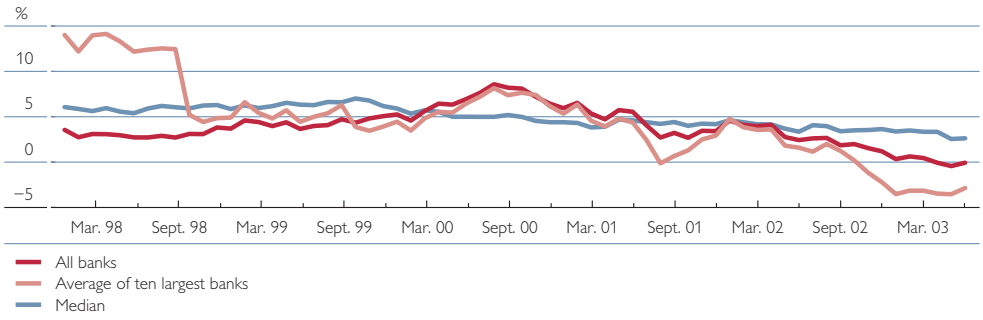
One of the reasons behind this weakness in building and loan sector lending in recent months appears to

1 *Consolidated period result as a percentage of consolidated total assets, annualized.*

2 *The median is the middle value in a set of data arranged in order of decreasing or increasing magnitude, with half the scores being above, the other half below the median. In contrast to the arithmetic mean, the median has the advantage of being more stable against outliers. Special purpose banks are not included in the calculation of the median.*

Chart 13

Loan Growth



Source: OeNB.

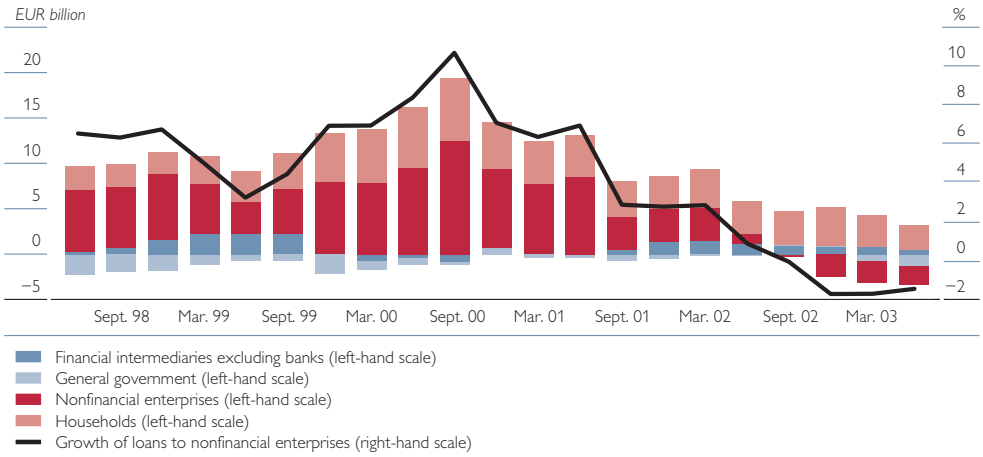
be the competition by other banks offering foreign currency loans. As under Article 9 of the Act on Building and Loan Associations (Bausparkassengesetz, BSpG) these credit institutions are required to avoid taking on any currency risks, they are unable to provide foreign currency loans for home financing. Savers wishing to use foreign currency loans for this purpose therefore have to turn to other banks. Moreover, the weak economy has hit the building and loan sector more massively than other sectors since at times of economic uncertainty consumers are, as a rule, even more reluctant to make long-term big-ticket purchases than to buy less costly consumer goods.

Household consumption is, however, generally quite sluggish, as reflected by the slowdown in the growth of loans to households over recent months. At end-June 2003, the growth rate stood at 2.6% compared with 3.6% at the same time in the previous year. Loans to nonfinancial enterprises contracted at a slower pace than in previous periods, stabilizing at a growth rate of around –2.0% at the end of June 2003 (see chart 14).

While the volume of loans to financial intermediaries (excluding banks) remains expand at a stable rate,

Chart 14

Loan Growth Broken Down by Economic Sectors



Source: OeNB.

Table 6

Credit Quality According to the External Auditor's Annual Prudential Report[1])

	1997	1998	1999	2000	2001	2002
	As a percentage of total lending					
Nonaccrual and nonearning claims on nonbanks						
50% quantile (median)	0.11	0.19	0.16	0.12	0.10	0.11
Mean of ten largest banks	1.11	1.13	1.02	0.90	0.73	0.64
95% quantile	3.89	3.82	3.93	3.37	3.54	3.08
Nonperforming claims						
50% quantile (median)	2.28	2.43	2.30	2.44	2.34	2.30
Mean of ten largest banks	2.84	2.12	2.00	1.73	1.77	1.59
95% quantile	8.67	8.64	8.87	9.07	9.25	8.22
Irrecoverable claims						
50% quantile (median)	0.53	0.55	0.57	0.55	0.49	0.57
Mean of ten largest banks	0.40	0.43	0.46	0.44	0.42	0.60
95% quantile	4.17	4.15	4.11	4.01	4.04	3.83

Source: OeNB.

[1]) *Owing to a subsequent revision of reported data, the values presented in this table differ slightly from those in previous tables.*

loans to the general government subsided again in the first half of 2003 after a brief period marked by a slight uptrend.

Asset Quality Deteriorated Slightly in the First Half of 2003

Data from the external auditor's annual prudential reports, available since mid-2003, allow for assessing credit quality and thus the credit risk Austrian banks were exposed to in 2002. In assessing credit quality, the report distinguishes between *nonaccrual and nonearning* claims, *nonperforming* claims, and *irrecoverable* claims on nonbanks.[1]) Quite generally, the prudential reports state that Austrian banks' credit quality was satisfactory in 2002 and that there were no developments since 2001 that would have given reason for concern. The 95% quantile[2]) even improved against 2001 across all three categories mentioned above (see table 6). Currently, for 95% of all Austrian banks nonaccrual and nonearning claims account for less than 3.1% of banks' loan portfolios, while in the previous year this figure stood at 3.5%. The share of nonperforming claims even dropped from 9.3% (2001) to 8.2% (2002), while irrecoverable claims declined somewhat from 4% in 2001 to 3.8% in 2002.

Likewise, the median remained quite stable for the three categories, although irrecoverable loans rose slightly from 0.5% in 2001 to 0.6% in 2002. It is interesting to note that only the ten largest banks posted an above-average year-on-year increase in irrecoverable loans from 0.4% in 2001 to 0.6% in 2002. In the other categories and where loan loss provisions are concerned, however, the credit quality of large banks is better, as a rule, than that of smaller banks.

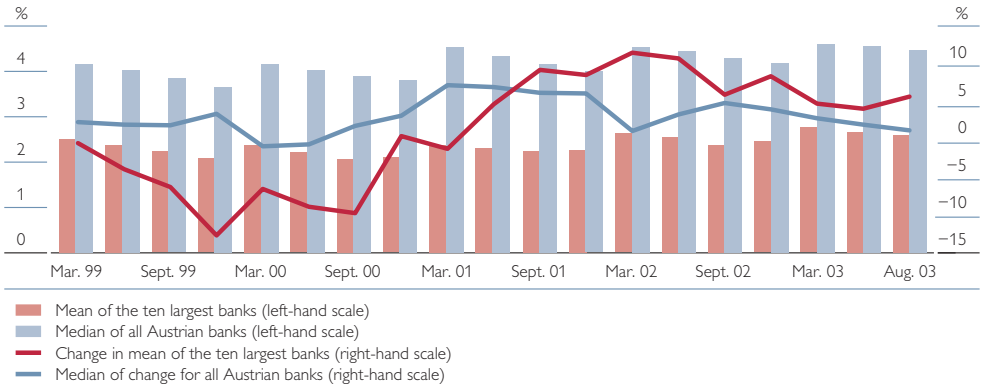
The level of loan loss provisions that Austrian banks report in their

1 *Claims on nonbanks that are not expected to make payments in the near future are rated as nonaccrual and nonearning assets. Nonperforming claims are claims that are expected to default. Irrecoverable claims are claims that have already defaulted at the time of data compilation.*

2 *The 95% quantile divides an ordered set of data into the lower 95% and the upper 5%. This means that 95% of credit institutions recorded values that are below the level of the 95% quantile.*

Chart 15

Loan Loss Provisions Relative to Claims on Nonbanks



Source: OeNB.

monthly returns may serve to examine their credit quality during the year. This figure shows the risk provisions created with respect to loans that are likely to be irrecoverable. The predominant part of loan loss provisions is set up for claims on nonbanks, while loan loss provisions for claims on credit institutions typically tend to be rather low.

In the first quarter of 2003, loan loss provisions relative to claims on nonbanks amounted to about 3.6%. This percentage declined to about 3.5% in the second quarter and came to 3.4% in August 2003. As loan loss provisions reported at the beginning of the year are usually higher than those reported at year-end, which creates a seasonal effect across the year, assessments are best made year on year. Such a year-on-year comparison shows that the loan loss provisions reported in August 2003 were the highest since 1999, reflecting the difficult economic environment in which the Austrian banks are currently operating.

In August 2003, the risk provisions made by the multi-tier sectors of the Austrian banking system, which traditionally report a higher level of provisioning, were slightly up against August 2002, running to 5.1% for Volksbank credit cooperatives, 3.8% for savings banks and 4.2% for Raiffeisen credit cooperatives. At 2.8%, loan loss provisions reported by joint stock banks had also increased. The traditionally very low provisioning levels of building and loan associations rose likewise, from 0.4% in August 2002 to 0.6% in August 2003. By contrast, in the period under review state mortgage banks reduced their loan loss provisions from 2.7% to 2.3% of claims on nonbanks, thus – after a period of increased provisioning – approaching the level recorded in 2000.

The loan loss provisions of the ten largest Austrian banks developed along similar lines, albeit at a lower level than in 2001 and 2002. In August 2003, loan loss provisions relative to claims on nonbanks stood at 2.7%, thus exceeding the percentage recorded at the same time of the previous year. In August 2003, the median level of loan loss provisions for claims on nonbanks was 4.6%.

Innovative Financial Instruments for the Transfer of Credit Risk

The Impact of Securitization on Financial Stability

The international capital markets have seen a growing trend towards the securitization of assets, driven primarily by the search for new refinancing sources and for possibilities to reduce regulatory capital requirements and by targeted credit risk transfer. Recently, this trend has given rise to a broad debate at the international level, which has focused mainly on the question of whether, overall, the transfer of credit risk within the banking sector as well as from the banking sector to other financial market participants has a stabilizing or a destabilizing effect on the financial system.

Against this background, the Oesterreichische Nationalbank (OeNB), in fulfilling its task of maintaining and safeguarding financial market stability, organized a panel discussion on the effects of securitization on financial stability, bringing together experts from supervisory authorities and academia as well as practitioners. One of the conclusions of this event was that the impact of these instruments currently cannot be fully assessed and that opinions on this matter differ strongly. The debate will therefore continue both at the international and the national level.

Survey on the Use of Innovative Instruments for the Transfer of Credit Risk

In cooperation with the Financial Market Authority (FMA), the OeNB is currently conducting a survey on the use of innovative instruments for the transfer of credit risk. In the course of this survey, which was initiated by the European Central Bank (ECB), selected credit institutions in the EU Member States are asked to provide both quantitative and qualitative data on these innovative instruments.

Some initial results of the survey reveal that Austrian credit institutions "invest" some amounts in these instruments, thereby assuming additional credit risk. The reasons given for these purchases are, in particular, the opportunity to generate additional income and to diversify credit risk. The ratings assigned by the established rating agencies usually play a significant role in the selection and valuation of the transactions. Austrian banks mainly buy shares in tranches and products with high credit ratings. The credit institutions surveyed have indicated that they wish to continue operating in this market segment and thus further actively take on credit risks.

Austrian credit institutions currently only to a limited extent engage in the selling of credit risks by securitizing their own assets or using credit derivatives. The narrow use of credit derivatives is largely attributable to the structure of Austrian banks' loan portfolios, which are dominated by medium-sized corporate borrowers. The liquidity of the credit derivatives market for such borrowers is currently rather low owing, mainly, to a lack of external ratings. Only few Austrian banks currently securitize their own assets because of too low transaction volumes as well as high transaction costs. The instrument is, however, considered to offer interesting potential as an alternative refinancing option and for the transfer of credit risk.

Shift from Japanese Yen- to Swiss Franc-Denominated Loans Reduces Risk Potential of Foreign Currency Loans

Since around mid-2002, both the volume of Austrian banks' foreign currency claims on domestic nonbanks and the share of foreign currency loans in total lending have stabilized. Following a slight downturn in the first half of 2003, another rise took place in August 2003, however, to an aggregate level of EUR 44 billion. Foreign currency loans now account for 18.5% of total loans, still remaining significantly below the record high of 19.2% witnessed in August 2002.

In corporate lending, the share of foreign currency loans fell from its 20.1% peak of April 2002 to 18.3% in August 2003. The share of foreign currency loans in loans to households continued to expand unabatedly until end-2002. It was only in the first half of 2003 that this share stabilized somewhat at around 25%. By August 2003, though, foreign currency loans had reached a share of almost 26% in total lending.

This renewed rise in foreign currency loans was attributable primarily to an increased demand for loans denominated in Swiss francs. In addition, the trend to replace Japanese yen loans by Swiss franc-denominated loans, which has been observed since mid-2002, intensified further in the first half of 2003. The share of Japanese yen loans in total foreign currency loans outstanding fell from its June 2002 high of 42.0% to 18.5% in August 2003, while Swiss franc loans surged from about 50.1% to almost 73.7% over the same period.

The phenomenon of foreign currency loans observed in Austria is still unique across the euro area: While Austria's share in total euro area lending was 3.1% in June 2003, its share in Swiss franc- and Japanese yen-denominated loans came to 36.3% and 34.4%, respectively.

The main reason for this shift into the Swiss franc is the fact that the interest rate spreads between the euro and both the Swiss franc and Japanese yen have increasingly been converging since early 2002, coming to around 2 percentage points in September 2003 (in terms of three-month money market rates). In addition, exchange rate developments may also have played a role: While positive economic indicators have been exerting mounting upward pressure on the Japanese yen since mid-2003, the Swiss franc was trending downwards in the first half of 2003.[1])

From the perspective of financial stability, the trend of shifting from the Japanese yen to the Swiss franc has to be regarded as positive, as the Swiss franc proved to be two to three times less volatile than the Japanese yen over the past decades. We may therefore conclude that the exchange rate risk – and thus the concentration risk for banks with a particularly high share in foreign currency loans – is lower for loans denominated in Swiss franc than for Japanese yen loans.

Nonetheless, even financing denominated in Swiss franc carries a nonnegligible exchange rate risk, which is augmented by interest rate risks and, where the common repayment vehicles are used, by additional risks associated with these repayment vehicles. Therefore, given the high share of foreign currency loans in total loans, potential risks to the stability of Austrian financial markets continue to exist, even though mitigated by the shift from the Japanese yen into the Swiss franc.

Hence, in the first half of 2003 the OeNB collaborated with the Financial Market Authority (FMA) in drawing up a questionnaire which is to help collect data on foreign currency loans that are not included in the monthly returns in order to gain insight into the risk management practices of the individual banks. Based on an analysis of the findings of this questionnaire, the FMA drew up the "FMA Minimum Standards for Granting and Managing Foreign Currency Loans" and the "FMA Minimum Standards for Granting and Managing Loans with Repayment Vehicles" in October 2003. Both sets of standards are addressed to the Austrian banking sector.

Market Risk of Austrian Banks

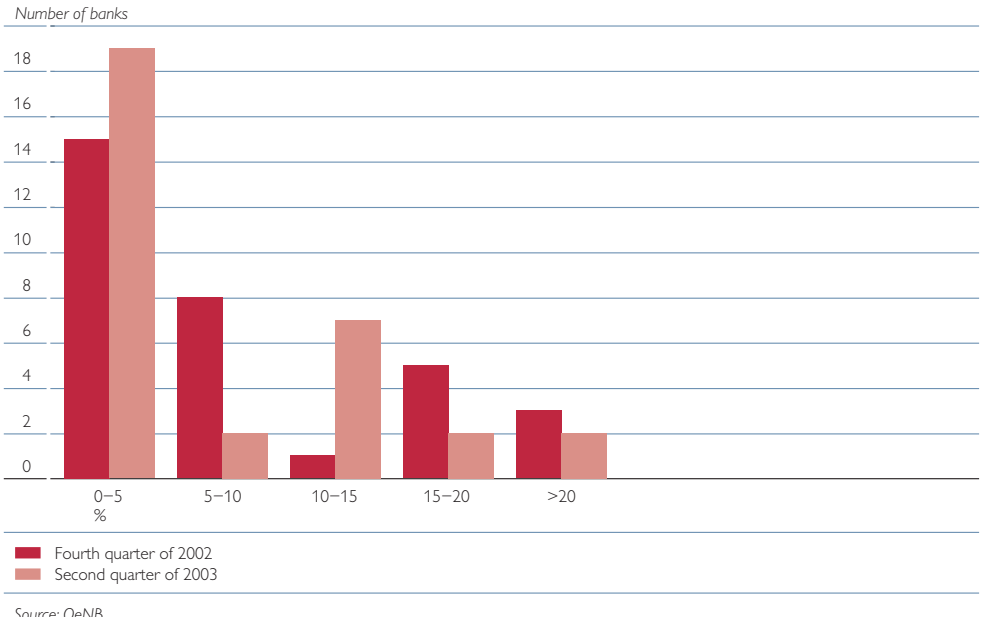
Exposure to Interest Rate Risk Continues to Be Stable

In order to measure the interest rate risk a bank is exposed to, we use the

1 *On the recent development of the exchange rates of the Japanese yen and the Swiss franc see chapter "Economic Developments and Financial Markets."*

Chart 16

Distribution of Basel Ratios for Interest Rate Risk



Source: OeNB

hypothetical decline in the bank's economic value in response to an interest rate change of 200 basis points in relation to its eligible own funds.[1]) Since end-2002, all Austrian credit institutions have reported this ratio; 32 of these – and almost exclusively the largest banks in terms of total assets – have even been reporting banks since before this date. From a risk perspective, these 32 banks, which together accounted for 73% of the aggregate assets of all Austrian banks in mid-2003, went through a positive development in the first half of 2003, as their average Basel ratio for interest rate risk declined from 8.9% to 7.9%. The distribution of Basel ratios of the above-mentioned 32 large to medium-sized banks in chart 16 shows that the number of banks with a higher exposure to interest rate risk (above 15%) has declined. However, two institutions still exceed the critical value of 20% set by the Basel Committee.

Across the entire Austrian banking system, the average Basel ratio for interest rate risk was relatively high at 12.0% at end-2002, but fell to 9.7% during the first half of 2003. As this ratio has only just been introduced, however, the figures may still be somewhat lacking in precision and should therefore be interpreted with due caution.

For banks running a large trading book, interest rate risk-sensitive positions of the trading book are not included in the Basel ratio. The capital requirements for covering the position risk of interest rate instruments, however, do not indicate an increase in this type of risk for the first half of 2003. The corresponding values have retained their historically low levels.

1 *In the following, this ratio, which was proposed by the Basel Committee on Banking Supervision, shall be referred to as the Basel ratio for interest rate risk (or Basel ratio). Eligible own funds comprise tier 1 capital plus tier 2 capital minus deductible items.*

Exchange Rate Risk: Stress Tests Show only Modest Risk

As at end-2002, when assessing the relevance of reported exposures to foreign currencies for the Austrian banking system, we can identify three groups of currencies at mid-2003: major exposures[1]) in excess of EUR 500 million exist vis-à-vis the Swiss franc, the U.S. dollar and the Japanese yen; medium-sized exposures (between EUR 40 million and EUR 200 million) vis-à-vis the Australian dollar, the Danish krone, the pound sterling, the Swedish krona, the Norwegian krone and the Canadian dollar; and minor exposures (between EUR 10 million and EUR 30 million) vis-à-vis the New Zealand dollar, the Hong Kong dollar and the South African rand.

The following findings of a stress test for June 2003 serve to assess the risk arising for Austrian banks from open foreign exchange positions. The scenario used in the test assumed exchange rate changes against the euro of 20%. The loss of market value resulting from the materialization of the exchange rate risk is interpreted as a burden on capital. Accordingly, the stress test compares the current (unconsolidated) regulatory capital ratio of a bank with its stress-tested capital ratio, computed by deducting the calculated loss in market value from a bank's eligible capital.[2])

When applying this stress scenario to all Austrian banks (with the exception of special purpose banks), the average capital ratio goes down by 14 basis points from 17.23% to 17.09%,[3]) with small credit institutions showing a weaker decline. In the stress test, the average capital ratio of credit institutions with total assets of less than EUR 100 million was found to contract by only 9 basis points, whereas that of credit institutions with total assets between EUR 100 million and EUR 500 million went down by 19 basis points and that of banks with total assets of more than EUR 500 million by 27 basis points. Only 14 of the 800 banks covered by the stress test saw their capital ratio fall by more than 1%; none of these were large banks. The maximum decline in the capital ratio of a single credit institution was 2.10%.

The results of this stress test suggest that direct exchange rate risk has only a limited impact on the Austrian banking system's ability to bear risks. However, this test does not examine potential indirect foreign exchange risks – such as the deteriorating credit quality of foreign currency loans or of portfolios held by subsidiaries of Austrian banks in the Central and Eastern European countries (CEECs) as a result of adverse exchange rate developments.

Exposure to Equity Price Risk Remains Low

As in 2002, the percentage of equity shares in Austrian banks' securities portfolios also declined in the first half of 2003.[4]) Based on book values,

1 *A bank's exposure is determined on the basis of the monthly peaks of open foreign exchange positions. It is calculated as the total sum of the absolute amounts of all Austrian banks' peak values.*

2 *The capital ratio refers to the capital eligible as credit risk cover under the Austrian Banking Act (tier 1 capital plus tier 2 capital minus deductible items) as a percentage of the assessment base.*

3 *The average capital ratio must not be confused with the capital ratio of all banks referred to under "Austrian Banks' Risk-Bearing Capacity." The latter relates the total sum of eligible capital to the total sum of assessment bases. As a number of small special purpose banks have very high capital ratios, the average capital ratio is also higher.*

4 *In this context, equity shares refer only to stocks that are not held in the form of participations or shares in affiliated companies. Shares held through mutual funds are likewise not included.*

equity shares accounted for 2.3% of banks' securities portfolios at mid-2003, down from 2.5% at the end of 2002. (Apart from equity shares, securities portfolios comprise debt securities, other fixed-income securities and mutual fund shares).

The regulatory capital required to cover equity positions in the trading book went up slightly during the first half of 2003 (from EUR 20.5 million to EUR 25.0 million). Given the typical fluctuations prevailing in this area, this rise may be considered moderate; the capital required to cover equity positions remains at historically low levels.

Legal Liquidity Holdings Remain Stable

In the second quarter of 2003, all Austrian banks fulfilled the stipulations under Article 25 of the Austrian Banking Act, governing liquid resources of the first and second degree,[1]) with the poorest cash ratio coming to 2.6% and the poorest current ratio to 20.3%. 28 banks posted a cash ratio of between 2.5% and 5%, compared to 31 banks at end-2002. However, the 5% quantile[2]) for the cash ratio fell from 11.5% in the second quarter of 2002 to 7.1% in the second quarter of 2003, thus still outperforming the corresponding value of 6.1% recorded at end-2002. At 66.9%, the median hardly changed against the mid-year levels of previous years. The ratio for the entire Austrian banking industry[3]) slightly deteriorated to 24.2% against 26.4% in 2002, but the banking system holds sufficient cash to meet liquidity requirements pursuant to Article 25 of the Austrian Banking Act. Second-degree liquidity holdings have slightly improved: In the second quarter of 2003, the 5% quantile stood at 28.2% (second quarter of 2002: 27.35%), while the median came to 53.1% (second quarter of 2002: 50.9%).

Risks Incurred Through Business in Central and Eastern European Countries[4])

In the first half of 2003, consolidated total assets of Austrian banks' subsidiaries operating in the CEECs again expanded vigorously by 4.9%, even though growth slowed down somewhat compared with previous years (growth in 2002: +16%). In absolute terms, consolidated total assets grew by EUR 3.4 billion to EUR 71.2 billion, with EUR 918 million stemming from acquisition activities. The share of unsecuritized assets in total assets decreased slightly between end-2002 (66.2%) and mid-2003 (65.7%).

1 *Austrian banks are required to retain highly liquid assets to the amount of at least 2.5% of their short-term liabilities in euro (cash ratio) and sufficiently liquid assets to the amount of at least 20% of their longer-term euro liabilities with residual or agreed maturities of up to three years (current ratio). Central institutions have the obligation for covering at least 50% of the deposits other institutions may use to meet their cash ratio.*

2 *The 5% quantile, which indicates the liquidity ratio exceeded by 95% of all banks, may serve as a measure for less liquid banks.*

3 *Total liquid resources of the first degree of all banks as a percentage of their total short-term liabilities.*

4 *This subsection covers all CEECs in which Austrian banks have fully consolidated subsidiaries. This group of countries includes, among others, also Bulgaria, Serbia and Montenegro, and Russia. This subsection focuses exclusively on the business relations of the Austrian banking sector (including subsidiary banks) with and within these countries, while the chapter "Central and Eastern Europe" explores the development of the entire banking sectors in the individual Central European Countries, including Croatia. As the two sections draw on different data sources, figures on banking statistics are not directly comparable.*

Detailed Analysis of 2002 Results Underlines the Region's Importance[1])

The profitability of the Austrian banking sector, which is currently comparatively weak by international standards, largely relies on the positive trends in banks' business activities in the CEECs (see table 7). While at end-2002, business in the CEECs accounted only for about 10% of banks' consolidated total assets, it earned 22% of their operating results (interest, fee-based and trading income) and even 26% of the result before tax. Banks' ROA before tax[2]) for business in the CEECs comes to 1.1% against only 0.37% for activities in Austria and the rest of the world, which is primarily attributable to higher margins in interest income, fee-based and trading income, and a more favorable cost structure. For instance, the interest income generated by Austrian banks' subsidiaries in the CEECs accounts for 3.0% of total assets, while income on business in Austria and the rest of the world comes to 1.56%. The cost/income ratio[3]) for the CEECs is 67.0%, while for Austria and the rest of the world it comes to 71.2%.

Substantial Credit Exposure to Central and Eastern Europe[4])

The Austrian banking system's credit risk exposure to Central and Eastern Europe is twofold: first, lenders resident in Austria make loans to borrowers in this region *(direct cross-border loans),*[5]) second, subsidiaries of Austrian banks operating in this region act as lenders *(indirect loans)*. To illustrate the relative share of the entire Central and Eastern European region as well as of individual countries in Austrian banks' credit exposure, table 8 lists the volumes of direct and indirect loans to nonbanks.[6])

The high proportion of loans granted by Austrian banks' subsidiaries in the CEECs in total indirect lending reflects their local concentration in Central and Eastern Europe: Of the global volume of indirect loans (EUR 32.7 billion), 91% originated from this region (EUR 29.8 billion), with the acceding countries accounting for 74% of this amount. Of the

1 *The data set used in this subsection draws on the reports of those Austrian banking groups that are most active in the CEECs (Bank Austria-Creditanstalt AG, Erste Bank der oesterreichischen Sparkassen AG, Raiffeisen Zentralbank Österreich AG, Österreichische Volksbanken-AG, Bank für Arbeit und Wirtschaft AG/Österreichische Postsparkasse AG, Hypo Alpe-Adria-Bank AG) on the results of their local subsidiaries (segment information) as well as on Austrian banks' consolidated data. Data under "Austria and the rest of the world" are calculated as the difference between consolidated data and the key financial figures of the subsidiaries of the above-mentioned six banking groups in the CEECs and thus also include the parent banks' cross-border transactions with the region.*

2 *Result before tax as a percentage of total assets.*

3 *Administrative expenses relative to total operating income including provisioning for lending operations.*

4 *Loans discussed in this subsection do not include securities positions held by banks.*

5 *A distinction must be made between these direct cross-border loans and the direct loans covered under "Credit Risk of Austrian Banks." The latter are loans that are not granted under a securitization scheme.*

6 *This includes exclusively unsecuritized loans to the amount of the exposure. Since only loans to nonbanks have been taken into account, there are no distortions resulting from intra-group interbank transactions. Of all direct and indirect loans granted to, or originating from, respectively, Central and Eastern Europe, 67% are loans to nonbanks. As the data source used for direct loans is the Major Loans Register (reporting threshold per bank and borrower: EUR 350,000), not all direct loans are included. However, since in cross-border lending larger volumes tend to predominate, it can be assumed that a sufficient amount of loans is covered. The volumes of indirect loans – i.e. loans extended by subsidiaries – are weighted according to the equity held by the Austrian parent institute.*

Table 7

Selected Earnings Ratios of Austrian Banks in 2002[1])

	Total	Austria and the rest of the world	CEECs
	%		
ROA (before tax)	0.45	0.37	1.11
Cost/income ratio	70.40	71.20	67.00
Interest income as a percentage of total assets	1.71	1.56	3.00
Fee-based income as a percentage of total assets	0.58	0.51	1.20
Trading income as a percentage of total assets	0.14	0.10	0.50

Source: OeNB.
[1]) Broken down by origin of contribution.

loans extended directly from Austrian banks to foreign borrowers (volume: EUR 50.7 billion), the proportion going to the CEECs is lower, by comparison, than the proportion of these countries in indirect loans. 29% of direct cross-border loans were granted to borrowers in the CEECs, with borrowers in the acceding countries accounting for 70% of this share. Taken together, direct cross-border loans and indirect loans granted by subsidiaries add up to EUR 83.5 billion in foreign lending exposure. Of this amount, Central and Eastern Europe accounts for 53% (EUR 44.5 billion), with the acceding countries representing almost three quarters of this share (72.8%). This underlines the outstanding importance of Central and Eastern Europe – and here again of the acceding countries – for the Austrian banking system.

The largest credit exposure of the Austrian banking system to a single country – measured as the sum of direct and indirect unsecuritized loans to nonbanks – is the one to the Czech Republic at EUR 12.8 billion or 15.3% of total foreign exposure. Among the CEECs, the Czech Republic accounts for the highest exposure both in direct cross-border loans (EUR 3.3 billion) and in indirect loans (EUR 9.5 bil-

Table 8

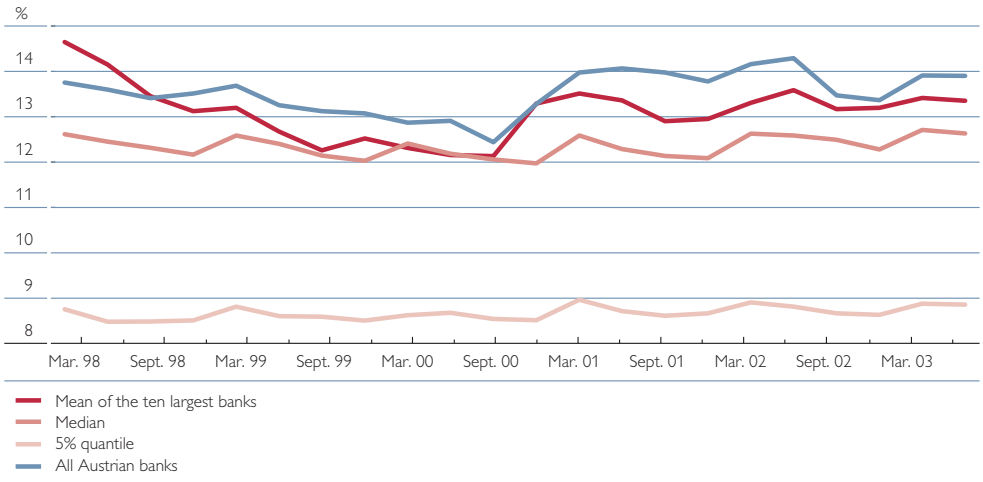
Credit Exposure to Central and Eastern European and Selected Other Countries

As of June 30, 2003	Total																
		Austria	Other countries														
				CEE acceding countries						Other CEECs				Rest of the world			
				Total	CZ	HU	PL	SK	SI	Total	HR	RU	RO	Total	DE	U.S.A.	CH
Country rating[1])		Aaa			A1	A1	A2	A3	Aa3		Baa3	Ba2	B1		Aaa	Aaa	Aaa
EUR billion																	
Direct loans[2])	214.1	163.4	50.7	10.3	3.3	2.0	2.0	1.1	1.9	4.4	2.5	0.9	0.5	36.0	7.3	4.6	4.1
%																	
Foreign share				*20.3*	*6.6*	*4.0*	*3.9*	*2.1*	*3.8*	*8.7*	*4.9*	*1.8*	*0.9*	*71.0*	*14.4*	*9.1*	*8.0*
EUR billion																	
Indirect loans[3])	32.7		32.7	22.1	9.5	4.7	3.9	2.9	1.1	7.7	4.5	0.8	0.6	3.0	0.1	×	0.0
%																	
Foreign share				*67.5*	*28.9*	*14.4*	*11.9*	*8.8*	*3.4*	*23.4*	*13.8*	*2.3*	*1.8*	*9.1*	*0.4*	×	*0.1*
EUR billion																	
Total	246.8	163.4	83.5	32.4	12.8	6.7	5.9	4.0	3.0	12.1	7.0	1.7	1.0	39.0	7.5	4.6	4.1
%																	
Foreign share				*38.8*	*15.3*	*8.1*	*7.0*	*4.8*	*3.6*	*14.5*	*8.4*	*2.0*	*1.2*	*46.7*	*8.9*	*5.5*	*4.9*

Source: OeNB, Moody's Investors Service.
[1]) Rating of foreign currency-denominated government bonds (as of September 5, 2003).
[2]) Unsecuritized loans extended to foreign nonbanks by Austrian banks.
[3]) Unsecuritized loans extended to nonbanks by foreign subsidiaries of Austrian banks.

Chart 17

Capital Adequacy (unconsolidated)



Source: OeNB.

lion). The second largest total exposure (direct and indirect lending) within the CEECs is vis-à-vis Croatia, which does not belong to the acceding countries. Next in line are Hungary, Poland, Slovakia and Slovenia. Further details are set out in table 8, which for comparison also includes the three countries that account for Austrian banks' largest credit exposure outside the CEECs. The category "Other CEECs" – which denotes those nonacceding CEECs where Austrian banks are represented by fully consolidated subsidiaries – in table 8 includes the three countries of this region with the largest share in total exposure.

Austrian Banks' Risk-Bearing Capacity

Capital Ratio Remains Stable

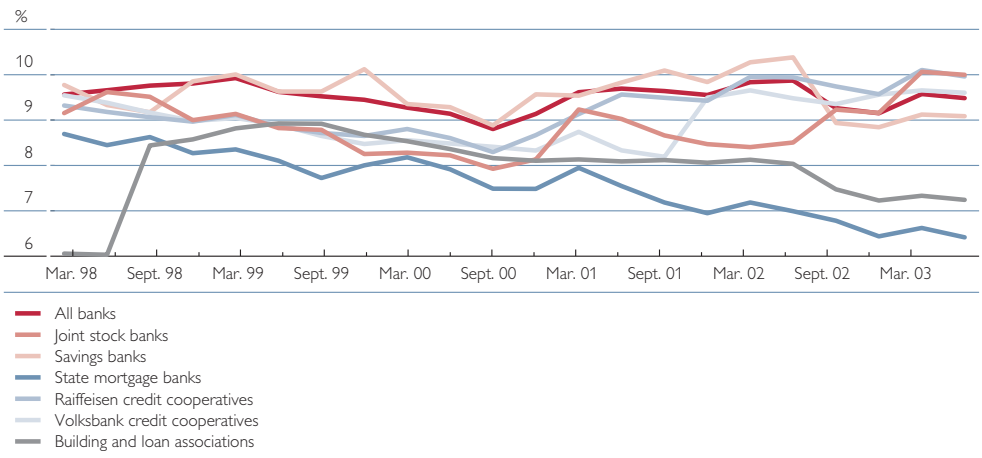
Against the background of a difficult business cycle environment, the question arises to what extent banks are able to absorb risks even over longer periods of economic weakness. An analysis of capital adequacy shows that despite persistent economic gloom Austrian banks have kept the level of their capital ratio stable over recent periods. In mid-2003, the unconsolidated capital ratio[1]) of all Austrian banks stood at 13.9% and was thus only slightly below the rate recorded at the same time in the previous year (June 2002: 14.2%, see chart 17). Austrian banks' capital ratio thus substantially exceeds the minimum legal requirement of 8%.

As in most of the preceding periods, the capital ratio of the ten largest banks (in terms of total assets) is slightly higher than the median value (see chart 17). In June 2003, the ten largest banks reported an average capital ratio of 13.3%, which was slightly below the previous year's ratio of 13.6%. The median as of June 2003 remained unchanged year on year at

1 *In this context, the capital ratio refers to the capital eligible as credit risk cover under the Austrian Banking Act (tier 1 capital plus tier 2 capital minus deductible items) as a percentage of the assessment base (according to Article 22 paragraph 2 Austrian Banking Act). The result of this calculation may differ from the capital ratios quoted in other OeNB publications, which usually also include tier 3 capital and are therefore obviously higher. However, as tier 3 capital is subordinated capital that may only be used as capital charge for market risk, it was not included below for the purpose of assessing capital adequacy in relation to credit risk.*

Chart 18

Core Capital Ratio of the Austrian Banking Sector (unconsolidated)



Source: OeNB.

12.6%. These developments show that both large banks and average Austrian banks keep their capital ratios stable over the business cycle and are apparently able to adequately absorb risks even in economically difficult times. Banks with comparatively low capital ratios have not exhibited any deterioration in their ability to carry risk, either: In June 2003, the value for the 5% quantile stood at 8.9%, which means that at mid-year 95% of Austrian banks had a capital ratio of over 8.9%. This value even increased slightly year on year.

An analysis of banks' capital ratio by banking sector shows that at the end of June 2003 special purpose banks still boasted a high capital ratio of 18.6%, followed by the savings banks sector's 14.6%. Building and loan associations reported the lowest capital ratio (9.8%).

Another ratio used in assessing the Austrian banking system's ability to bear risks is the core capital ratio, which relates tier 1 capital (core capital) to the assessment base. At the end of June 2003, the unconsolidated core capital ratio for all Austrian banks was 9.5%. The tier 1 ratio was thus slightly below the ratio of 9.9% reported one year earlier. While the core capital ratio of building and loan associations and state mortgage banks has been on the decline, the remaining banking sectors are keeping their core capital ratios broadly stable (see chart 18).

Overall, Austrian banks have maintained highly stable capital ratios over recent periods and hold adequate capital buffer even during economic downturns.

Ratings of Austrian Banks by Agencies and International Organizations

In the first half of 2003 international rating agencies (Moody's Investors Service, Standard & Poor's, and Fitch IBCA) hardly changed their assessment of the Austrian banking sector and the outlook remained stable. Among the 16 major banks for which issuer ratings are provided, the following changes were observed in the period under review until September 2003: Fitch IBCA upgraded both Erste Bank der oesterreichischen Sparkassen AG (from C to B/C) and

Kommunalkredit Austria AG (from B/C to B). In June 2003, Standard & Poor's rated Hypo Alpe-Adria-Bank AG at AA (long-term).

In spring 2003, rules were adopted governing the expiry of the Austrian regional and local governments' guarantees for the debt of state mortgage banks and local authority savings banks. The required legal changes have to be implemented by September 30, 2004, with transition periods being provided up to the year 2017. In Austria, 7 state mortgage banks and 21 local authority savings banks are affected by the abolition of these guarantees, of which only 5 state mortgage banks have been rated by international agencies. Since 1999, the European Commission has put increased pressure on the Austrian authorities to end government guarantees, which prompted rating agencies to downgrade their "outlook ratings" immediately from stable to negative. The partly excellent ratings are currently on the watch list.

The IMF Financial Sector Assessment Program (FSAP)

In a joint effort, the International Monetary Fund (IMF) and the World Bank in May 1999 launched the Financial Sector Assessment Program (FSAP) as a pilot project for 12 countries; since then the scope of the program has been continuously expanded. Work under the FSAP is conducted by IMF and World Bank experts, supported by national and international institutions, authorities and experts. A wide range of countries, including industrialized countries such as the United Kingdom, Canada, Switzerland and Germany, has so far voluntarily taken part in the program.

The FSAP aims to identify the vulnerabilities of a country's financial system to avoid crises and to determine the priorities for developing the financial sector as well as to enhance financial system efficiency. The comprehensive assessment of the strengths and vulnerabilities of a country's financial system is to help the early identification of potential issues of concern and the timely implementation of corrective measures. Another aim of the FSAP is to improve communication with national authorities.

The FSAP exercises focus on three key issues:

- *financial sector stability (a systematic analysis of the macroeconomic environment which takes into account a number of indicators, the results of stress tests, etc.);*
- *compliance with the relevant international standards and codes in the banking, insurance and securities sectors as well as in the fields of payment systems, money laundering and the fight against the financing of terrorist activities, etc.;*
- *financial market reform and essential changes (adequacy and efficiency of the supervisory framework, adequacy of the legislative framework, etc.).*

To facilitate the preparation and implementation of the FSAP exercise in Austria, the Financial Market Committee in spring 2003 established a joint FSAP secretariat, in which one representative each of the Federal Ministry of Finance, the Financial Market Authority and the OeNB work as coordinator and contact person for all Austrian and foreign institutions involved (FSAP-Austria@fma.gv.at).

Two working visits of IMF delegates to Vienna, which include meetings with experts from the Federal Ministry of Finance, the Financial Market Authority and the OeNB as well as from Austrian banks, insurance companies, interest groups, external auditors, etc., are scheduled for October and December 2003. At the end of the second visit, the IMF delegates will submit a draft report, which will be discussed with representatives of the three involved institutions. The FSAP for Austria will be concluded in the course of the regular IMF Article IV Consultation in the first half of 2004. The results of the FSAP are planned to be published in an abridged final report.

Insurance Companies

Market Developments and Business Activity

After years of falling revenues, insurance companies both at the European and at the Austrian levels seem to be regaining some ground, which has also been mirrored by the upward trend of the DJ EURO STOXX Insurance Index since the beginning of 2003. Although certain rating agencies[1]) maintain that the financial situation of (particularly German) life insurance companies has not been showing signs of improvement, the company data of the 50 largest European life insurers indicate that a slight recovery has been underway. Gross premium income, for instance, increased, implying that there is renewed optimism in the industry. The stock market turmoil seen over the past few years severely affected the life insurance business. However, now that capital markets have been picking up, investment returns have also been improving. Still, it must be noted that sliding stock prices had prompted investors to shift their portfolio compositions towards lower-risk instruments; having thus reduced the share of stocks in their portfolios, insurers can now reap only part of the advantage from the stock markets' recovery. With bond yields at low levels, investment in lower-risk securities is not considered too promising either. The brighter outlook for premiums notwithstanding, it would therefore be too early to speak of a sustained recovery of the European insurance business.

Claims from natural disaster, corporate bankruptcy and asbestos victims weighed heavily on European nonlife insurers. This branch of the insurance industry, however, was able to adjust more easily to market developments through premium hikes. Also, it benefited from increased demand for insurance products.

In line with developments at the European level, the Austrian insurance industry has recorded improving results recently. According to the semiannual reports of the major Austrian insurance companies, premium income in both the life insurance and the nonlife insurance segments rose in the first few months of 2003 against the same period of the previous year. The property/casualty sector on the one hand benefited from increased premium income in the auto insurance sector and on the other hand faced more claims because of the severe storms and hail of spring 2003. The development of stock prices of the Austrian insurers listed on the Vienna exchange has been broadly stable since the beginning of 2003.

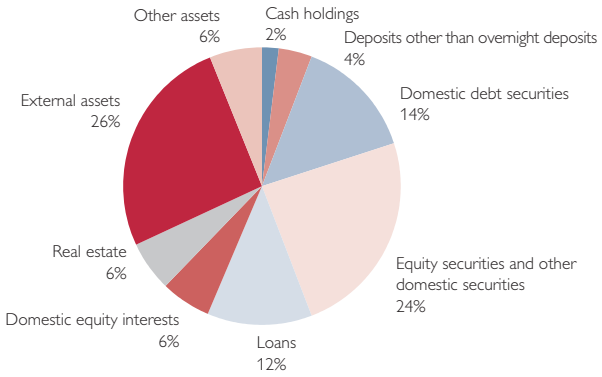
Austrian insurance companies' assets (excluding reinsurance transactions) expanded by 2.2% to EUR 60.6 billion in the second quarter of 2003 against the previous quarter, which marks another increase after the 1.7% rise recorded in the first quarter.

For the domestic market leaders, their activities in Central and Eastern Europe have been playing an increasingly important role. The subsidiaries and participations abroad posted – partly remarkable – increases in premium income, contributing up to 28% to total premium income. After enlargement, the Central and Eastern European markets are expected to hold a large growth potential particularly for life and health insurers. Apart

1 *See FitchRatings' special report "Deutsche Lebensversicherer: Kein Ende der schwierigen Lage in Sicht – Solvency II weit entfernt," published on September 30, 2003.*

Chart 19

Breakdown of Assets[1]) of Austrian Insurance Companies as of end-June 2003



Source: OeNB.
[1]) Assets excluding reinsurance transactions.

from expanding their own distribution networks, insurance companies are likely to seek closer cooperation with partners in the banking industry.

No Spillover Risks for the Austrian Banking Sector

Austrian insurers' investment patterns continue to show a preference for domestic assets. Deposits other than overnight deposits with Austrian banks expanded by a remarkable 83% against the previous quarter. Thus, the share of bank deposits in insurance companies' total assets has doubled to 6% since end-2002. Investors apparently opted mainly for quasi-money market instruments, owing to uncertain capital market developments and low bond yields.

Investment in debt securities issued by Austrian banks expanded by 4%; the increase in this category thus clearly trailed the 13% rise recorded in the first quarter of 2003. At EUR 8.5 billion, domestic debt securities account for 14% of total investment assets. Investment in domestic equity interests was also on the rise (by some 11%). Accounting for 26% of total investment assets, external assets continue to be the most important investment category, even though its amount has hardly changed since the end of 2002. The second largest investment category, representing a share of 24%, are equity securities and other domestic securities, which, however, have recorded a slight downturn since the beginning of 2003. As in previous years, lending continued to slow down, mainly because government borrowing subsided further.

Insurance technical reserves, which reflect insurers' liabilities against their subscribers, account for the lion's share of liabilities. In the second quarter of 2003, insurance technical reserves amounted to EUR 55.6 billion, thus representing around 85% of total liabilities. Life insurance companies held the largest share (close to 77%) of these reserves, namely EUR 42.8 billion, the share of property/casualty insurance came to 18%, while health insurance accounted for 5%.

The capital market recovery seen so far this year as well as increasing premium income have contributed considerably to stabilizing the situation of the Austrian insurance industry. Appropriate supervisory measures were

an additional positive impetus. The Maximum Interest Rate Regulation[1]) provided for the reduction of the maximum interest rate for calculating technical reserves for life insurance contracts from 3.25% to 2.75%. Hence, there is no evidence that the insurance industry constitutes a burden on the profitability of the Austrian banking sector in particular. With loans to the Austrian insurance industry totaling EUR 1.6 billion (accounting for a share of less than 1% of total large exposures), banks are not exposed to heightened credit risk, which is also confirmed by banks' very good credit ratings for insurance companies. Equally, the increased use of financial instruments to transfer credit risk between the banking and the insurance sectors does not pose a major threat to financial stability in Austria. At the European level, the stepped-up use of credit derivatives is considered to be a major cause for concern, in particular because market participants lack experience with this instrument. However, credit derivatives have not been traded extensively in the Austrian market. Moreover, their use is subject to supervisory law.[2])

Other Financial Intermediaries

Pension Funds

The unfavorable economic environment of the years 2001 and 2002 has presented the greatest challenge to Austrian pension funds since they were established, putting them under massive pressure. According to the Austrian occupational pension fund association investment performance averaged –6.3% in 2002. In reaction to the changed economic conditions, pension funds reduced their equity shares and increasingly invested in low-risk bonds and structured products.

Legislators also took account of the new environment and in summer 2003 adopted a reform of the Austrian Pension Fund Act. The main aspects of the amendment include a change in the system of capital grants for premium reserves to continuous grants for pensions, the establishment of a minimum yield reserve according to the capital requirements of the EU Directive[3]) under which pension funds are obliged to build up reserves for securing the accrued rights to benefits of active and retired pension plan members, and the introduction of new valuation methods in accordance with international standards. Moreover, the Financial Market Authority may determine by regulation maximum percentage rates for the assumed interest rate for new pension contracts and will thus be prepared to respond more flexibly to future capital market developments.

After the low yields of the past few years, a rebound is expected for 2003, which is mainly attributable to new dynamics in the financial markets. Whereas investment performance was weak at the beginning of 2003, it picked up considerably in the first half of the year; by mid-2003, the investment performance of

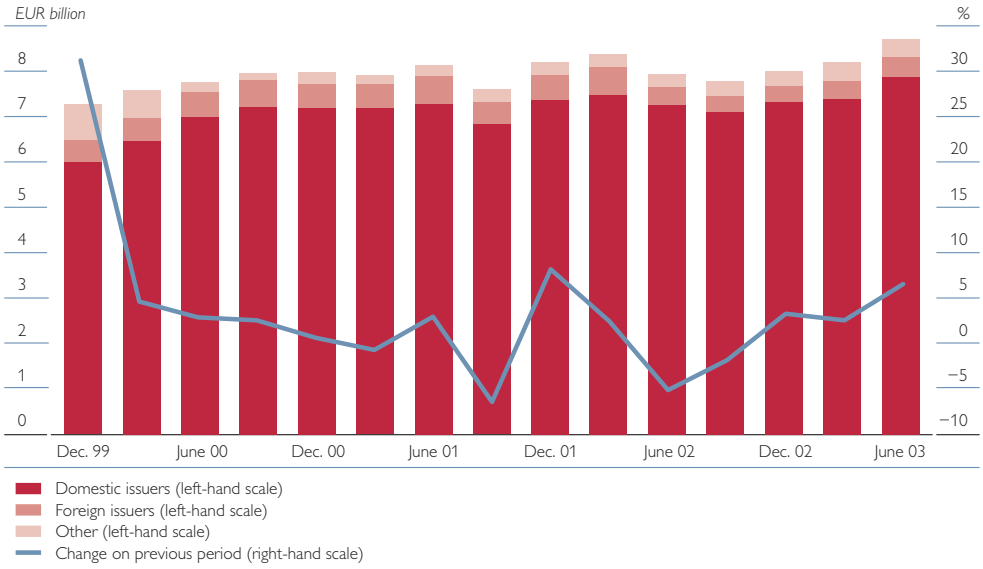
1 *This Regulation enters into force on January 1, 2004. The new interest rate is applicable to new insurance contracts only and not to index adjustments in existing contracts. Furthermore, it is applicable to conventional life insurance contracts only and not to unit-linked life insurance contracts.*

2 *Credit derivative trading by insurance companies is subject to the regulation of the Financial Market Authority on investment for the coverage of insurance technical reserves by insurance companies.*

3 *Directive 2003/41/EC of the European Parliament and of the Council of June 3, 2003 on the activities and supervision of institutions for occupational retirement provision.*

Chart 20

Assets Held by Austrian Pension Funds



Source: OeNB.

Austrian pension funds ranged between 3% and 4.5%. Despite relatively modest growth over the past few years, demand for occupational pension schemes persists. By May 2003, another 300 companies had introduced pension plans, thus the number of active and retired pension plan members has increased by about 5%.

Total assets under management by Austrian pension funds augmented to EUR 8.6 billion by mid-2003. An increase of around 6% against the previous quarter means a continuation of the upward trend which began at the end of 2002.

Whereas the share of domestic issuers' debt securities denominated in euro decreased by about 30%, the position "other securities of domestic issuers" recorded a marked increase of approximately 170%. Although this investment category displayed a high degree of volatility in the past, the increase is remarkable and may be attributable to the recovery of the stock markets. Deposits also posted a decline of around 6% against the previous quarter. In addition to falling interest rates in all deposit categories, institutional investors' renewed confidence in international financial markets is likely to be responsible for the shift in investment strategies.

The majority of assets continue to be invested in securities of domestic issuers; accounting for around 93% of total investment assets, mutual fund shares continue to be the most important category.

Nonfinancial Corporations

Earnings Prospects Slightly Better

According to the fall economic outlook of the Oesterreichische Nationalbank (OeNB), the Austrian economy will grow by 0.9% (i.e. 0.2 percentage point more than forecast in the spring) in 2003. The optimistic economic outlook should have a positive effect on corporate earnings prospects. Among other things, the OeNB fall economic outlook sees aggregate investment increase by approximately 2.8% in real terms in 2003 (in 2002 aggregate investment fell by 4.7%).

Low Demand for External Funding – Companies Borrowed Less from Banks

So far the revival in corporate investment has not fed through to corporate loan demand in 2003, even though financing conditions are favorable. When output growth started to slow down in 2001, loan growth started to slump as well, and since the beginning of 2003 it has even been negative.

From a supply perspective, the setback in loan demand reflects the greater caution banks have exercised in lending amid the economic downturn, as is evident from the results of the bank lending survey for Austria. At the same time, banks have increased the margins they apply to higher-risk loans. This ties in with the fact that the interest rate spread between corporate loans and interbank loans, which may serve as an indicator of credit risk in the business sector, has been widening since the beginning of 2003 (chart 21).

What may have played a bigger role is that low investment demand continues to dampen demand for external financing; in other words, the slowdown in loan growth largely reflects demand-side developments. In 2002 alone, internal corporate financing as a ratio of gross capital formation is estimated to have climbed to more than 80% owing to weak investment activity, thus reducing the need for external financing to EUR 5 billion, the lowest level since the mid-1990s. According to preliminary calculations, this tendency became even more pronounced in the first half of 2003, as a

Chart 21

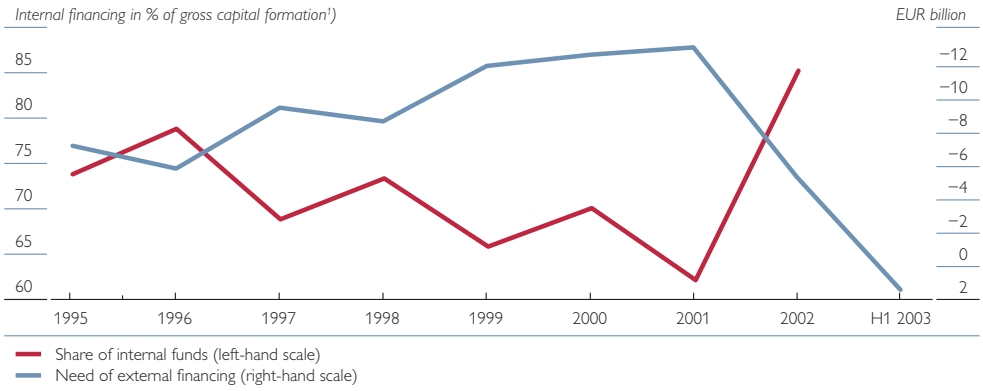
Corporate Loan Growth

Source: OECD.

[1]) Difference between rates for commercial loans and 5-year interest rate swaps.

Chart 22

Nonfinancial Corporations' Funding Sources



Source: Statistics Austria, OeNB (financial accounts).
[1]) Partially estimated for 2002.

result of which the corporate sector recorded a financing surplus (EUR 1.5 billion) for the first time ever.

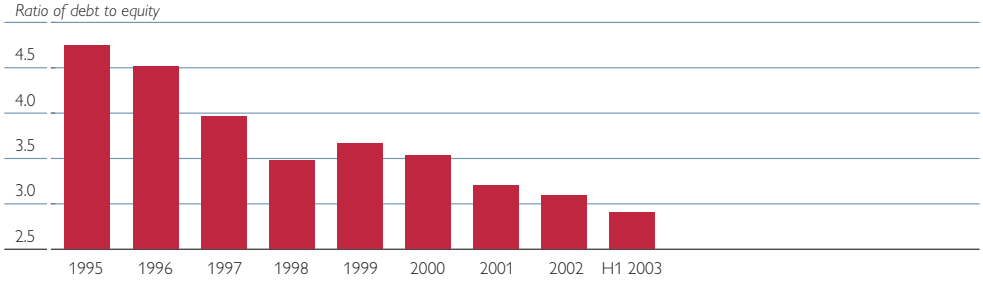
Leverage Ratio Lower

The currently low propensity to borrow also reflects the restructuring of balance sheets that has been observed since the mid-1990s in all phases of the economic cycle. The primary objective of this process is to change the capital structure so as to reduce the share of debt financing and increase the share of equity financing. Above all against the background of the currently weak sales growth, this change in the capital structure has had a positive impact on the solvency and liquidity risk of companies. After all, the interest burden increases as sales decline, thus augmenting the risk associated with borrowing (leverage risk). This risk exists also under the current low interest rate conditions because fixed rate long-term loans taken out earlier are weighing on profits.

The international comparison depicted in chart 24 shows that Austria has some way to go when it comes to corporate balance sheet restructuring. The data, even though not available beyond 2001, indicate that in the other euro area countries businesses do not rely as heavily on borrowing for investment. It should be noted that a cross-country comparison of corporate ratios creates a whole set of inter-

Chart 23

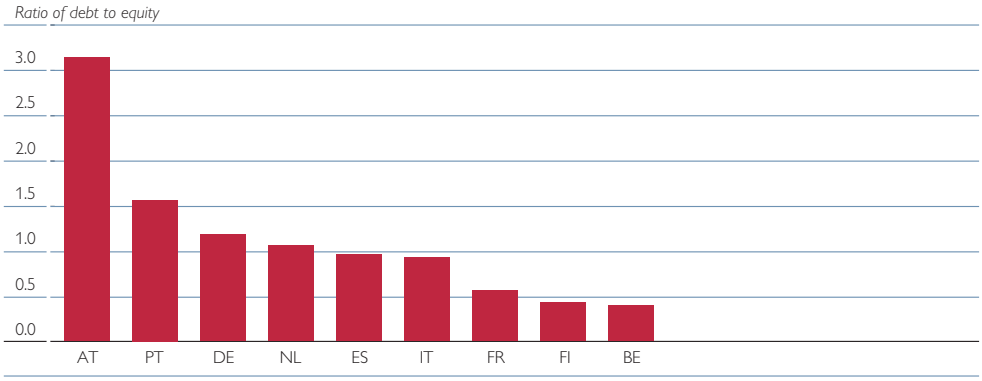
Leverage Ratio of Nonfinancial Corporations



Source: OeNB (financial accounts).

Chart 24

Leverage Ratio of Nonfinancial Corporations in 2001
in a International Comparison



Source: Eurostat.

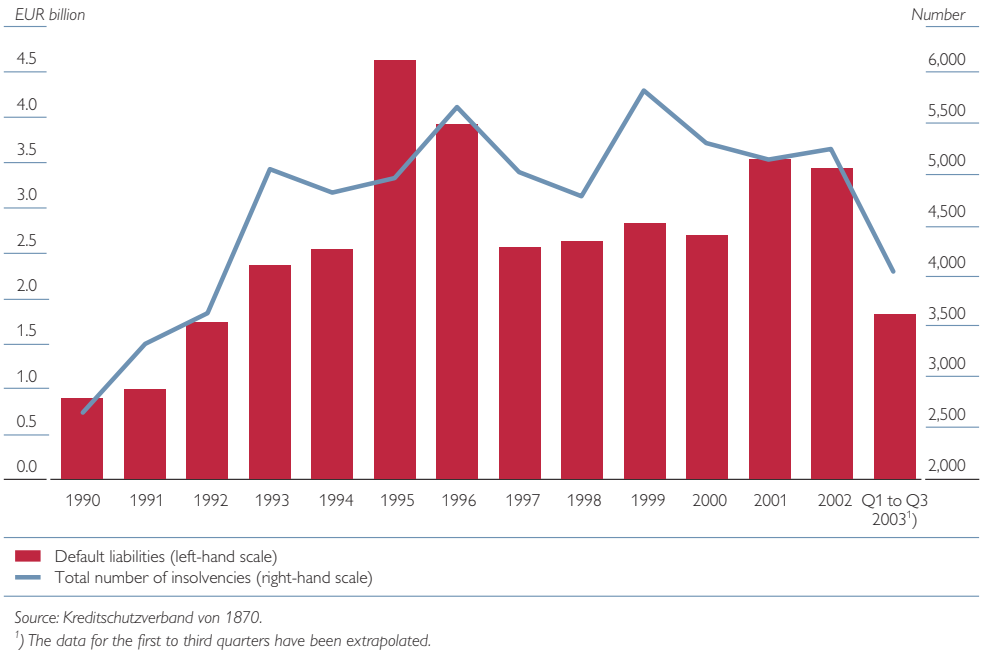
pretation problems, though. Different underlying factors drive the financing behavior of the corporate sector, thus giving rise to a specific capital structure. The latter will be shaped, for instance, by the combined effect of tax provisions, the development of bond and loan markets and relevant standards as well as the relationships between companies and banks.

Risk-Bearing Capacity Strengthened by Higher Share of Equity Financing

Overall, the corporate sector can be considered to have a strong financial position despite the prevailing high leverage ratios. The measures taken since the beginning of the mid-1990s, which dampen the borrowing propensity and are aimed at encouraging businesses to raise capital in equity

Chart 25

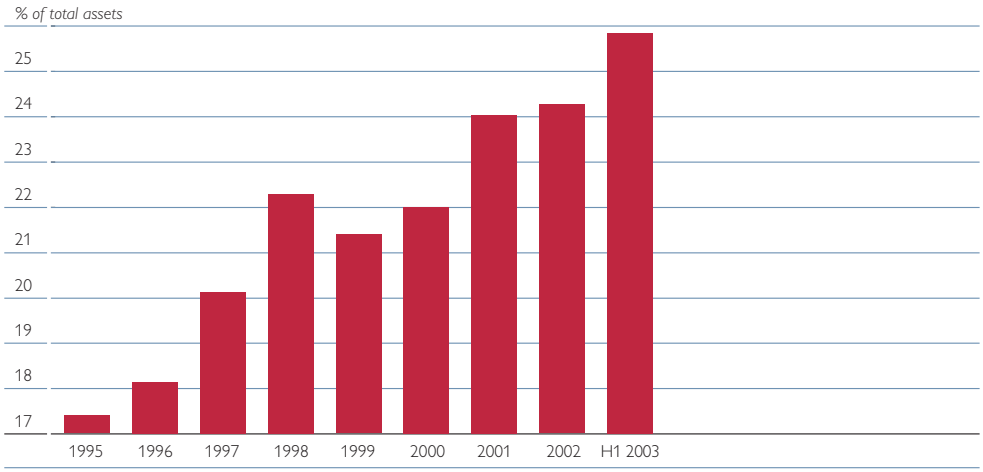
Corporate Bankruptcies in Austria



Source: Kreditschutzverband von 1870.
[1]) The data for the first to third quarters have been extrapolated.

Chart 26

Equity Ratio of Nonfinancial Corporations



Source: OeNB (financial accounts).

markets, have shown positive results especially amid the current external economic conditions. As a case in point, the number of corporate bankruptcies increased by just 1.4% in the first three quarters of 2003 compared with the same period of 2002 according to preliminary estimates of the credit information company Kreditschutzverband von 1870. Mirroring the marked decline in the annual number of bankruptcies, the volume of default liabilities has decreased as well, in the year to date by as much as approximately one-third.

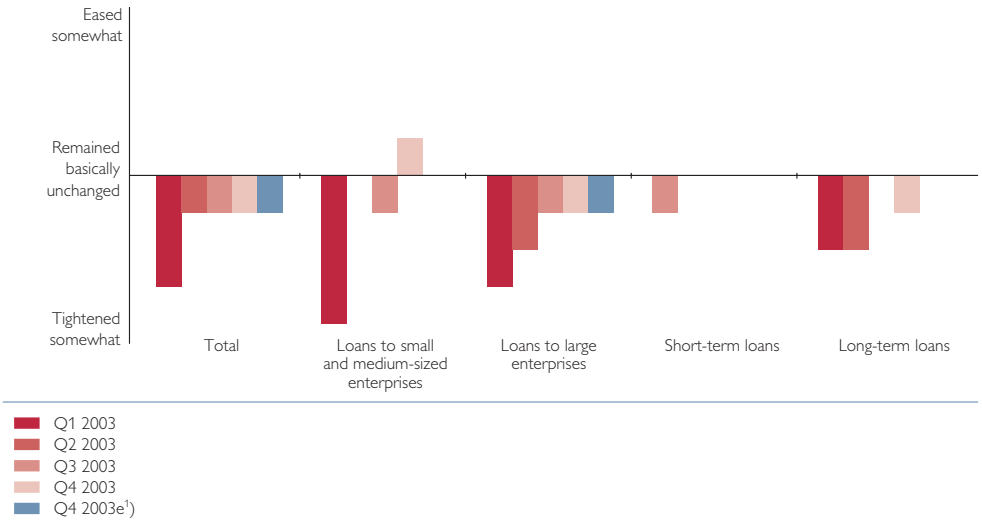
The ongoing change in the capital structure will contribute to making the corporate sector more resilient to economic shocks. The higher share of equity financing will also strengthen the risk-bearing capacity of companies. This has a positive effect on creditworthiness and makes it easier for companies to take out new loans or reschedule outstanding loans to ease liquidity constraints arising in bad economic times. After all, as long as companies have adequate equity to cushion potential losses in individual asset positions, external investors should be prepared to provide them with the necessary liquidity. At the same time, a higher equity ratio is the key to controlling profitability. While debt must be serviced – and is thus a drain on earnings – no interest payments are due on equity. This is an asset in bad economic times and helps avert a deterioration in liquidity conditions. At any rate, reducing leverage and increasing the equity ratio ensures the long-term financial stability of the corporate sector. Companies thus not only become more resilient to economic risks but also enhance their creditworthiness, which stands to become more significant in the lending process once the new capital adequacy framework (Basel II) has been implemented.

Bank Lending Survey

The results of the bank lending survey for Austria that are available so far indicate that the lending behavior of Austrian banks became somewhat more restrictive in the course of 2003. Overall, the banks surveyed

Chart 27

Change in Credit Standards Applied to the Approval of Loans to Enterprises over the Respective Past Three Months



Source: Bank lending survey.
[1]) Indicates how credit standards are expected to change over the following three months.

tightened notably the credit standards they apply to the approval of loans or credit lines to enterprises. More specifically, this concerned loans to large enterprises, whereas credit standards for loans to small and medium-sized enterprises (SMEs) were gradually eased as the year progressed. In October 2003, the bank managers polled expected to further tighten their overall credit standards somewhat over the next three months (see chart 27).[1])

The most important factor contributing to the tightening of credit standards was risk perception. Moreover, the banks surveyed reported that expectations regarding general economic activity, the industry or firm-specific outlook and risk on the collateral demanded mainly impacted on their decisions. Apart from credit standards, banks also continued to tighten their credit terms and conditions for businesses. Above all, banks widened their margins on riskier loans in comparison with the previous quarter.

At the same time, the banks surveyed reported corporate demand for loans – especially SME demand – to have increased somewhat since mid-2003. Above all the need to finance inventories and working capital contributed to higher demand, whereas the development of fixed investments und the issuance of debt securities had a dampening effect on demand for loans. Looking ahead, the banks surveyed expected loan demand – especially from SMEs – to increase somewhat in the fourth quarter.

1 *As agreed upon with the ECB, the respective quarters are numbered according to when the survey is conducted. This means that the latest survey is that of the fourth quarter, even if it captures developments of the third quarter.*

Chart 28

Change in Demand for Loans to Enterprises

over the Respective Past Three Months

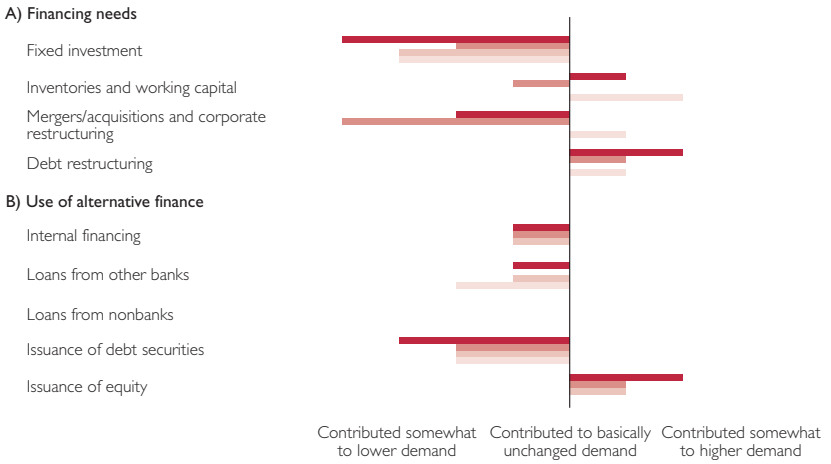
Q1 2003
Q2 2003
Q3 2003
Q4 2003
Q4 2003e[1])

Source: Bank lending survey.
[1]) Indicates how demand is expected to change over the next three months.

Chart 29

Factors Affecting Demand for Loans to Enterprises

over the Respective Past Three Months



Q1 2003
Q2 2003
Q3 2003
Q4 2003

Source: Bank lending survey.

Households

Job Uncertainty and Higher Individual Saving for Retirement May Push Up the Saving Rate

The development of household investment and financing continues to reflect the weakness of the Austrian economy. While disposable income growth was very moderate in 2002 (1.4% in real terms according to the OeNB's fall economic outlook), and is projected to grow at an even lower rate (1.0%) in 2003, households may be building up more precautionary savings in view of the higher risk of job loss. Moreover, the pension reform may boost household saving rates – provided that increased saving for one's own retirement goes beyond a restructuring of households' investment portfolios from short-term to long-term saving; in other words, provided that households actually save more. According to OeNB calculations, the household saving rate reached 7.8% in 2002, which is rather a marked slowdown compared with the rate registered in 1995 (11.7%). However, the saving rate is expected to rebound somewhat over the medium term; it should rise to 7.9% until 2005 according to OeNB projections.

Debt Growth Eased Considerably

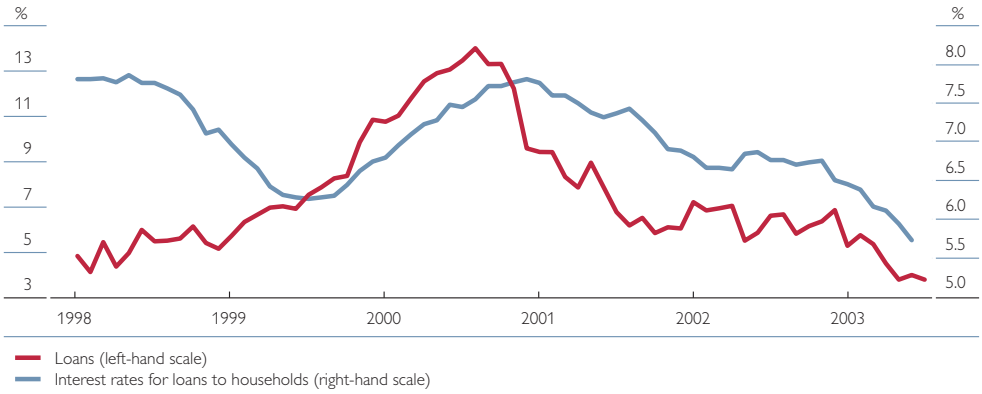
Household loan growth slowed down significantly in the first half of 2003. Even though financing conditions have been most favorable, household demand for loans has been rather moderate. Apparently the ongoing weakness in the Austrian economy, now well into its third year, has significantly affected the income outlook of households and led them to readjust their borrowing behavior to the current external conditions. Given that the volume of household debt was on the rise until 2002, households would be well advised not to borrow more for the time being to finance consumption and real estate purchases even though interest rates are low, in order to avoid liquidity constraints or becoming overindebted.

Low Interest Rate Levels and Financial Market Uncertainty Boost Liquidity Holdings

According to preliminary calculations, households continued to expand their liquidity holdings in the first half of 2003. At EUR 4.1 billion, cash holdings and deposits accounted for more than half of the financial assets households accumulated in this period. At

Chart 30

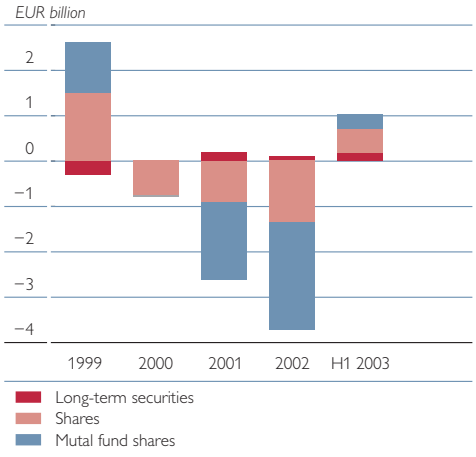
Growth of Loans to Households



Source: OeNB.

Chart 31

Valuation Gains and Losses of Households[1])



Source: OeNB (financial accounts).
[1]) Partially estimated; no data are available for periods before 1999.

the same time, households were investing less in capital market instruments, probably on account of the price losses seen in recent years. A case in point are mutual fund shares, which totaled EUR 278 million in the first six months of 2003 after having been far more popular in recent years. Once the growth outlook brightens, the capital markets may, of course, reattract a bigger share of financial investment. At any rate, the major international stock markets have rebounded since the beginning of 2003. Private investors benefited from valuations gains of roughly EUR 1 billion in the first half 2003.

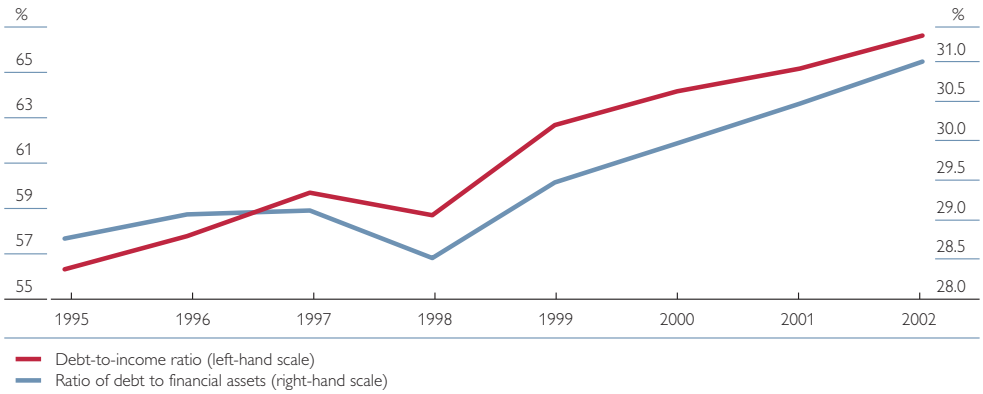
High Indebtedness and Negative Wealth Effects Affect the Financial Capacity of Households

The levels of debt incurred by households peaked in 2002, after having risen considerably faster than disposable income since the second half of the 1990s. Over the same period, the relation between households' financial liabilities and their financial assets has increased less significantly (see chart 32). The marked increase in private bankruptcy cases in recent years may imply that the default risk has risen in the household sector. In the first three quarters of 2003 private bankruptcies rose by 3,175 cases or 11.1% compared with the corresponding period of 2002. As a percentage of all households who have taken out loans, the number of defaulting borrowers is, however, low.

An international comparison shows that household debt ratios continue to be comparatively low in Austria. In 2001, Austrian households

Chart 32

Debt Ratio of Households



Source: Statistics Austria, OeNB (financial accounts).

Table 9

International Comparison of Household Debt Ratios

	1995	2001	Increase since 1995
	Debt in % of GDP		*in percentage points*
Belgium	42.5	45.3	2.8
Germany	63.5	73.3	9.8
Spain	44.0	60.6	16.7
France	42.5	46.4	3.8
Italy	23.3	30.7	7.4
Netherlands	62.5	95.5	33.1
Austria	35.8	40.2	4.5
Portugal	44.1	82.2	38.1
Finland	37.4	34.0	–3.4
Total	48.0	56.7	8.7

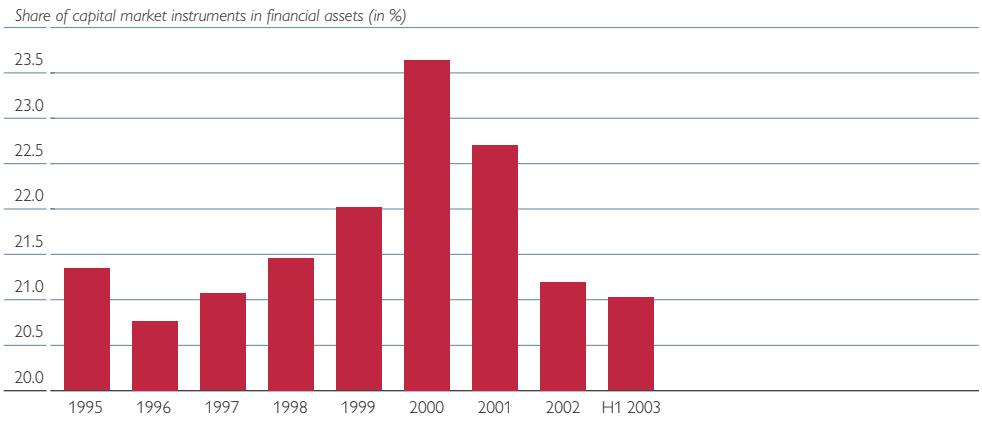
Source: Eurostat.

ranked third within selected EU countries shown in table 9 with a debt-to-GDP ratio of 40.2%, after Finland with 34.0% and Italy with 30.7%. As is evident from table 9, the propensity to borrow differs a lot across countries. These differences largely reflect country-specific characteristics, such as preferences for home ownership, real estate prices, building costs and access to loan markets. With respect to debt growth, Austria is in the lower middle range. The debt ratio of Austrian households grew by 4.5 percentage points from 1995 to 2001, which is just half the increase in the EU total shown here (8.7 percentage points).

Apart from the fact that the high debt ratio weighs more heavily on households in the present economic downturn, the financial capacity of households has also been affected by price losses suffered between 2000 and 2002. Total price losses in this period came to EUR 7 billion, thus more than offsetting the price gains of EUR 2.6 billion achieved as late as 1999 (see chart 31). Heavy demand for foreign currency loans for which mutual fund plans or unit-linked life insurance plans are used as repayment vehicles, as well as increased saving for one's own retirement with second and third pension pillar instruments have raised the significance of capital mar-

Chart 33

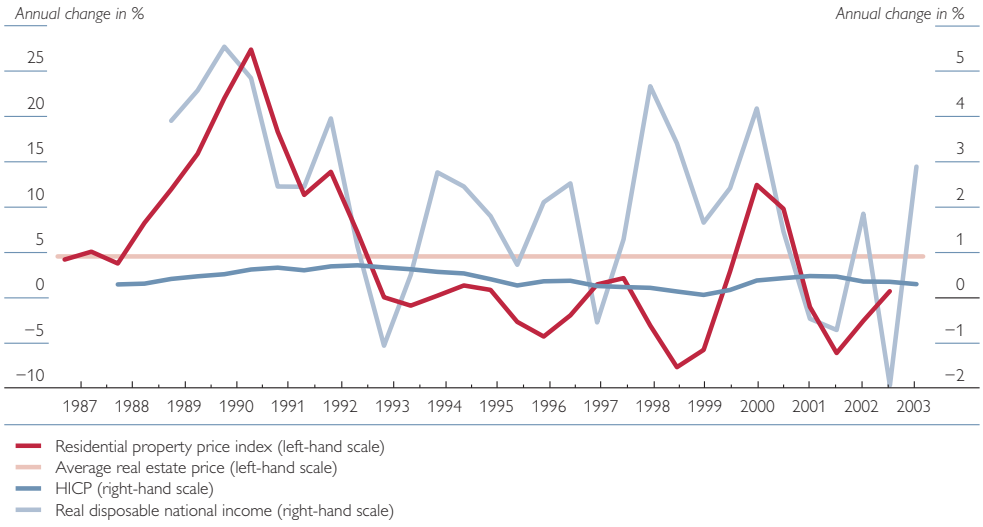
Market Sensitivity of Households' Financial Investment



Source: OeNB (financial accounts).

Chart 34

Real Estate Prices, Income and HICP



Source: Statistics Austria, Vienna University of Technology, Ametanet.

ket developments for households. The share of capital market instruments in the financial assets of households has decreased since 2000, largely because of the valuation losses suffered thereafter; in 2002, it basically reverted to the level of the 1990s.

Real Estate

Residential Building Activity Strengthened Somewhat Since the Beginning of 2003

Reflecting the downtrend in the number of building permits issued from 1998 to 2001, the number of housing completions deteriorated further by 8.6% in 2002. Given that the number of building permits rose in 2002 for the first time in five years (5.1% against 2001), the downturn in building completions may bottom out in 2003. This ties in with the latest WIFO Economic Outlook,[1]) according to which construction companies have come to assess their current production activity a lot better than they used to.

Reflecting, among other things, the sharp drop in building permits, housing prices have been edging up again[2]) since mid-2001 (in the second quarter of 2002 they grew by 1.7%). Nonetheless, they remain below the long-term average.

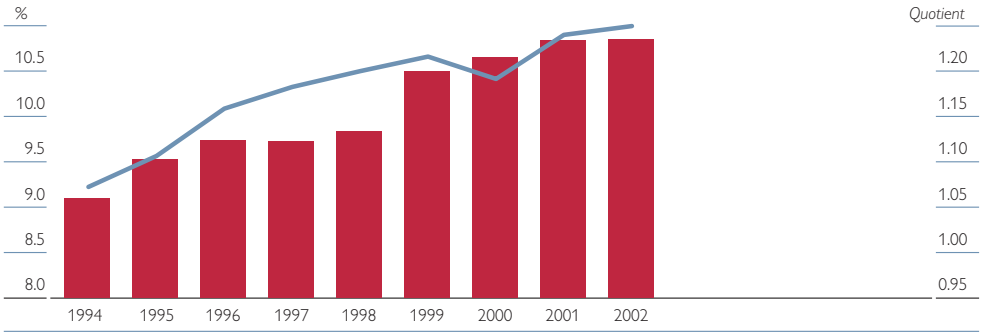
Rising Investment in Real Estate

In recent years real property has gained in importance as an investment instrument. On the supply side, the Real Estate Investment Funds Act adopted in July 2003 paved the way for the operation of open-end real estate funds[3]) in Austria, thus broadening the range of investment and

1 *These findings are based on the WIFO outlook, as current production data have not yet become available.*
2 *Property prices last rose in the first half of 1999.*
3 *Unlike with closed-end funds, shares in open-end funds can be bought and sold back to the fund at all times. Share prices depend on the current estimated value of the real estate portfolio. Should more than 10% of the investment capital be returned for repurchase at the same time, the mutual fund company may delay the repurchase for a maximum period of two years.*

Chart 35

Property Rental versus Ownership Cost[1])



Source: Statistics Austria.
[1]) Rental cost divided by cost of home ownership. The rising ratio (+18 percentage points in the period covered) implies that housing cost have climbed considerably.

financing possibilities available to investors by domestic real estate funds.

Recent developments include steps taken by the federal government with a view to selling its public housing stock (62,000 apartments). Already the budget trailer bill of 2001 provided for the revocation of nonprofit status of the five housing companies owned by the federal government. This means that any apartments managed by those companies lose their nonprofit status upon rerental, a fact that raises their attractiveness to investors. The Federal Real Estate Company (Bundesimmobiliengesellschaft) estimates the proceeds from the sale of the 3,500 apartments that have not been sold so far to total more than EUR 100 million in 2003 (overall, the privatization of public housing is expected to generate between EUR 600 million and EUR 900 million). The first round of privatization met with high international interest. The public housing sale is unlikely to generate price pressures on the real estate market, because properties in prime locations and in conurbations will most certainly be purchased by the tenants themselves.

As the financial wealth of households increased and as rental costs (+35%) rose more sharply than the cost of home ownership (+16%) from 1994 to 2002, the home ownership ratio climbed as well (see chart 35).

However, not only properties held for own use, also properties held for investment/income have gained in attractiveness. Buy-for-rent apartments[1]) evidently appeal to long-term investors because of their low-risk and stable-yield characteristics as an alternative to investment in the capital market – even more so in times of falling stock prices and low interest rates. While detailed data on this business segment are not available, the fact that the number of properties bought for investment/income jumped by about 50% in 2002 alone according to industry information gives a rough idea of recent developments.

The gains of buy-for-rent investors are derived from rental income, valu-

1 *Buy-for-rent properties are residential units that are designed and built specifically for the purpose of generating rental income.*

ation gains and tax benefits. By renting out a home, the owner becomes a business owner within the means of VAT legislation. As such, he or she may claim input tax credits, thus actually purchasing the property at net cost. With respect to rental income, income tax credits can be claimed for interest on debt capital, depreciation expenses and other expenditures. The tax credit system has been designed to reduce tax liabilities particularly in the first few years after which an investment has been made (initially the tax credits for expenditures even exceed the rental income).[1]) In addition, gains from the sale of homes are exempt from income tax when the property is resold after a minimum period of ten years.

The expected yield of buy-for-rent properties depends on the valuation gains and the amount of rental income.[2]) Given low rates of inflation (rents tend to be linked to the CPI), neither house values nor rental values have increased significantly in recent years. Scientific evidence[3]) shows that the rate of value increase of new properties is key to the yield of buy-for-rent schemes. The 1990s saw prices fall (or remain constant) rather than rise, however, and it is only since mid-2001 that prices have picked up moderately.

Apart from a rather high yield risk, buying for rental income tends to carry a high liquidity risk. Real estate is considerably less liquid an asset than, say, securities. Moreover, the transaction costs of reselling a property are substantial. In addition, liquidity constraints arise from the high up-front costs and long amortization periods, as well as from the fact that speculation tax is levied should properties be resold within a period of ten years.[4])

Finally, properties for investment/income allow little or insufficient diversification of assets; generally, investors' capital is locked in a single property or a few properties.

All in all, the share of real estate in households' assets is on the rise. At the same time, financing rental housing and home ownership is a key motive for taking out a loan. Buy-for-rent investors, too, tend to rely heavily on debt financing.[5]) Consequently, real estate developments affect the wealth of households to an ever increasing degree. While (unlike stock market investors) real estate investors did not suffer wealth losses in recent years, it must be noted that such investments are not free from the risks mentioned above, either.

Stock Market

The Macroeconomic Significance of the Austrian Stock Market

Medium-term stock price changes may affect investment demand by changing the financing costs of companies and their balance sheet values.

1 *Investors failing to generate a surplus over the investment horizon face a retroactive tax bill.*

2 *Periods in which a property is not rented reduce income. Another pitfall is that, following an adjustment of tenancy legislation, tenants need no longer commit themselves for long rental periods; now, they have the right to cancel a rental agreement as early as one year after the contract date. This may lead to more frequent tenancy changes and longer vacancy periods.*

3 *See Fischer, E. O. and M. Glawischnig. 2003. Die Rendite von Vorsorgewohnungen. Karl-Franzens-Universität Graz. March.*

4 *Gains from the sale of homes during this minimum holding period of ten years are subject to speculation tax.*

5 *The tax deductibility of interest payments on debt is an additional incentive for borrowing heavily to invest in properties.*

Companies financed an average of 3.7% of their gross fixed capital formation from 1993 to 2002 through new issues and rights issues (i.e. the issue of new shares for cash to existing shareholders) at the Vienna stock exchange. As is evident from chart 36, above all in the 1990s, new issues were by far the biggest source of equity funding raised through the Vienna stock exchange. New issues result in a change of ownership and are not necessarily used to finance new investment (privatizations being a case in point). The share of rights issues, by contrast, accounted for just 1.1% of gross fixed capital formation on average. In the period from 1993 to 2002, an average of 14.4 companies per year[1]) raised funds at the Vienna stock exchange either through new issues (4.9 companies) or through rights issues (9.5 companies).

Wealth-induced consumption growth – i.e. the wealth effect on consumption generated by household portfolios of stocks listed at the Vienna exchange – is low. In the period from 1995 to 2002, households held about 3% on average of their financial assets in the form of domestic shares and other equity (excluding mutual fund shares).[2]) Based on the latest available data for 2002, this corresponds to a volume of EUR 10.3 billion. Of the approximately EUR 28.6 billion invested with mutual funds, roughly 3.3% (or EUR 0.9 billion) were, in turn, invested in shares and other equity (excluding mutual fund shares). In 2002, households thus (directly or indirectly) held approximately EUR 11.2 billion of their financial assets in domestic shares and other equity. According to the few empirical studies[3]) available for comparable countries (mostly Germany and Finland), the marginal propensity to consume is estimated to equal roughly 2 cent for each euro by which the value of stock holdings rises. Thus, the increase of 27.3% in the ATX in the period from October 1, 2002, to October 1, 2003, would have boosted consumer demand by roughly EUR 61 million. As a ratio of nominal volume that private consumption reached in 2002 (EUR 124.86 billion), this corresponds to an increase by a mere 0.05%.

Initiatives to promote the Austrian capital market have been marred, among other things, by incidents of suspected insider trading. Moreover, market participants expect the impact of the subsidized personal pension scheme (the *Zukunftsvorsorge* scheme) to be largely limited to indirect effects initially. The Vienna stock market may become more interesting to foreign institutional investors due to the steady flow of funds generated by this scheme. Finally, the Austrian Code of Corporate Governance, a set of good corporate management standards designed to increase transparency for

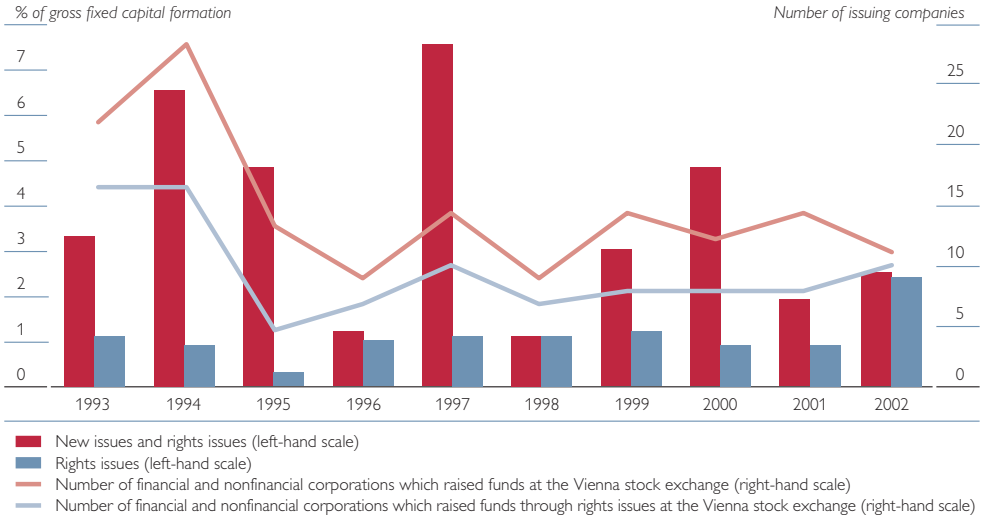
1 *These findings should be related to the 5,439 companies on average with more than 49 employees in the period for which data are available (1997 to 2001).*

2 *This figure includes inward FDI holdings as well as listed and unlisted stocks, thus representing an upper limit of direct equity holdings.*

3 *Clapham, E., A. Hyytinen and K. Takala. 2002. Household Wealth, Credit and Consumption: Evidence for Finland and Sweden. Bank of Finland. Mimeo.*
International Monetary Fund. 2000. World Economic Outlook – Asset Prices and the Business Cycle. Washington D. C.
Boone, L., C. Giorno and P. Richardson. 1998. Stock Market Fluctuations and Consumption Behavior: Some Recent Evidence. OECD Working Paper (98)21. Paris.

Chart 36

Capital Raised by Financial and Nonfinancial Corporations at the Vienna Stock Exchange from 1993 to 2002



Source: OeNB, OeKB.

stakeholders, has been implemented above all by the largest and most liquid market participants. However, in order to increase liquidity, it is even more important that investor confidence in small caps gets a boost. Should small caps continue to show little commitment to selfregulation, a tightening of corporate governance rules would appear a way forward to promote the development of the capital market.

The Impact of the Subsidized Personal Pension Scheme on the Austrian Stock Market

The subsidized personal pension scheme launched in 2003 (*Zukunftsvorsorge* plans, based on articles 108g–i of the Income Tax Act, Federal Law Gazette 10/2003) stands to have little impact on the stock market in initial years because – while the number of contracts concluded may be rather large – the volume available for investment will grow only gradually as assets are built up over a long period through small monthly installments. Significant effects on stock market turnover, volatility and index developments will not appear until the volume of pension scheme assets has reached a critical mass. What remains to be seen, moreover, is the extent to which assets accumulated under this scheme will cause other components of households' investor portfolios to shrink.

According to the Federal Ministry of Finance, some 66,000 state-subsidized personal pension contracts were issued in the first half of 2003. Assuming[1]) that their number will increase to between 150,000 and 200,000 until the end of the year and that the average annual investment amounts to between EUR 870 and EUR 1,000 (taking into account that new contracts are issued throughout the entire year) and the nominal yield (including the subsidy) comes to 5%, the volume of these subsidized personal

1 *These estimates are based on industry assumptions.*

pension plans to be invested on the Vienna stock exchange totals between EUR 55 million and EUR 84 million. This corresponds to a share of 0.3% to 0.5% of the volume traded there between October 1, 2002, and September 30, 2003.[1]) A tentative estimate for the medium term (until 2012) on the basis of a market potential of between 450,000 and 600,000 contracts, which should be reached by 2007 or 2008, shows that the introduction of the subsidized personal pension scheme will have the following impact on the Austrian stock market: Two scenarios (450,000/600,000 contracts, annual investment of EUR 870/EUR 1,000, nominal yield including the subsidy of 5%, inflation rate of 1.5%) indicate that the share of assets to be invested in stocks will grow by some EUR 165 million to EUR 252 million (which corresponds to 1% or 1.5% of the volume traded between October 1, 2002, and September 30, 2003, on the Vienna stock exchange) per year by 2012. In other words, the accumulated assets to be invested on the Vienna stock exchange (or on the stock exchange of an acceding country) will rise to between roughly EUR 1.6 billion and EUR 2.2 billion (4.8% to 7.1% of the market capitalization of September 30, 2003, on the Vienna stock exchange; 11.2% to 16.5% of the respective free float – weighted average of September 30, 2003: some 43%). As considerable sums will be accumulated under the subsidized personal pension scheme in relation to both stock market capitalization and free float, which would have to rise over the next few years to ensure that growing demand is matched with adequate supply.

Finally, the question arises as to whether the statutory limitation of investment options is the best way to promote the necessary efficient diversification of risks. For instance, at present a mere six corporations from just three different industries account for some 60% of the index volume of the ATX and 65% of the volume of trading at the Vienna stock exchange.[2]) As the scope of stock markets on which assets accumulated under this scheme may be invested broadens in the process of EU enlargement, diversification possibilities improve, albeit at the cost of a higher exposure to risks (such as exchange rate and liquidity risks). Therefore, the prime objective should be to enhance the possibilities of diversification at the Vienna stock exchange or to ease the portfolio constraints of the *Zukunftsvorsorge* investment rules.

1 *According to statutory provisions, 40% of the pension scheme assets must be invested in stocks which were initially listed at the stock exchange of an EEA member country – subject to the limitation that their market capitalization does not exceed 30% of the national GDP over a four-year period (the calculation is based on the annual averages of the past four years, excluding the year preceding the respective calendar year). By these standards, private pension plan assets may, at present, only be invested at the Vienna stock exchange; following EU enlargement the stock exchanges of the acceding countries will also qualify.*

2 *These companies account for roughly 52% of the Wiener Börse Index. Even when additional financial service providers (Generali Versicherung AG, Uniqa Versicherungen AG, BKS, BTV, etc.) and small caps with a low liquidity are taken into account, it appears difficult to achieve an optimum degree of diversification.*

Special Topics

Systemic Risk Factors in the Insurance Industry and Methods for Risk Assessment

Gerald Krenn
Ulrike Oschischnig

Introduction

The insurance industry is faced with many different kinds of risks: insurance-specific risks on one hand, and investment risks on the other. As the systemic importance of the insurance industry has augmented in the last few years and increased attention has been focused on such risks as a result, the question arises what consequences these risks have for the insurance industry in particular, and for the financial markets in general.

In principle, regularly analyzing and assessing these insurance-specific risk factors is the task of the insurance supervision responsible for tracking the business practices of insurance companies. Nevertheless, the clustering of insurance-specific risks poses a potential danger to the entire industry and, as a consequence, to financial stability. Furthermore, when insurance companies transfer risks via the capital markets, the insurance industry becomes increasingly interconnected with the banking sector. In the following report we will focus in particular on systemic[1]) risk factors relevant to this system. Here, we have chosen a classification method similar to that used in the banking sector, as most of the risks that the banks are subject to, such as market risk, liquidity risk or operational risk, also arise in the insurance industry. However, it must be pointed out that these individual risks have a significance for and impact on the insurance industry that is very different from that in the banking sector. Furthermore, there are risks, such as underwriting risk, which are intrinsic to insurance companies' business, and therefore only apply to the insurance industry. However, it is not possible to concentrate on just a few factors, as systemic relevance most often results from the interplay of several risk factors. In addition, since September 11 it has become obvious that there can be no certainty about the probability and scope of events of loss, nor can their impact be limited to just a few companies or just one risk factor.

This is confirmed by the literature (Cummins et al., 1995; The Actuarial Profession, 2002) dealing with insolvency risk in the insurance industry. Since the 1980s, large numbers of insolvencies have occurred in the insurance sector at irregular intervals, most recently in the past two years. Although each of these periods were preceded by similar market developments, in particular a hardening of the market, it is not possible to confidently pinpoint the causes for the waves of insolvencies. It is more likely the interplay of several factors that is responsible for the collapse of these companies. Most frequently, insufficient reserves, rapid growth, overstated assets, fraud and catastrophic losses have been identified as the contributing factors.

Thus under specific economic conditions (such as fluctuations on the capital markets, large numbers of – major – incidents, weak economic activity and the like) is in place, no one individual risk factor can be singled out as posing a danger to the system, while at the same time excluding the potential for danger inherent in other factors. In order to avoid going beyond the scope of this paper, we will concentrate, however, on three key risk factors: underwriting risk, market risk and credit risk. We will subsequently provide an overview of the most common methods for risk assessment and illustrate the most important alternative risk transfer tools.

1 *The definition of "systemic risk" provided by E. Philip Davis is used; compare OeNB (2001).*

Risk Factors in the Insurance Industry

In principle, the risk factors in the insurance industry can be divided into three groups: underwriting risk, investment risk and nontechnical risk. Underwriting risk focuses on the nature of the insurance risk that the insurance company is assuming by selling insurance contracts. This includes, for example, risks associated with calculating premiums, calculating contingent commissions and operating expenses. All of the risks that arise in conjunction with the company's asset management come under the heading of investment risk; this includes obsolescence risk, interest rate risk or valuation risk. While underwriting risks are liability-side risks, investment risk occurs on the asset side of the balance sheet. All those risks that cannot be assigned to the two above-mentioned categories are grouped under the heading of nontechnical risks, which include sales risk, country risk, legal risk or management risk.

This kind of assignment of risk factors to these three main groups is the classification method most frequently found in the literature. In addition to the International Association of Insurance Supervisors (IAIS), the Austrian Financial Market Authority – and in a slightly broader form – the German Accounting Standards Committee also classify risk factors for the insurance sector in this way. As a contribution to the Solvency II discussion, the International Association of Actuaries (IAA) has drawn up a classification method for the most relevant risks an insurance company faces that is similar to the risk classification method that banks employ. What is interesting about this type of structuring method is that most of the risks that banks are subject to also arise in the insurance business. Using this method to classify risks makes identifying risk "hotspots" in the financial system simpler in light of the increased interconnection of the banking sector with the insurance industry which has come about as the result of the creation of financial conglomerates and bancassurances. Still, it must not be forgotten that the significance of individual risks for – and their impact on – the insurance industry certainly differs from that for the banking sector. In addition, some risks, such as underwriting risk, focus on the nature of the insurance business and are thus applicable only to the insurance sector.

In the following overview of the key risk factors facing the insurance industry, we will focus primarily on systemic risks, in other words those factors which – if clustered – pose a potential threat to financial markets, or those which arise when the risk management instruments used create a close link between the insurance industry and the banking sector, involving a potential threat to stability. The following classification was selected:

- underwriting risk
- market risk
- credit risk
- liquidity risk
- operational risk
- other risks

Underwriting Risks

To a large extent these risks stem from the fundamental business of the insurance industry, namely selling insurance policies. The risks emanate from the dangers to which the object of the insurance contract is exposed; these are the risks which an insurance contract is supposed to cover. In the non-life insurance segment, these risks include natural and man-made

disasters and third-party liability risks. Earthquakes, flooding, hurricanes, volcano eruptions and the like are considered natural disasters. Man-made catastrophes include, for instance, terrorist attacks, fires or airplane crashes. In comparison, the life insurance segment is confronted with a lower underwriting risk, as death rates remain relatively stable. Using historical data, corresponding death rate tables are drawn up to calculate risk; future developments, such as advances in the field of medicine, are also taken into account. However, as these tables are models based only on forecasts, they do contain a degree of uncertainty. For instance, epidemics, natural disasters or terrorist attacks can have a marked impact on the death rate.

Similar to the life insurance segment, data that is as comprehensive as possible on historical events is also compiled for non-life insurance classes to establish a relationship between where these natural disasters occurred, when and how frequently they occurred and what scope the disaster had. In so doing, the potential danger can be generally assessed. In the past few years, despite annual fluctuations, incidents caused by natural disasters have risen sharply overall. However, it cannot be unambiguously proven whether the number of natural disasters has in fact risen in the last few years. Rather, a rise in population density, an upsurge in insurance concentration in danger zones, as well as the fact that some modern materials and technology are increasingly susceptible to damage are likely to be responsible for the growing occurrence of incidents.

In addition to the risk that arises from the sale of insurance policies, operational processes associated with carrying out insurance business activities, such as calculating premiums, developing products or selling the products (sales risk) are also subject to risks.

In order to manage the above-mentioned risks, insurance companies are increasingly relying on so-called *alternative risk transfer* (ART) instruments in addition to traditional instruments, such as increases in premiums or reinsurance. These instruments offer direct risk transfer via the financial markets as an alternative method of providing risk coverage capacity. More and more frequently, insurance companies have been using catastrophe bonds (CAT bonds) in particular to insure against the increased risks in the non-life classes. By issuing such bonds, the insurance companies transfer a portion of the risk of a natural disaster occurring to the bond subscriber. The amount of the interest payment and/or the repayment of the capital investment are dependent on whether the disasters as defined in the bond terms actually occur. If this is indeed the case, the investor's claim is limited to a payment of interest or – depending on the terms of the bond – to a portion of the invested capital. An interest claim higher than that of a normal bond compensates the investor for the increased risk. In so doing, the bond issuer (the insurance company) transfers the risk directly to the investor. With a CAT bond the investor speculates in turn that a natural disaster will not occur or will only cause minimal damage. The transactions are frequently carried out via financing companies created especially for this purpose, so-called *special purpose vehicles* (SPVs) that function as a reinsurer for the company transferring the risk and as the issuer of the bond at the same.

The advantage of this kind of risk transfer is that there is no danger of a lack of coverage due to the contracting party's potential inability to pay, unlike traditional direct insurers and reinsurers. In the event of a loss, the necessary capital is available in any case, as it has already been provided ahead of time.

Market Risk

As we have seen in the last few years, market risk has become one of the greatest risks the insurance industry faces, and hence one of the most relevant for the stability of financial markets. Market risk is defined here as potential losses owing to detrimental changes in market prices and/or other financial variables influenced by prices. This includes share prices, interest rates, asset prices or exchange rates. In other words, market risk makes up a key share of investment risk.

The assets side of an insurance company's balance sheet consists primarily of financial investments in the form of bonds, shares, loans and real estate – all subject to market risk. Often occurring in complex constellations, unexpected changes in share prices, exchange rates and interest rates can, for that reason, have a massive impact on the company. As when and/or how much income is generated from premiums often does not coincide with when and/or how much the insurance company must disburse on the basis of insurance contracts, the funds are invested in such a manner that the insurance company will have sufficient funds available when needed. If unexpected developments in the financial markets prevent an insurance company from drawing on enough liquid assets from its investments, it will encounter difficulties, as it cannot meet its obligations. Such unexpected developments are, for example, fluctuations of interest rates or stock prices. Thus market risk encompasses the interest rate fluctuation risk, risks stemming from shares and other equity investments, as well as currency risk and country risk.[1]) For example, currency risk can emerge when the insurer invests in other currencies than those in which the liabilities are denominated. Should it be necessary to dissolve the capital investments at unfavorable exchange rates, the company is forced to take a loss. Country risk stems from herding behavior typical of institutional investors, who often concentrate investments in one geographic region or in one economic sector. Should the expected yields fail to materialize, the company could suffer considerable losses, depending on how much it has invested.

In addition to observing a number of legal and regulatory provisions aimed at minimizing risks stemming from capital investments, insurance companies also apply *asset liability management* methods (ALM). ALM basically means managing assets and liabilities in a coordinated manner, in other words balancing the capital investment portfolio (assets) against the liabilities that arise from the products the insurance company sells. The objective of ALM is to completely avoid risks by pursuing the appropriate investment strategies. ALM was originally developed to bring rising interest rate risk, which had cropped up when interest rates became noticeably more volatile in the 1970s, under control. In this new and uncertain environment, several insurance compa-

1 *Country risk is more broadly defined for insurance companies than it usually is for the banking sector.*

nies were no longer able to manage their interest rate risk and were forced to file for bankruptcy. As techniques for managing interest rate risk were developed further, risk models were expanded to non-interest rate risks. Consequently, ALM became an important management tool for product-specific risks, as well as for general entrepreneurial risks. Value at risk (VaR) models are used in addition to ALM; these models were introduced for the first time in the banking sector in the mid-1990s and serve to manage short-term market risk for portfolios.

Credit Risk

Credit risk basically means the risk that a counterparty cannot meet its liabilities. Even if a counterparty does manage to meet its liabilities, the value of a given item may decline if its rating is downgraded. Consequently, the insurance company will be subject to credit risk whenever changes in the economic policy framework entail adverse changes in the creditworthiness of invested assets. Mortgages as well are subject to credit risk, which must be adequately assessed by means of internal ratings.

When managing credit risk, insurance companies must primarily look to avoid concentration risk (e.g. concentration of investments in a particular investment category, low degree of portfolio diversification) and strive to achieve as much diversification in their investments as possible.

However, reinsurance companies represent the most significant component of credit risk, in particular when it becomes impossible for them to meet their liabilities vis-à-vis direct insurers, as they themselves are faced with financial difficulties. Worldwide there are some 200 professional reinsurance companies in the sector, in addition to the numerous direct insurance companies who also act as reinsurers. A reinsurer is the insurer for the insurance company. Direct insurance companies shift risks to reinsurance companies as the risks either exceed their capacities or because they are unwilling to assume the risks alone for other reasons. The transfer of the direct insurer's risk also means a greater potential threat to the reinsurer, in particular as reinsurers primarily insure disaster risks and other large risks. Thus reinsurer's job is to provide its clients with the desired coverage while structuring its own reinsurance portfolio in a way that will allow it to achieve an actuarial balance – and to make a profit. The reinsurer achieves a balance in the risks it assumes by diversifying its activities internationally in several insurance segments and by reinsuring itself in turn against risks that exceed its own capacities.

So-called finite risk reinsurance concepts are increasingly being used to supplement traditional reinsurance methods. Finite risk solutions shift the focus away from traditional risk transfers to risk financing; to a large degree the insured party actually finances the risk itself. This is mainly done by spreading the risk out over time. Over the course of several years, the direct insurer pays a fixed amount into a fund. The amount paid into the fund is calculated to cover the entire insured sum on the basis of the life of the policy. The policyholder is entitled to the insured sum in the entire amount from the first day of the life of the policy to insure against certain risks. This method helps to cushion insurance cycles. The nature of finite risk lies therefore in the limited risk transfer to the reinsurer, the

contract duration over several years and the explicit calculation of future capital investment gains when setting prices.

Liquidity Risk

Closely related to market risk, liquidity risk is the risk of not being able to meet payment liabilities when due. The liquidity of an investment is defined by how quickly and to what extent it can be converted into cash. The ability to convert the investment into cash is, however, dependent on several factors which influence the scope of the liquidity risk. In addition to general market conditions which necessitate the dissolution of an investment under unfavorable conditions, an unexpected demand for liquidity may be triggered by a credit rating downgrade, negative publicity (whether justified or not) or reports of problems of other companies in the same or similar lines of business. Furthermore, company-specific characteristics can influence liquidity risk, for instance, if few contract holders control large sums of money, if the insurance company's size limits its access to capital markets, or if insufficient precautions were made for short-term borrowing (e.g. a credit line that is too restrictive).

In order to manage liquidity risk, insurers pursue various hedging strategies in addition to the already above-mentioned ALM.

Operational Risk and Other Risks

Operational risk indicates the potential for losses as a result of inadequate behavior or failure on the part of employees, management, internal processes or systems, technologies or external events. To manage this kind of risk, insurance companies use standard risk models that draw on historical data.

All risks that cannot be grouped into the above-mentioned categories come under the heading of "other risks." These include, for instance, legal and regulatory risks that result from changes in the legal framework or the regulatory environment, as well as political risks. As insurance companies have hardly any influence on these kinds of risks, it is very difficult to bring them under control. Protection against these risks is mainly limited to keeping a close watch on the environment in which insurers operate, as well as lobbying.

Risk Assessment Methods

In keeping with insurance companies' core competence, model-based approaches to risk assessment were developed early on for underwriting risk. As a case in point, the field of actuarial mathematics was established at universities at the beginning of the 20th century. However, the stochastic principles of this field of mathematics, which has since come into its own, are also of fundamental importance for many of the risks that arise in capital investment. Accordingly, certain methods of underwriting risk assessment have a counterpart in investment risk assessment. An example is the collective risk model, which is based on the one hand on modeling the frequency and the coincidence of events of loss, and on the other hand on modeling the amount of losses resulting from these events. Similarly, the modeling of credit risk in capital investment relies on the statistical description of the number of credit events (bankruptcies or rating downgrades) and the amount of loss should a credit event occur.

At least two risk components can be pinpointed when modeling underwriting risks: process risk and uncer-

tainty risk. Uncertainty risk occurs when the stochastic model of the process that generates losses is flawed or inadequate. For instance, a specific stochastic model may not be correctly specified in order to reflect the probability distribution of the amount of damage. Another example of uncertainty risk is the incorrect estimation of parameters. However, even if the underlying probability model is entirely known – in other words when uncertainty risk is precluded – any actually observed loss still is the outcome of a random process. Therefore extreme losses – although not likely – are still possible. Process risk is defined as possibly not having enough coverage in the form of incoming premiums or built-up reserves should extreme events occur (e.g. clustering of damage, particularly large-scale damage).

The collective risk model mentioned above is a concrete method for assessing underwriting risk. With this model, the probability distributions of the frequencies and amounts of individual damages observed within a particular insurance segment are calibrated in a first step. These two distributions are then used to determine the distribution of total damage within the segment. The losses within the segment result from the difference between the total damage and the premiums available to cover the damage. The distribution of total damage can be used to determine the probability with which a particular loss amount will be exceeded. Vice-versa, by applying the total damage distribution for a given probability it is possible to determine the amount of loss which is exceeded only with that probability. Losses ascertained in this manner constitute the segment's "underwriting" value-at-risk (VaR).

The use of VaR as a risk management tool for the trading book has been well established in the banking sector for several years. Transposing the VaR concept to capital investments made by insurance companies seems at first glance to be an obvious move; however, it is subject to limitations. The reason for this lies mainly in the differing objectives of holding specific positions. In the case of banks' trading books, the goal is to post profits by exploiting relatively short-term price changes. For that reason the focus is on short holding periods (two weeks are typical) which replicate the maximum period of time positions must be held before they can be closed. The focus is on market value losses within this holding period. In the case of capital investments made by insurance companies, funds are invested in securities with the goal of drawing an income which will cover payment liabilities arising from insurance contracts. Therefore, the focus is on longer holding periods, whereby income effects take precedence over market value effects. This implies that insurance companies use ALM methods as the primary tool to manage their investment risk. In any case, circumspection is in order when adapting VaR models developed for the banking sector to the needs of the insurance industry.

Alternative Risk Transfer Tools

In addition to traditional methods for insuring against risks, such as reinsurance, *captives*[1]) and *risk retention*

1 *A captive as defined in the insurance industry is an insurance or reinsurance company which is wholly owned by a company or a group of noninsurance companies.*

groups[1]), insurance companies are increasingly turning to alternative risk transfer tools. In light of the developments in the insurance sector in the last few years, which have been marked by a rise in risks stemming from natural disasters and capital investments, as well as the fact that insurance companies' ability to cover these risks has put the insurance market to the test, the development of new tools to manage risks in the insurance industry has taken on a special significance. What these instruments have in common is that the financial markets assume insurance-specific risks, and financial contracts function as risk management tools. These alternative risk transfer instruments (ARTs) include, in addition to the CAT bonds already mentioned above, a broad spectrum of insurance securitization products that tap financial markets as an additional source of finance. In principle these products can be divided into insurance risk bonds and insurance derivatives. The following section outlines some of these tools.

Contingent Capital

The purpose of a contingent capital solution is to secure an insurer's financial strength in the wake of a large-scale event of a loss, as at this time borrowing is in any case costly, if it is at all possible. These instruments provide the buyer with the right to issue and sell securities for a fixed period of time at a previously defined price if a predefined event (e.g. a natural disaster) occurs.

Asset-Backed Securities

Asset-backed securities (ABSs) are a tool used to securitize credit risks. Normally a company's credit claims are grouped according to various criteria and sold to a special purpose vehicle. The financing company finances the purchase of these credit claims by issuing a bond, an ABS. The special purpose vehicle receives interest and debt payments from the purchased credit volume with which it repays the interest rate on the ABS and the entire bond when the loans become due. As the risk of default is transferred indirectly to the investor, the ABS involves a credit risk for the investor. Like fixed income securities, ABSs are usually traded on the stock market; however, the market was limited to the U.S.A. until just a few years ago. In recent times this type of securitization method has gained in importance in Europe as well, even though it still accounts for a very small share of trading.

Pure Insurance Derivatives

Pure insurance derivatives, which transfer insurance risks to or via the capital markets and, unlike insurance risk bonds, do not provide prior liquidity to safeguard maximum liability, can be designed as swaps or options. These tools therefore transfer insurance risks to capital market investors, rather than the reinsurance market, in the form of a derivative. The investors assume insurance risks by way of a capital market instrument.

By using PCS (property claims service) catastrophe call options, the insurance company can protect its liability side. Catastrophe call options are standardized contracts that provide the purchaser with a cash payment if an index measuring catastrophe losses exceeds a certain level. If

1 *Risk retention groups (RRGs) are an American phenomenon and were introduced in 1986 to provide U.S. companies with alternative access to third-party liability insurance.*

the catastrophe index remains below this level for the prespecified period of time, the options expire worthless and the seller keeps the premium. If the index exceeds this level, the purchaser of the option receives a cash payment equal to the difference between the catastrophe index and the level price.

However, pure insurance derivatives harbor a counterparty risk, which manifests itself whenever the investors cannot meet the indemnification as the indemnification payments are made only after the occurrence of a given event. In the case of a insurance risk bond, on the other hand, the proceeds from the bond issue are already available in advance.

Catastrophe Swaps

Catastrophe swaps are among the most common tools used to transfer catastrophe risk, in addition to CAT bonds. Here, fixed payments made by the investor are swapped for payments whose value is dependent on the occurrence of an event of a loss. Unlike CAT bonds, catastrophe swaps do not tie up the capital in a special purpose vehicle; however, they do pose a credit risk (the default of a counterparty).

Outlook

Until just a few years ago, insurance companies' risk management tended to be a segment-by-segment approach. As risks have become more and more complex, affecting a number of segments at the same time, a more comprehensive approach is needed for modeling risk concepts. Furthermore, we have seen that the insurability of risks is limited by a lack of experience (as in the case of the Y2K conversion), and many risks are simply too large to be insured. In these cases ART products help supplement capacity or shift the focus away from risk transfer to risk financing, expanding the area of application for risk management solutions. ART products have evolved successfully in the last few years not only because they can compete in price with reinsurance products, but also because they offer more liquidity and greater transparency within the sector. According to a SwissRe study (2003) the market volume of ART products in 2001 came to USD 163 billion. The present situation, marked by stiff competition, in particular in the non-life segment, is encouraging the trend toward using ART products to replace traditional insurance methods. For that reason, the reinsurer SwissRe forecasts annual volume growth of approximately 15% over the next two years.

Repercussions for Financial Stability

In the last few years, the insurance industry has gained significance for financial markets: First, the market for direct insurers and reinsurers has grown in the last twenty years as a result of the increased events of loss, especially in the non-life insurance segment; second, insurance companies have become more important on global financial markets in their role as investors and financial intermediaries. Insurance companies not only insure the financial risks of other market participants, but are also increasingly transferring their own risks via the capital markets. As a result, the boundaries between the insurance sector and the banking sector are becoming more and more blurred, in particular because of the numerous financial instruments that have been developed in recent years. Unlike in the banking

sector, very little is known about the actual scope of direct insurers' and reinsurers' financial market activities, partly because the regulatory framework is less uniform across countries (in particular for the reinsurance sector), partly because only limited experience has been gained with the financial market tools insurance companies use. For example, there is little data available on insurance companies' off-balance sheet transactions, and not enough information has been gathered on whether market and credit risk management developments can keep pace with the insurers' growing involvement in the financial markets, or whether market and credit risk management is applied adequately.

As ART instruments offer insurance companies the possibility of choosing from a broader range of risk transfer products and, in so doing, diversifying their risk portfolio, their use should principally contribute to financial market stability and improve the efficiency of international financial systems. Nevertheless, the growing use of these instruments poses a potential risk according to the available literature (e.g. IMF, 2003; Rule, 2001). First, to a certain extent these products are subject to cyclical and economic policy factors, which have an impact on the volume of ART products. For instance, when loan conditions become more restrictive, recourse to contingent capital or asset-backed securities can be expected to increase. On the other hand, accounting scandals in the United States have proved to be a considerable handicap to the market establishment of CAT bonds or other ART products transacted by special purpose vehicles. The image of special purpose vehicles, off-balance sheet financing and measures used to smooth income have suffered from the recent financial scandals, so that traditional risk management solutions regained attractiveness.

Second, the growing importance of rating agencies also poses a potential danger. To cut costs, companies often rely on rating agencies to assess risk. It may be a rational decision to use ratings as an objective measure of credit risk in individual cases; however, as frequently documented in the literature, problems can arise if several market participants choose to rely on rating agencies as a criterion in their decision-making process, especially if they are contractually bound to ratings decisions in a similar way, setting in motion large volumes of capital – not unlike the herding phenomenon.

Third, many ART products, such as asset-backed securities or catastrophe swaps, also harbor a credit risk for investors (default of a counterparty). In this context, more information on who is buying these products and therefore assuming the risk would allow a better assessment of the extent to which the banking sector is involved.

And finally, it must be taken into account that the use of ART products reinforces the linkages between the banking sector and the insurance sector. In particular the use of derivative products aimed at transferring credit risk may be considered a potential danger. However, the lack of available data on the actual scope of transferred volume, as well as the increasing lack of transparency, virtually rule out a sound analysis of the repercussions on financial stability.

In addition to the risks that result from transferring credit risk, the growing interconnection between the banking sector and the insurance sector in the form of bancassurances and finan-

cial conglomerates also poses a risk to financial market stability according to ECB (2003). Especially in the last few years banks and insurance companies have been taking advantage of the benefits of bancassurances and have supplemented their core competences by adding profitable business segments that are no longer consistent with their original business activities. This trend is underpinned in particular by comprehensive steps toward deregulation in the global financial markets. However, while the increased cooperation between the banking sector and the insurance industry expands the possibilities for posting gains due to new business activities, according to ECB (2003) it also encompasses a risk of contagion. This risk became evident especially in the last few years, when turbulences rocked international capital markets.

Opinion is split in the literature (IMF, 2002; Swiss Re, 2002; Lane, 2002) over the role of reinsurance companies within the context of financial stability. On one hand reinsurance companies have considerable importance, as a large portion of risk is traditionally still transferred to reinsurers. In light of the consolidation trend in the reinsurance sector in the last few years, it can be assumed that the concentration of risk is growing. Should systemically important companies encounter financial difficulties – or even become insolvent – at the same time, a considerable credit risk for counterparties may result.

In the literature, the smooth cooperation of supervisory bodies and market discipline is presented as a counterargument, allowing us to detect warning signals early on and take appropriate action. Furthermore, it is argued, the volume of direct bank exposures granted to the insurance sector is too small to pose a potential danger. The same is true of the volume of ART products, so the argument goes, which is still estimated to be low.

In summary, it can be stated that there is limited experience thus far with newly developed financial instruments, as well as a lack of available data (for example in the OTC segment) and information on the scope, volume and nature of the insurance industry's financial market activities. Therefore, further developments need to be carefully monitored. Supervisory bodies and central banks have already taken initiatives aimed at gathering more detailed information that would allow to quantify the insurance industry's financial market activities, therefore making it easier to assess any potential risks.

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The Third Quantitative Impact Study (Basel II): An In-Depth Analysis of Regional and International Results[1])

Alexander Tscherteu

Introduction

The core element of the third quantitative impact study (QIS 3) was an analysis of the changes in risk-weighted assets (RWA) resulting from a comparison of the new approaches introduced by the Basel II framework with the current Accord. An increase in RWA is tantamount to a higher capital requirement.[2])

The analysis focused on two key indicators: first, the relative change in RWA, which enables us to quantify the impact of the new approaches on the capital requirement in the individual exposure categories, and, second, the so-called contribution of changes in the individual exposure categories to the aggregate result. This contribution, which is calculated by multiplying the percentage share of RWA for one exposure category in total RWA by the relative change under the Basel II framework, allows us to assess the impact on the aggregate result. As an example, RWA as a percentage of loans to sovereigns increased considerably (in some cases by several hundred percent) across all aggregated reports (G-10, Europe) and the majority of the individual country reports (e.g. Germany). The relative change in RWA is thus substantial. At the same time, the absolute amount of RWA for sovereign exposures is very low (e.g. less than 1% of total RWA in the Austrian sample), and, by extension, their contribution to the aggregate result is not very high.

The following considerations have to be taken into account when analyzing and interpreting the data given below:

– The published results are not only based on actual data but also on estimates and reflect the status as at about four years prior to the entering into force of the new Accord. Moreover, neither the new framework itself nor its implementation by banks has yet been concluded. Thus, the results presented in this paper must be seen as a snapshot of current conditions. Further changes will have occurred by the time the final Accord has been published and fully implemented by banks, and these modifications may and most probably will have a substantial impact on the results published in this paper.
– The banks calculated their results on the basis of the QIS 3 Technical Guidance documentation. The modifications contained in the third consultative paper (CP3) were taken into account retroactively to the extent possible, although the CP3 does not reflect the most recent changes to the new framework. In addition, the EU draft Directive, which will have a major impact on the implementation of the new capital adequacy rules in Austria, introduces a series of important changes, as for example "permanent partial use"[3]) with regard to bank and

1 The conclusions drawn from the QIS 3 results, which are presented in this paper, would not have been possible without the manifold contributions of the OeNB staff members involved in the preparation of the country report for Austria. In the first place I would like to thank Yi-Der Kuo and Brigit Wlaschitz for their active support. Moreover, I would like to thank the following colleagues for their valuable contributions: Nikolaus Böck, Gabriela de Raaij, Evgenia Glogova, Mario Oschischnig and Vanessa Redak.

2 The correlation $\frac{tier\,1+tier\,2\,capital}{risk\text{-}weighted\,assets}$ = capital ratio in % ≥ 8%) continues to apply under the new Basel Accord.

3 Under the IRB approach, banks are given the option to continue applying the standardized approach for certain asset categories that fall below a specified materiality threshold.

Table 1

Comparison: Capital Ratio for the Aggregate Sample

	Current approach	Standardized approach
	EUR billion	
Eligible capital	15.8	15.6
Risk-weighted assets	115.9	123.0
	%	
Capital ratio	13.6	12.7

Source: Austrian country report.

Table 2

Comparison: Capital Ratio of IRB Banks

	Current approach	Standardized approach	FIRB
	EUR billion		
Eligible capital	9.7	9.6	9.6
Risk-weighted assets	62.7	70.3	67.8
	%		
Capital ratio	15.5	13.7	14.2

Source: Austrian country report.

sovereign portfolios, which is not contained in the Basel II framework and therefore not reflected in the results.

– Moreover, the borrowers' probabilities of default (PD) were estimated on the basis of the rating models currently used. However, by 2007, when banks will actually apply the new rules, they are likely to have greatly refined their rating tools, which is bound to allow for a much more precise and finely tuned PD assessment.
– Furthermore, banks will increasingly be taking recourse to credit risk mitigation techniques, a fact the QIS 3 figures also fail to reflect.
– Finally, the banks that participated in the field test made a formidable effort to provide the required data at short notice, for which we are very grateful. This time constraint, however, also increased the risk of data errors.

Aggregate Result

As noted in the Financial Stability Report 5,[1]) a total of 18 banks were included in the Austrian sample, all of which sent in data based on the standardized approach and 11 of which additionally provided data based on the foundation IRB approach (FIRB).

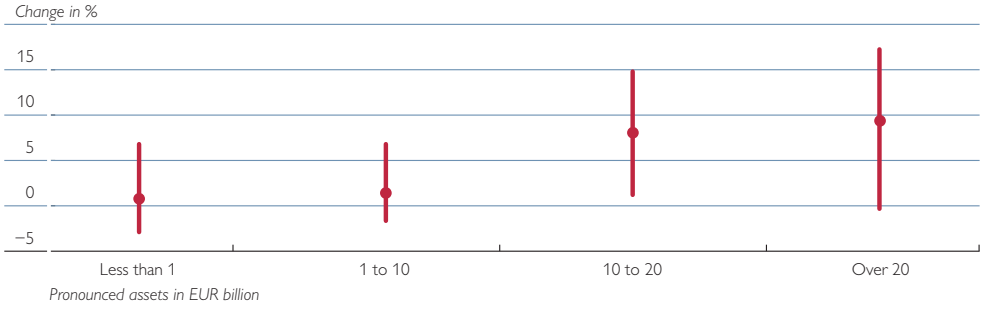
In the majority of the QIS 3 country reports, the aggregate result equals a simple, often unweighted average of the data reported by the individual banks. Under such an approach, the effect of small banks on the overall result is overstated and that of large banks understated. The distorting effect inherent in such an approach is likely to be particularly pronounced for the Austrian aggregate result as the assets reported by banks included in the Austrian sample sometimes differ by a factor of 1,000. The presentation of the Austrian aggregate result in tables 1 and 2 is therefore based on a different approach. In a first step, we summed

1 *See Redak and Tscherteu (2003).*

Chart 1

Change in RWA Under the Standardized Approach

(Differentiated by Size Class)



Source: Austrian country report.

the eligible capital as well as the calculated RWA of all banks before computing the capital ratio for the entire sample. The participating banks are thus treated as if they were a single institution.

Overall, the 18 banks reported about EUR 16 billion of eligible capital under both the new standardized approach and the current Accord. This figure compares with about EUR 116 billion of RWA under the current Accord. Under the standardized approach and including operational risk, the RWA increase to EUR 123 billion. As a consequence, the banks' capital ratio drops slightly to 12.7% under the standardized approach but continues to be well above the minimum requirement of 8%. In other words, under the new standardized approach the 18 banks would still be in a position to increase their risk-weighted assets by more than 50% without falling below the minimum capital requirement of 8%. This represents a respectable capital buffer.

When we carry out the same aggregation for the 11 banks that also applied the foundation IRB approach, the following picture emerges: The application of the standardized approach again results in an increase in the RWA and a decrease in the capital ratio. Under the FIRB approach, however, the RWA decrease markedly. All in all, the capital ratio for the 11 IRB banks is considerably above that of the aggregate sample and hence translates into an even greater capital buffer compared with the minimum capital requirement of 8%.

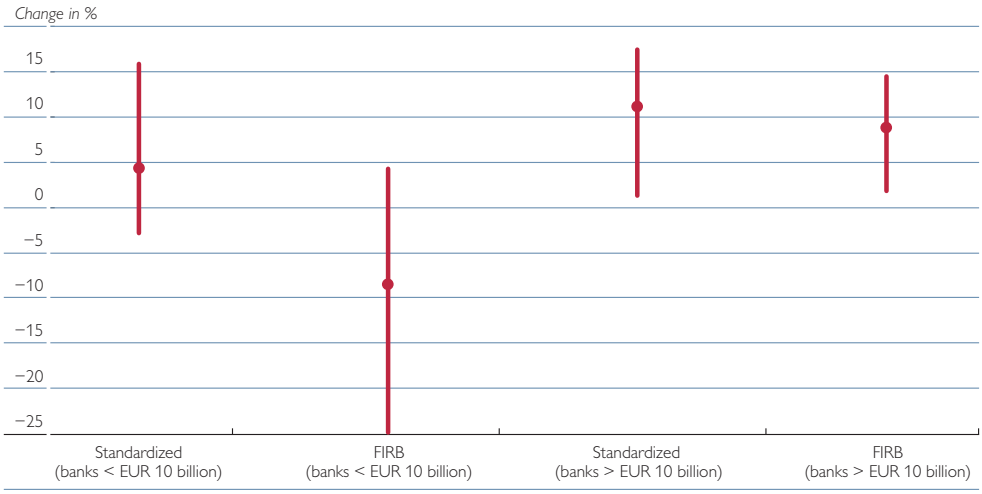
In calculating some further key indicators, we again started out from unweighted averages. In a first step, we tested the sample for a correlation between the size of the reporting bank and the results obtained by using the standardized and foundation IRB approaches. It must be noted in this context that comparisons of international results usually only differentiate between Group 1 and Group 2 banks.[1]) As the Austrian banking sample consists exclusively of Group 2 banks, this differentiation cannot be applied to the Austrian sample. To take account of this fact, we therefore adopted a finer gradation. The assets reported by the 18 banks using the standardized approach were differentiated by size and allocated to one of four classes.

1 *Group 1 banks are banks with tier 1 capital in excess of EUR 3 billion; all other banks fall into Group 2. See also the International Comparison section.*

Chart 2

Change in RWA

(Standardized and FIRB Approach to Current Approach)



Source: Austrian country report.

Each of these classes contained four to five banks. Chart 1 illustrates the result.

The vertical axis measures the change in RWA under the standardized approach in comparison with the current Accord. The dot on the vertical line marks the equally weighted average of all banks in the respective size class, whereas the line itself represents the variability of the results obtained for the banks in the respective size class. As the chart clearly shows, under the standardized approach[1]) the increase in RWA is the more pronounced the larger the bank.

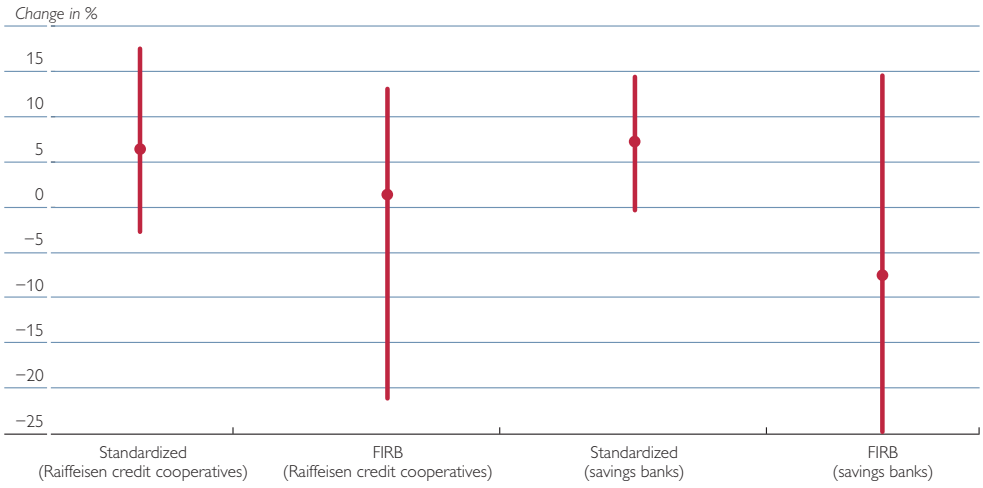
In chart 2, we made a similar differentiation for the 11 banks that had calculated the foundation IRB approach in addition to the standardized approach. In a first step, we subdivided the sample into banks with assets below EUR 10 billion (6) and banks with assets above EUR 10 billion (5). Then we marked the changes for the comparison of the standardized and the foundation IRB approaches with the current Accord each. Again, smaller banks are seen to exhibit a lower increase in or larger discount on RWA than larger banks. Another notable feature is that while all banks benefit from a changeover from the standardized to the foundation IRB approach, the smaller banks exhibit a more pronounced reduction in RWA under the foundation IRB approach.

Finally, the sample was tested to determine whether sectoral groupings had a material impact on the aggregate result. As pointed out by Redak and Tscherteu (2003), the large share of IRB banks in the Austrian QIS 3 sample is primarily attributable to the efforts undertaken in the individual banking sectors to find a common solution for implementing the new Accord. The sample comprised six Raiffeisen credit cooperatives and four banks from the Austrian savings bank sector. The results for both the stand-

1 *Under the standardized approach, total RWA are calculated as the sum total of the RWA for the credit, market and operational risks.*

Chart 3

Change in RWA (Sector Comparison)



Source: Austrian country report.

ardized and foundation IRB approaches for these banks had been computed separately. As is evident from chart 3, the standardized approach results are almost identical for the two sectors. Both the averages and the degrees of variability are quite similar. Under the foundation IRB approach, the savings banks exhibit a markedly lower average, though the variability of the individual results is somewhat greater.

To summarize, the comparison showed that the size of the credit institutions, but not the sectoral groupings had an impact on the volume of RWA under the new approaches introduced by Basel II.

Result by Exposure Category

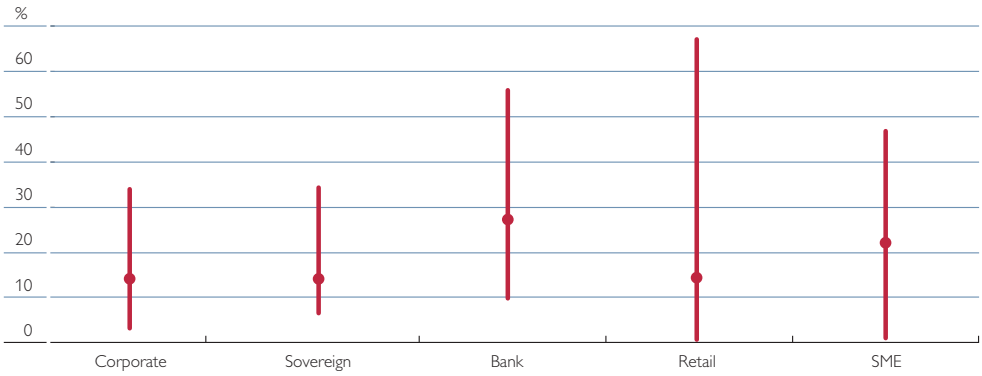
Let us now focus on the individual exposure categories. Here, we need to answer two questions: How does the new capital adequacy framework impact on the individual types of exposure, and which of these exposure categories have a material impact on the aggregate result?

Chart 4 illustrates the share of the individual exposure categories in total reported assets. The five exposure categories shown account for about 90% of total reported assets and represent over 85% of the RWA.[1]) As in charts 1 to 3, the dot represents the unweighted average of the respective exposure category in total exposures, whereas the length of the vertical line shows the variability within the respective exposure category. Exposures to corporates, for example, account for an average share of about 14% in total assets, whereas bank exposures amount to almost 30%. Retail exposures, which account for a share of about 14% on average, exhibit the greatest variability. The sample included banks with no retail exposures at all as well as banks with credit expo-

1 *We restricted our analysis to these five exposure categories because they virtually are the main determinants and because all banks included in the sample reported data for them. This allows us to make statements for the entire sample.*

Chart 4

Share of Exposure Categories in Total Assets



Source: Austrian country report.

sures in the retail category accounting for more than two thirds of total exposures. At the microlevel, we find that small banks generally have a larger share of retail exposures. The reverse is usually true for corporate and bank exposures. The two largest subcategories are bank exposures and exposures to small and medium-sized enterprises (SMEs); the two of them together account for about half of the participating banks' total exposures.[1])

Table 3 shows the average unweighted change in RWA under the standardized and the foundation IRB approaches in comparison with the current Accord. Except for sovereign and bank exposures, the RWA are lower for all exposure categories when calculated in accordance with the two new approaches.

Under the standardized approach, this decrease is most pronounced for retail exposures, followed by SME and corporate exposures, with the latter two exhibiting slightly lower RWA than under the current Accord. For bank exposures, by contrast, the standardized approach yields markedly higher RWA on average; the RWA figures for sovereign exposures show a very steep increase. However, as is evident from the last column in table 3, which shows RWA for the individual exposure categories in relation to total RWA under the current Accord, this strong increase in the

Table 3

Change in RWA – Austrian Sample

	Change in RWA		Share in RWA
	Standardized approach	FIRB approach	Current Accord
	%		
Corporate	−3	−22	22.4
Sovereign	136	386	0.5
Bank	42	30	8.1
Retail (total)	−18	−35	16.8
Residential	−21	−42	..
Other retail	−20	−35	..
SME (total)	−5	−2	32.9
thereof: corporate	2	4	..
retail	−17	−29	..

Source: Austrian country report.

sovereign subcategory relates to a very small share of only 0.5% of total RWA. Hence, the effect on the overall result is not very pronounced. Of a total of EUR 116 billion of reported RWA, a mere EUR 0.57 billion relate to sovereign exposures.

Under the foundation IRB approach, the ranking of the capital reduction per exposure category remains almost the same, but the relative changes are more pronounced. Retail exposures benefit even more from switching from the current framework to the foundation IRB approach. At 35%, the decline is double the rate obtained under the standardized approach. Corporate exposures also benefit by a relatively high margin. A decrease in the RWA by one fifth implies a reduction in the cost of capital by the same rate. The RWA for sovereign exposures increase at an even higher rate in the IRB sample than under the standardized approach. This is mainly traceable to the effect of two outliers, namely two banks that record only minimal RWA for their sovereign exposures under the current framework, and which thus cause a pronounced upward distortion of the overall result.

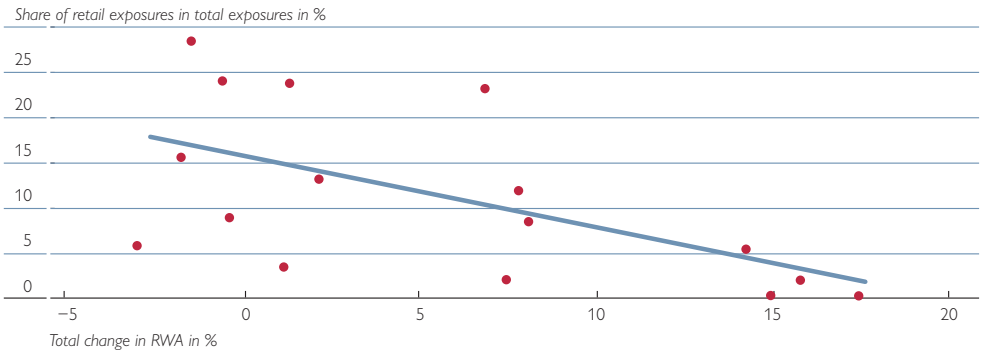
The QIS 3 data provide the basis for an even finer differentiation of the effects the new approaches have on individual exposure categories. The data reported for the individual exposure categories were subdivided further by credit lines actually drawn and loan commitments. We found that with regard to drawn credit lines the new approaches resulted in a decline in RWA in all the above exposure categories and subcategories. The only exceptions were exposures to sovereigns and banks. RWA for loan commitments, by contrast, increased in all exposure categories under the new approaches. However, as became evident from bank-internal estimates of loss given default (LGD) and exposure at default (EAD) provided by banks that used the advanced IRB approach in the QIS 3 exercise, increasing the risk weights of loan commitments is basically justified and actually eliminates a weakness of the current Accord.

Having analyzed the effects of the new framework on the individual exposure categories and having learned more about the distribution of the individual exposure categories, we may draw the following conclusion: The markedly lower level of RWA observed for small banks under the new approaches is not primarily due to their size, but rather to the fields of business in which these banks operate. The QIS 3 results provide evidence that a strong concentration on the retail business has a positive effect on the size of the RWA. Chart 5 once again illustrates this relationship for banks applying the standardized approach, and so does chart 6 for IRB banks. The vertical axis shows the share of retail exposures in total exposures, while the horizontal axis reflects the overall change in the RWA, with the standardized approach and the foundation IRB approach each compared with the current Accord. The charts indicate that banks with a high share of retail exposures generally tend to exhibit lower RWA. The trend lines included in the charts additionally underscore this relationship. The variability of the data points is ascribable to the fact that banks reported differing default rates on retail loans. Naturally, these have a pronounced effect on the volume of RWA.

Chart 5

Retail Exposures and Aggregate Result

Under the Standardized Approach

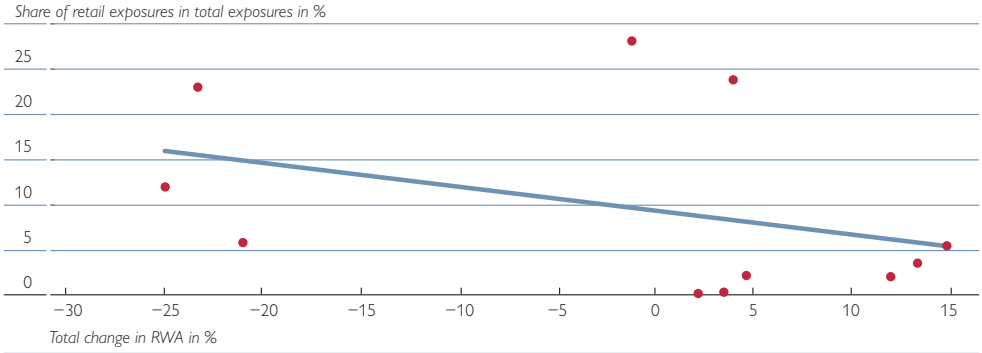


Source: Austrian country report.

Chart 6

Retail Exposures and Aggregate Result

Under the Foundation IRB Approach



Source: Austrian country report.

International Comparison

The QIS 3 exercise has spawned a wealth of country and aggregated reports. Table 4 presents a comparison of the results for Austria, Germany and the G-10 countries. Generally, the international reports show similarities with the Austrian sample. Large banks, i.e. Group 1 banks, exhibit a stronger increase in RWA across all approaches than Group 2 banks. Generally speaking, all banks benefit from the transition to the IRB approach, but again the decline is more pronounced for Group 2 banks than for their Group 1 counterparts. This comparison confirms the conclusions drawn in the previous section. Small banks with a business focus on retail and SME customers benefit from the more favorable capital charges applicable to these categories and are less affected by the rather higher charges for sovereign, bank and specialized lending exposures, as their share in these fields of business is lower. The Austrian results generally lie between those of Group 1 and Group 2 banks. In the absence of any Group 1 bank in Austria, the banks with a business focus other than the retail business obtained results that are chiefly comparable with those of Group 2 banks and thus were responsible for the general result lying between that of Group 1 and Group 2.

Table 4

Change in RWA – International Comparison

	Austria	G-10		Germany	
		Group 1 banks	Group 2 banks	Group 1 banks	Group 2 banks
	%				
Standardized	7	11	3	12	0
FIRB	−2	3	−19	0	−10

Source: Country reports of Germany, G-10, Austria.

However, in analyzing the results, one has to bear in mind that the variability of the individual bank results is enormous. Thus, under the standardized approach, the maximum values obtained for the G-10 sample vary between –15% and +84% for Group 1 banks and between –23% and +81% for Group 2 banks. The EU sample similarly contained values ranging from –7% to +31% and –67% to +81%, respectively. The same applies to the foundation IRB approach, which yielded an across-the-board variability of nearly 100 percentage points; the results are distributed more symmetrically around zero (= no change in RWA) though.

Table 5 shows the change in RWA under the standardized approach, subdivided into the most important exposure categories. Generally, the changes in RWA are largely similar across the different samples. The differences are such that they can be attributed to differences in the recognition of eligible collateral as well as differing measures of default risk, conservative estimates and similar factors. In the Austrian sample, the outlier in the category of sovereign exposures is attributable to the fact that, by comparison, neither the G-10 nor the German result comprised those banks that under the current framework exhibit very low RWA for sovereign exposures or none at all. For this group of banks the change in comparison with the standardized approach is either not defined or very high, but always relates to a very low exposure volume, which in turn results in an overstatement of the effects. In the Austrian country report the sample remained unchanged.

An international comparison of the results obtained for the foundation IRB approach confirms the above-described changes observed for the Austrian sample. Compared with the standardized approach, RWA again decline markedly for retail exposures

Table 5

Change in RWA – Standardized Approach

	Austria	G-10		Germany	
		Group 1 banks	Group 2 banks	Group 1 banks	Group 2 banks
	%				
Corporate	−3	1	−10	1	−10
Sovereign	136	19	1	19	1
Bank	42	43	15	43	15
Retail (total)	−18	−21	−19	−25	−23
Residential	−21	−20	−14	−27	−20
Other retail	−20	−22	−19	−23	−20
SME (total)	−5	−3	−5	−4	−6
thereof: corporate	2	..	..	1	1
retail	−17	..	..	−13	−12

Source: Country reports of Germany, G-10, Austria.

Table 6

Change in RWA – Foundation IRB Approach

	Austria	G-10		Germany	
		Group 1 banks	Group 2 banks	Group 1 banks	Group 2 banks
	%				
Corporate	−22	−9	−27	−9	−27
Sovereign	386	47	51	47	51
Bank	30	45	−5	45	−5
Retail (total)	−35	−47	−54	−45	−44
Residential	−42	−56	−55	−53	−44
Other retail	−35	−34	−27	−34	−26
Qualifying revolving	−24	−3	−33	−7	−33
SME (total)	−2	−14	−17	−15	−17
thereof: corporate	4	..	..	−11	−3
retail	−29	..	..	−26	−24

Source: Country reports of Germany, G-10, Austria.

and, to a somewhat lesser degree, for corporate and SME exposures. Like in the Austrian sample, the cost of capital for bank exposures increases slightly for Group 1 banks and decreases for Group 2 banks. As regards retail exposures, Austria fails to match the high rate of decline in RWA observed especially for G-10 banks under the IRB approach. This might be attributable to the fact that residential mortgage loans are eligible for state guarantees in some countries, which may have resulted in a perceptible reduction in loss given default in comparison with Austria. Moreover, at about 32% of total retail loans, the share of residential mortgage loans reported by Austrian banks was considerably lower than, for instance, the roughly two-thirds reported by German banks.

A conspicuous feature that becomes evident from the data shown in tables 5 and 6 is that Austrian corporate exposures, in comparison with the other samples, benefit perceptibly from the changeover from the standardized to the foundation IRB approach, whereas SME exposures treated as corporate exposures deteriorate slightly against the general trend. For this reason, we analyze the reported credit risk estimates in the corporate and SME categories in more detail below. Table 7 shows the credit risk estimates reported for corporate loans in the individual samples. We see that corporate exposures with a probability of default (PD) of less than 0.2% are substantially higher in the Austrian sample than in the sample of German Group 1 and Group 2 banks. At the same time, the share of exposures with a PD higher than 0.8% is markedly lower at about 17%. In the Austrian sample, the LGD rate (net of reported collateral)

Table 7

Credit Risk Estimates for Corporate Exposures

	PD < 0.2%	0.2% ≤ PD < 0.8%	PD ≥ 0.8%	Defaulted	LGD
	%				
Austria	53	26	17	4	43
Group 1 banks					
Germany	38	24	34	4	48
G-10	42	30	25	3	40
Group 2 banks					
Germany	38	36	23	3	48
G-10	58	21	17	3	40

Source: Country reports of Germany, G-10, Austria.

Table 8

Credit Risk Estimates for SME Exposures (Treated as Corporates)

	PD < 0.2%	0.2% ≤ PD < 0.8%	PD ≥ 0.8%	Defaulted	LGD
	%				
Austria	13.5	34.9	45.6	5.9	42.7

Source: Austrian country report.

is shown at 43%, which puts it between the German and the G-10 samples. Since the correlation between LGD and the capital requirement is linear, i.e. a 1% increment of LGD translates into a 1% increase of the capital requirement, higher RWA ensue in comparison with the G-10, and lower ones in comparison with Germany.

Unfortunately, the reports on the QIS 3 results published to date fail to show the results for SME exposures in as much detail as for corporate exposures. In analogy to table 7, table 8 presents a breakdown for the SME category. A striking feature is the markedly poorer credit risk assessments, which appear justified given the high percentage of defaulted loans. As the LGD rate is only minimally below that for corporate exposures, the higher average default risk is not canceled out by a higher degree of collateralization, which probably explains the higher RWA for SME exposures under the foundation IRB approach.

Conclusions

In this analysis, we have attempted to distill the most important insights to be gained from the wealth of available data. The high degree of consistency in the changes in RWA and hence of the cost of capital in the different exposure categories across all approaches and groups of banks may be interpreted as evidence of the generally high quality of the reported data and the computed results. Nevertheless, the high degree of variability of the microlevel results also shows that some of the methods have not yet been developed to perfection. After all, the study was carried out about four years ahead of the full implementation of the Basel II framework. The capital ratios of the banks that provided the data for the Austrian QIS 3 continue to exceed the regulatory minimum capital requirement of 8% by a wide margin. Under the standardized approach, total RWA of the 18 banks included in the Austrian sample increased by 6.6% on average, whereas the foundation IRB approach applied by 11 banks resulted in a decrease by 1.8% in comparison with the current framework. Banks focusing on retail business, i.e. mostly smaller institutions, generally exhibit lower RWA under the new approaches and also benefit more perceptibly from switching to more advanced IRB approaches. Banks operating primarily in areas that carry higher risk will have to apply comparatively higher capital charges under the new, more risk-sensitive approaches. However, the new framework offers greater scope for applying credit risk mitigating techniques, allowing banks to reduce risk and thus to achieve substantial reductions in capital costs on some exposures. The QIS 3 data was not conclusive in this respect, which is why the volume of RWA may well be overstated in the results. Moreover, as regards corporate exposures, special note must be made of the fact that most data relate to a period characterized by higher default rates. In addi-

tion, Austrian banks took a very conservative stance when interpreting the default criterion under the new framework, which is not yet in general use throughout the banking sector.

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Cultural Risk and Risk Culture: Operational Risk after Basel II

Roman Buchelt
Stefan Unteregger

Prologue

"When anyone asks how I can best describe my experience in nearly 40 years at sea, I merely say, uneventful. Of course there have been winter gales, and storms and fog and the like, but in all my experience, I have never been in any accident of any sort worth speaking about. I never saw a wreck and never have been wrecked, nor was I ever in any predicament that threatened to end in disaster of any sort."

E. J. Smith

After two million sea miles logged and 26 years of commanding passenger ships, Edward John Smith knew exactly what it was that sounded comforting to passengers. He was considered experienced, highly capable and enjoyed an excellent reputation as the "Millionaire's Captain," and today we would not attach any importance to what he said had he not been the captain on the maiden voyage of the *Titanic,* which, as is generally known, had been acclaimed as practically unsinkable until it went down after hitting an iceberg, taking the lives of 1,500 passengers and crew members – including that of the captain.

Why the *Titanic* sank is a topic of discussion to this very day, but it seems as if a chain of errors and inadequacies were the cause, as is often the case in catastrophes of this dimension. First of all, the myth that the ship was unsinkable led the captain to navigate too fast and too carelessly through iceberg waters. Furthermore, the safety measures were inadequate – only half as many places in lifeboats as passengers on board (and even so this was more lifeboats than required by the regulations). Other reasons were poor emergency planning and drills, and above all, a lack of discipline – many lifeboats could not be lowered to the water fast enough or were half empty because passengers simply refused to get in.

Thus, the entire incident appears to be the outcome of the failure of interrelated factors: *people* (the crew, and also the passengers), *systems* (the ship including all of its equipment) and *processes* (emergency plans and procedures) triggered by an *external event* (the iceberg). These are precisely the four classical causes of what is called *operational risk,* which we will look at more closely in the following. At the end of that fateful night of April 15, 1912, the *Titanic* lay at the bottom of the North Atlantic Ocean as it were like a punishment for the arrogance of its builders and operators, reduced to the bitterly and dearly learned lesson that not to know one's risks (or refusing to see them) does not necessarily mean that there are no risks.

Banks' Operational Risks

Banks are not unsinkable either, though of course, when they go down this usually does not involve the loss of human life, but still, the comparison of some banking risks with those of maritime navigation is far-fetched only at first sight. It is not only the fact that many concepts used in risk management come from the maritime insurance industry, the essential meaning of the term *operational risk* is much closer to the original meaning of risk (from the Italian *rischio,* Spanish *risco* = a cliff) than is true for the other risks of the banking business. We do not necessarily need to use an analogy of the *Titanic* to see that organizational structures and responsibilities, process design, system analysis, emergency planning, etc. are not only effi-

ciency-enhancing or merely perfunctory measures in running a business but also represent essential risk factors, specifically the risk factors of operational risk.

Operational risk is definitely not something that can be ignored: for most banks, it may be much greater than market risk and constitutes the second-largest risk category after credit risk. As illustrated by some spectacular cases in the past ten years, these risks can cause a bank to suffer major losses. The loss, for example, in the Schneider case in Germany in 1994, in which some 50 banks had granted excessive loans due to inadequate credit auditing and loan approving procedures, totaled over DEM 2 billion. At the Japanese Daiwa Bank, a single trader lost USD 1.1 billion in speculative dealings over a period of 11 years by taking advantage of a much too broad scope of competence and by engaging in illegal and unauthorized trading. Even the renowned Barings Bank with its 200-year old history was driven into bankruptcy by one clever gambler; its losses totaled USD 1.4 billion.[1])

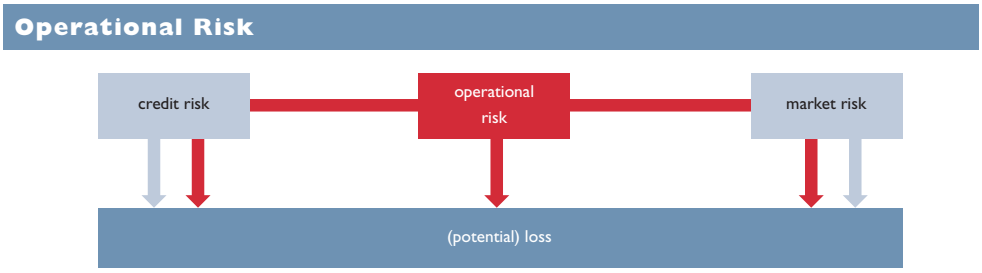
This list could go on forever, but what has actually hoisted the concept of operational risk to a risk category in its own right has been – apart from such illustrative examples of operational losses in the recent past – the increasing intrinsic complexity of the banking business fostered by the advent of (and dependence on) the blessings of information technology, new and changing fields of business, growing globalization and automation as well as the emergence of increasingly complex products. As the measurement of credit risk becomes more and more sophisticated, the capital cushion available for softening the other risks is flattening. For this reason the Basel Committee for Banking Supervision found it necessary and (in contrast to reputational or strategic risk) feasible to have a separate view of operational risk.

However, it is apparent that the nature of operational risk and thus also the requirements on how to deal with this type of risk are very different from the classical risk categories of market and credit risk. It may very well be justified to speak of cultural risk in this context, considering that we are dealing with a highly varied and interrelated set of risks with different origins when referring to the overarching term of operational risk. In other words we are looking at the corporate culture, or more precisely, at the risk culture, which essentially is the way a company conceives risk and implements risk management in daily business. The management of such a ubiquitous risk, which is at the same time so hard to grasp, is an essentially managerial task. It must be performed on a broad organizational basis with support from the executive board and through efficient communication.

It is one of the characteristics of operational risk that it may already exist within a bank (and it usually does) before credit risk occurs or market risk is incurred. The difference between operational risk and other risks is the fact that credit and market risks are business risks specific to the banking industry in contrast to operational risk as a general business risk or more precisely, operating hazards, which, however, also have particular features

1 *Description of the Barings and Schneider cases are contained in Utz (2002), as regards Daiwa see Brandner et al. (2002).*

Chart 1



Operational risk may materialize directly or indirectly through credit or market risk.

in the banking business. Whether or not a loss event is to be classified as an operational loss event is not determined by the consequences of the event but rather by the cause(s). Operational risk may materialize directly or indirectly through market or credit risk. In this context, we would like to mention as an example all transactions carried out with fraudulent intent (like at Daiwa and Barings) in which a market risk generated a loss (price loss or variation margin payments) but the cause was an operational risk (deficiencies in the organization and processes, fraud). The losses in the Schneider affair, in contrast, were caused by nonperforming assets, which apparently represents a typical case of credit risk; but in fact operational risk was at the root also of this case (deficiencies in credit auditing and loan approving procedures).

To identify the causes as described above is the only rational way to arrive at a definition of operational risk that allows a differentiation from other risk categories (see chart 1). Although the negative definitions of operational risk as everything that is not credit or market risk, which had been common practice for a long time, do indicate to a certain extent what might be meant, they are hardly suitable for precisely defining the scope; neither are definitions with a focus on certain technical risks (such as those used in information technology) which, by ignoring interdependencies, do not capture the full extent of the given risk potential. On the basis of the already mentioned four causes, we will look at the Basel approach to solve the problem of the definition in the next section.

It is clear that even before the application of the term operational risk to banks (it is a term taken from nuclear technology just like MCA or maximum credible accident), banks in practice devoted particular attention to specially risk-exposed areas. Ever since the beginning of banking, people have been aware of the temptation that such an accumulation of assets constitutes for persons with a criminal inclination (within and outside the bank), but the risks of external events (fires, flooding and other natural disasters) are also just as old as any type of business activity.

However, technological progress created new types of dependence and thus potential threats, ranging from the issue of energy supply, which grew in significance at the same pace as the influence of information technology increased, to electronic data processing with its seemingly inexhaustible potential for errors and breakdowns of all types. In this context, decision-makers also finally grasped the fact that employees are prone to make more mistakes, the more complex their tasks are.

Generally, long before the advent of Basel II many credit institutions had already put in place the most varied set of control mechanisms and procedures as well as defined responsibilities to manage those vulnerabilities that could not be summarized under the uniform concept of a risk category but nonetheless had to be avoided. The sum of these procedures was a great step forward towards the establishment of an operational risk management system, and for this reason we would like to describe them briefly.

To counter physical threats, very extensive security and safety measures have become commonplace (security glass, access controls, fire alarm and extinguishing systems, preventive measures against theft and robbery), supplemented by operating instructions and security rules. Insurance policies are also widely used in this area. The design and documentation of efficient workflows that are the least prone to error is usually the task of a specialized *organization department* whose job typically includes monitoring processes, identifying problem areas and eliminating them by optimizing workflows. The organization department sometimes includes the area of *information technology* unless it has been set up as a separate organizational unit or the main tasks of electronic data processing have been outsourced to a subsidiary or other IT center used jointly with other institutions. This area covers all data security measures as well as the management of access rights and system availability in accordance with the requirements of the specific areas and quality assurance in the development of in-house software. The *legal department* is entrusted with the highly specialized task of tracing and eliminating problems and hindrances that may result from statutory or contractual obligations and of preventing damages from occurring through unclear – and in some case even illegal – contractual provisions. The *internal audit department* serves as another control layer, supplementing workflow rules and management responsibilities. Its task is to discover and eliminate deficiencies and sources of errors and it is also responsible for monitoring the "human factor."

We therefore can see that not only had some of the vulnerabilities subsumed under the concept of operational risk already been taken into account – at least to a certain extent – by banks long ago, but especially that currently the responsibility of monitoring, controlling and mitigating these risks is distributed across the entire structure of banks. Thus, it is crucial for banks to implement and integrate an operational risk management system.

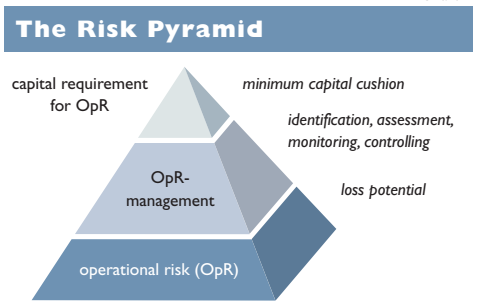
The Basel Rules on Operational Risk

The central element of the Basel II rules on operational risk is the definition of this risk category by the Basel Committee on Banking Supervision as *"... the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. This definition includes legal risk, but excludes strategic or reputational risks."*[1])

This definition covers the main risk factors dealt with in the previous section; the definition rests purely on the causes, which, considering the nature of operational risk, is an optimal

1 *See BIS (2003).*

Chart 2



Capital requirements are a capital cushion that will only work if they rest on the efficient management of operational risks.

approach and methodologically very sound. Moreover, the Basel Committee's definition coincides in many areas with other definitions that have evolved internationally, except for the fact that the main risk factors may have been assigned different names and weightings. Thus, for example, the Group of Thirty adds the factor of management error as a separate item to the list of failures of people and processes[1]) to specifically point out the dire consequences of errors of judgment at the highest level, while the Association of German Public Sector Banks (Bundesverband Öffentlicher Banken Deutschlands, VÖB) explicitly mentions catastrophes in addition to external events.[2]) Nonetheless, the Basel definition very well covers the central aspects of operational risk; it should also be noted that it explicitly mentions legal risk and clearly delimits operational risk from strategic and reputational risks. It is also worth mentioning from a historic point of view that the original definition[3]) still spoke of the ". . . risk of direct or indirect losses . . .," but was then shortened and put into the wording mentioned above, which leaves less room for interpretation.

The definition of operational risk is very important because, on the one hand, it sets it apart from other risk categories and, on the other hand, forms the basis for the treatment of operational risk ranging from raising awareness at the management level to the calculation of capital requirements. We would like to use a pyramid to illustrate this point.

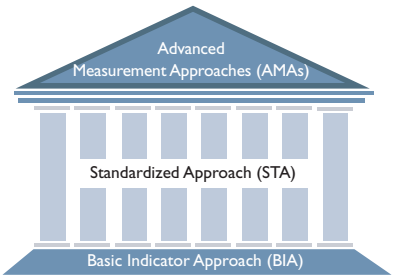
The base of the pyramid is made up of the operational risks inherent in a bank's activities, products and infrastructure; the bank must be aware of this fact to be able to take effective measures to limit these risks. As illustrated above, procedures and control mechanisms are already in place at this level in the various areas, which have been designed specifically for certain types of risks and certain risk aspects. Acknowledging these facets of operational risk, as it permeates the entire bank and cannot be allocated to one specific area, is the first step in developing a risk culture with the ultimate purpose of establishing a comprehensive and consistent operational risk management framework.

Such a risk management framework is the next step in the pyramid, the middle section. This level is where the central control and coordination of all efforts occur; this is the only way to avoid loopholes, redundancies or conflicts relating to scopes of competence which might undermine the efficiency of risk management procedures. A central office is necessary in order to keep an eye on the overall interaction between the areas and any coordination problems that may arise, a task that is not feasible at the level of divisions or departments.

1 *See van den Brink (2001). The publications of the Group of Thirty are available at http://www.group30.org*
2 *See VÖB (2001).*
3 *See BIS (2001).*

Chart 3

The Basel Approaches for the Calculation of the Operational Risk Capital Charge



Even the control mechanisms available to management, which it needs to comply with its statutory responsibilities, can only be guaranteed by implementing a comprehensive risk measurement and reporting system.

The top of the pyramid and also the decisive innovation of Basel II for operational risk management is doubtlessly the capital cover for losses arising from operational risk. In the first draft[1]) of the new capital adequacy framework, the Basel Committee was still skeptical about the usefulness and enforceability of capital requirements for operational risk (as a subgroup of what is termed "other risks"), but ever since the second consultative paper it has become firmly anchored in the document. Currently, there are three approaches to determining the amount of capital required to cover operational risk; these approaches are progressively more complex and are supported by increasingly just as complex application requirements (see chart 3).

The Basic Indicator Approach (BIA) computes the capital charge directly as a percentage (alpha factor, $\alpha = 15\%$) of the bank's average total gross income for the past three years. Thanks to its simplicity, this approach is easy to apply; its weakness, however, is that the indicator is hardly risk sensitive and may moreover contradict overall banking management objectives. Although higher income may indicate that it has been earned by taking greater risks, these will hardly be limited to operational risks, i.e., only the indirect effect of operational risk is taken into account. Neither would this approach reward banks that apply operational risk management (e.g. risk mitigation measures). According to the Basel Committee, internationally active banks and banks with major operational risks should select an approach commensurate with their risk portfolios, in others words, not the Basic Indicator Approach.

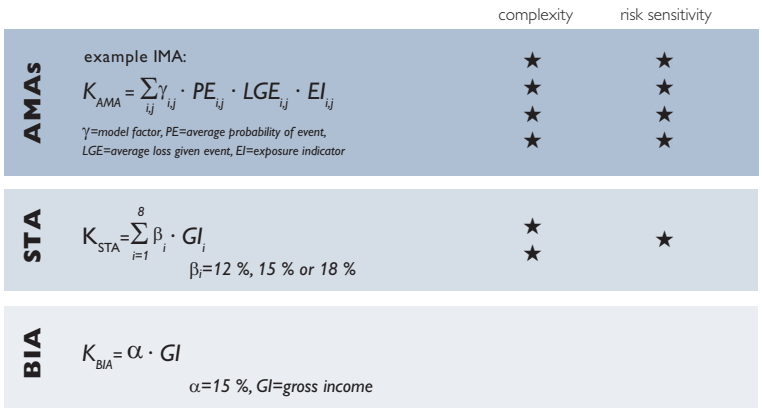
One step up is the Standardized Approach (STA), which distributes the average gross income of the past three years across eight prescribed lines of business (corporate finance, trading and sales, retail banking, commercial banking, payment and settlement, agency services and custody, asset management, retail brokerage). For each of these lines of business, a beta factor has been defined, which, depending on the degree of risk, is 12%, 15% or 18% and is applied like the alpha factor of the BIA, but only to the gross income of each of the respective business lines. The capital requirement results from the sum of the capital requirements of all lines of business. By making a differentiation between the more and the less risky lines of business, the Standardized Approach achieves a somewhat better risk sensitivity than the Basic Indicator Approach; however, it does not reward operational risk management measures either.

The most complex methods of calculation are the Advanced Meas-

1 *See BCBS (1999).*

Chart 4

Methodologies of Calculation, Complexity and Risk Sensitivity of the Basel Approaches for Operational Risk



Capital requirement for OpR (K) in the various approaches.

urement Approaches (AMAs), which is actually the umbrella term for all loss data-based, quantitative-statistical methodologies that banks will be permitted to use in the future to calculate the capital requirements for operational risk.

As such approaches are currently still being developed and to date no standardized method has emerged, the Basel Committee intends to give banks the widest scope possible in defining their methods as long as they rest on a sound methodological and quantitative foundation. This is why the Basel Committee does not give any further details of possible approaches but states as main types of approaches of this group the Internal Measurement Approach (IMA), the Loss Distribution Approach (LDA) and the Scorecard Approaches (SCA). All AMAs have in common that they add the dimension of classes of potential loss event types to the classification of standardized lines of business of banks in order to incorporate internal loss data and external loss data of the bank in a methodologically meaningful way. Internal Measurement Approaches combine event probabilities and average losses computed using loss data and risk indicators for each business line/event type combination in order to calculate the capital charge; the Loss Distribution Approaches model loss distributions by line of business and risk event type based on historic loss data; Scorecard Approaches attempt to control the amount of an initially determined capital requirement by using qualitative features as well as, for example, threshold values for quantitative indicators.

The implementation of an AMA requires relatively great methodological and monitoring efforts, but this makes the procedures accordingly risk-sensitive, i.e., their results can be used directly to control operational risk. Furthermore, at present only banks applying an AMA are permitted to factor to a limited extent operational risk-mitigating measures (insurance contracts) into capital charges.

Sound Practices for the Management and Supervision of OpR

The Sound Practices paper outlines a set of principles that provide a framework for the management and supervision of operational risk. These ten principles are phrased in general terms and are intended to be applicable to all banks regardless of their individual environment. Thus the Basel Committee was able to summarize the discussion as it stands today and, in light of the increasing significance of operational risk, to create a foundation for further work. The first three of the ten principles are dedicated to the establishment of a management environment for operational risk:

(1) The board of directors should be aware of the major aspects of the bank's operational risks as a distinct risk category and should participate in the further development of the risk management framework. This framework should be based on a firm-wide definition of operational risk and lay down the principles of how to identify, assess, monitor, control and mitigate operational risk.

(2) The internal audit function should monitor and assess the operational risk management framework, but it should not be directly responsible for operational risk management.

(3) Senior management should ensure the consistent implementation of the operational risk management framework throughout the entire banking organization as well as the definition of the necessary responsibilities, guidelines and procedures.

The following four principles detail the requirements of risk management:

(4) Banks should identify and assess operational risk in its entirety, especially when new products, activities, processes or systems are introduced.

(5) Banks should regularly monitor operational risk profiles and material exposures to losses; there should be regular reporting of pertinent information to senior management.

(6) Banks should install policies, processes and procedures to control and/or mitigate operational risks. Banks should periodically review these strategies.

(7) In the event of severe business disruptions, banks should have contingency plans and business continuity plans in place to ensure their ability to operate on an ongoing basis.

On the role of supervisors:

(8) Supervisors should require that all banks, regardless of size, have an effective framework in place to identify, assess, monitor and control/mitigate material operational risks.

(9) Supervisors should conduct regular evaluations of a bank's policies related to operational risk management; they should ensure that there are appropriate mechanisms in place which allow them to remain apprised of developments at banks.

The last principle refers to disclosure requirements:

(10) Banks should make sufficient public disclosure to allow market participants to assess a bank's approach to operational risk management.

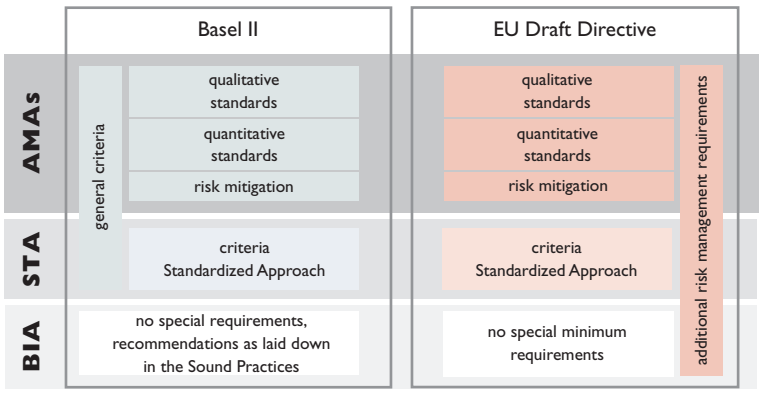
Although Basel (i.e. the third consultative paper) does not make the Sound Practices directly binding, their influence on the application requirements described in the following is clear.

When introducing an approach to calculating operational risk charges, the middle section of the risk pyramid, i.e., operational risk management in the widest sense, is given special attention as also shown in the *Sound Practices for the Management and Supervision of Operational Risk*[1]) published by the Basel Committee on Banking Supervision (these overarching principles were developed gradually from the working papers of the Basel Committee of 1998[2]) and are considered a minimum standard for operational risk management owing to their general significance – see box). Thus, the actual introduction of one of the approaches described in the New Basel Accord is formally contingent on the fulfillment of the

1 *See BCBS (2003).*
2 *See BCBS (1998a, 1998b).*

Chart 5

Comparison of the Planned Application Requirements of the Approaches Under Basel II and the EU Draft Directive



application requirements which, in a modified form, are included also in the provisions of the current draft Directive of the European Union.

There are no binding application requirements for the Basic Indicator Approach defined in the framework of the Basel draft; however, it does strongly recommend that banks apply the *Sound Practices for the Management and Supervision of Operational Risk* when calculating operational risk capital charges.

The current Basel consultative paper sets out common general criteria for banks to qualify for the use of the STA and AMAs, such as the involvement of the board of directors and senior management, the establishment of a conceptually sound risk management framework and the availability of sufficient resources to implement the framework. Additionally, separate criteria are formulated specifically for the STA and the AMAs, some of which elaborate in more detail the principles of the *Sound Practices.* In the case of the AMAs, these criteria are grouped into qualitative and quantitative standards, with the former basically elaborating on the principles contained in *Sound Practices,* while the latter are guidelines for data quality and the statistical-methodological implementation of the approaches. All application standards have in common that a credit institution may not use the STA or the AMAs to calculate operational risk capital charges unless all of the pertinent requirements have been met.

The proposals in the current draft of the European Union Directive follow a similar train of thought; here as well there are no separate criteria defined for use of the BIA but a catalogue of criteria for the application of STA and detailed qualitative and quantitative standards for AMAs (instead of common general criteria for the STA and AMAs, those criteria that apply to both approaches were included in both cases for the sake of clarity). However, we would like to stress the additional risk management requirements laid down in Annex I of the working document, which define, irrespective of the approach selected, i.e., also for the BIA, certain minimum standards for operational risk management. On the one hand, these are in Section 1 of the Annex in the form of general requirements for risk management, which also apply, of

course, to operational risk, and on the other hand, in Section 7 with the special requirements for operational risk.

The middle section of the pyramid shown may by no means be disregarded even in the case of BIA and STA, although the requirements grow more sophisticated the greater the complexity of the approaches and thus in the case of AMAs, also call for the highest qualitative and quantitative standards. Because of the low risk sensitivity of the two simpler approaches it is all the more important to incorporate risk analysis methods and quantitative measures into the overall operational risk management framework. Thus, banks can reap the benefits of higher risk awareness and, as a consequence, risk prevention. Unless this is accomplished, the notion of having done everything necessary to control/mitigate operational risks by holding the calculated capital charge could turn out to be a dangerous delusion. There is no doubt about the Basel Committee's view of the significance and especially of the close relationship between the framework for operational risk management and the calculation procedures for the applicable capital charges: *"The qualifying criteria are minimum standards . . . that a bank must meet in order to avail itself of a particular regulatory capital assessment methodology. The supervisor may well wish to use the supervisory review process to assess compliance with these criteria, but they form an integral part of the first pillar."*[1])

Aspects of Operational Risk Management

The nature of operational risk is very complex, and one of its features is that it is often unconsciously incurred. It is all the more difficult and important to actively identify risks and to develop a culture of risk awareness among individuals as well as at the overall institutional level. Operational risks frequently appear in places where they are the least expected, because generally "something like this" has "never happened before" and "especially not here." This is why relying solely on past experience does not seem to be a viable option in this context. In contrast to the other risk categories, for which the risk sources are intelligible and fairly clear, the challenge is to anticipate as many aspects of operational risk in a bank as possible, always bearing in mind Murphy's Law: anything that can go wrong will go wrong at some point. Thus, the only way to prevent or, at least, limit damages that may occur is to develop the appropriate procedures.

Operational risk management is doubtlessly a type of risk management different from others because it is not limited in its scope to a division of a company or a line of business; moreover, the nature of the various sources of failure – processes, people, systems – varies widely and requires a broad range of preventive and control mechanisms. On the assumption of a uniform definition of operational risk that makes reference to the source and is preferably oriented on the Basel definition, operational risk management concerns the entire bank. The different possible forms of operational risk must be identified and assessed as regards their potential for damage and the processes for preventing and limiting risk must be installed; the objective is to anchor a way of dealing with risk just as strongly in the corporate culture as the risk itself is linked to the nature of the business operations.

1 *See BCBS (2001), p. 13.*

The comprehensive nature of operational risk management makes it a task that cannot be tackled by a small team of specialists alone but also needs the support of senior management and the entire management staff. Indispensable in this context is continuous, open and direct communication in both directions, not only to properly capture and assess the risk situation, but also to achieve the necessary acceptance of the measures linked to the introduction of the framework.

However, simply implementing a risk management framework at one time is not enough because sources of risk change over time. Therefore, it must be part of the new risk culture to create and maintain a proactive system that ensures the ongoing adjustment to any changes. Apart from the establishment of new processes to assess operational risks that may arise from new products, distribution channels or lines of business, what is also necessary is the setting up of a workable reporting system to communicate existing weak spots and the need to make changes to the framework in the future and to enable a response to cases of damages not by pointing fingers but by preparing concrete countermeasures.

The last highly topical aspect of operational risk management concerns the implementation of the Basel II provisions. The numerous parallel projects underway for the purpose of implementing the new rules will have far-reaching impacts on banks' activities at the organizational and technical levels. Workflows need to be restructured, systems need to be enlarged and maybe even new ones created. It is an enormous task that carries the risk of having a dynamic effect on operational risk because the complexity of the projects creates a certain susceptibility to error. New, unfamiliar processes may carry a higher risk potential in the initial phase of adjustment, just as newly developed IT systems are potential sources of error. Thus it may very well be that the implementation of Basel II, which had been set up to control and mitigate risks, could in fact increase operational risk. This heightened risk would not be discernible at all at the level of the formal calculation of capital charges with the less risk-sensitive approaches (BIA, STA); the more sophisticated approaches (AMAs) and their models based on historic loss data would discover the risk only with difficulty or (too) late. The only way to recognize and avoid this risk is by consistently conducting assessments of the risk situation and maintaining a functioning system of quality assurance during the implementation of an operational risk management framework. This includes quality control measures for project work and software development as well as sufficient training for the staff affected by the changes.

Conclusions

Ultimately, there is no way around operational risk management at banks – either by implementing the framework proposed by the Basel Committee on Banking Supervision o a slightly adapted version. This has little to do with whether or not Basel II will be introduced as scheduled; rather, in many areas there is an unavoidable need to bring management methods up to date with the risks that actually exist at present, among which there are a few that have been underestimated or even overlooked up to now. Operational risk management is not a futile exercise and cannot be regarded as a real additional burden.

Many of the measures foreseen would have to be implemented sooner or later for reasons of prudence, even without Basel II; and in fact, some banks have already taken these measures before and, especially, during the discussion about the Basel Accord.

Nonetheless, the positive side effects of implementing an operational risk management framework are frequently disregarded even though the creation of higher risk awareness and transparency, the improvement of process quality and the significant reduction in the number of cases of damages or loss by applying operational risk management is doubtlessly valuable in itself and constitutes a vital contribution to overall banking management. Successful risk control and mitigation by maintaining an effective operational risk management framework will without doubt enhance a bank's profile, and ultimately also give it competitive advantage because one thing is clear: regardless of who – passenger or crew member – no one likes to find themselves in distress at sea.

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Annex of Tables

Annex of Tables

Cutoff date for data: November 6, 2003

Conventions used in the tables:
× = For technical reasons no data can be indicated
. . = Data not available at the reporting date

Revisions of data published in earlier volumes are not indicated.
Discrepancies may arise from rounding.

International Environment

Table A1

Exchange Rates

Period average (per 1 EUR)	1999 year	2000	2001	2002	1999 1st half	2000	2001	2002	2003
U.S. dollar	1.0668	0.9240	0.8956	0.9449	1.0891	0.9606	0.8986	0.8983	1.1052
Japanese yen	121.43	99.53	108.73	118.06	129.2250	102.50	108.03	116.24	131.06
Pound sterling	0.6592	0.6095	0.6219	0.6288	0.6723	0.6119	0.6235	0.6214	0.6853
Swiss franc	1.6004	1.5577	1.5104	1.4672	1.5996	1.5852	1.5307	1.4691	1.4917
Czech koruna	36.886	35.609	34.051	30.804	37.408	36.036	34.544	31.060	31.054
Hungarian forint	252.71	260.05	256.42	242.57	251.051	257.58	261.66	243.19	244.21
Polish zloty	4.2251	4.0070	3.6689	3.8559	4.2004	4.0727	3.6294	3.6667	3.9940
Slovak koruna	44.0966	42.603	43.293	42.673	44.4541	42.1547	43.418	42.595	42.285
Slovenian tolar	194.6329	206.6714	218.1159	226.2558	191.9298	203.3470	216.4035	224.0450	227.8712

Source: Thomson Datastream.

Table A2

Key Interest Rates

End of period, %	1999		2000		2001		2002		2003
	1st half	year	1st half	year	1st half	year	1st half	year	1st half
Euro area	2.50	3.00	4.25	4.75	4.50	3.25	3.25	2.75	2.00
U.S.A.	5.00	5.50	6.50	6.50	3.75	1.75	1.75	1.25	1.00
Japan	0.50	0.50	0.50	0.50	0.25	0.10	0.10	0.10	0.10
United Kingdom	5.00	5.50	6.00	6.00	5.25	4.00	4.00	4.00	3.75
Switzerland[1])	×	×	3.00–4.00	3.00–4.00	2.75–3.75	1.25–2.25	0.75–1.75	0.25–1.25	0.00–0.75
Czech Republic	6.50	5.25	5.25	5.25	5.00	4.75	3.75	2.75	2.25
Hungary	15.00	14.25	11.00	11.75	11.25	9.75	9.00	8.50	9.50
Poland	13.00	16.50	17.50	19.00	15.50	11.50	8.50	6.75	5.25
Slovak Republic	×	×	8.50	8.00	7.75	7.75	8.25	6.50	6.50
Slovenia[2])	8.88	8.35	9.89	11.85	11.16	8.00	8.75	8.25	5.50

Source: WIIW (The Vienna Institute for International Studies), Datastream, Bloomberg, national sources.

[1]) SNB target range for three-month LIBOR.

[2]) Banka Slovenije redefined its key interest rate in February 2003.

Table A3

Short-Term Interest Rates

Three-month rates, period average, %	1999 year	2000	2001	2002	1999 1st half	2000	2001	2002	2003
Euro area	2.96	4.39	4.26	3.32	2.863	3.91	4.67	3.40	2.53
U.S.A.	5.41	6.53	3.78	1.80	5.04	6.37	4.77	1.91	1.29
Japan	0.28	0.29	0.16	0.09	0.32	0.13	0.24	0.10	0.09
United Kingdom	5.44	6.10	4.97	4.05	5.35	6.14	5.44	4.07	3.67
Switzerland	1.40	3.08	2.94	1.17	1.17	2.70	3.32	1.54	0.41

Source: Thomson Datastream.

Table A4

Long-Term Interest Rates

Ten-year rates, period average, %	1999 year	2000	2001	2002	1999 1st half	2000	2001	2002	2003
Euro area	4.66	5.44	5.03	4.92	4.17	5.54	5.09	5.20	4.05
U.S.A.	5.64	6.03	5.00	4.61	5.26	6.33	5.16	5.09	3.77
Japan	1.76	1.76	1.32	1.27	1.74	1.75	1.33	1.42	0.70
United Kingdom	5.01	5.33	5.02	4.91	4.60	5.45	5.04	5.21	4.35
Switzerland	3.04	3.93	3.38	3.20	2.65	4.01	3.46	3.52	2.49

Source: Thomson Datastream, Bloomberg, national sources.

Table A5

Corporate Bond Spreads

Period average, percentage points	1999 year	2000	2001	2002	1999 1st half	2000	2001	2002	2003
Euro corporate bond spreads against euro benchmark	×	1.00	1.17	1.20	×	0.79	1.05	0.98	0.64
U.S. dollar corporate bond spreads against U.S. dollar benchmark	3.35	4.26	5.48	5.50	3.14	3.96	5.97	4.71	5.39

Source: Thomson Datastream.

Table A6

Stock Indices[1])

Period average	1999 year	2000	2001	2002	1999 1st half	2000	2001	2002	2003
Euro area: EURO STOXX	325.80	423.94	336.29	259.97	311.80	430.55	366.83	300.56	198.90
U.S.A.: S&P 500	1,327.24	1,426.55	1,193.78	995.34	1,293.96	1,432.46	1,254.66	1,101.28	899.27
Japan: Nikkei 225	16,829.89	17,161.59	12,114.46	10,119.31	15,655.53	18,662.80	13,364.98	10,978.07	8,361.43
Austria: ATX	662.95	623.64	627.30	628.61	666.40	633.78	639.21	664.27	636.88
Czech Republic: PX50	455.17	550.45	411.17	437.64	416.03	591.13	448.38	434.15	505.08
Hungary: BUX	6,728.81	8,742.07	6,900.85	7,760.39	6,121.90	9,430.84	7,150.77	8,113.94	7,772.15
Poland: WIG	1,475.81	1,950.91	1,333.21	1,239.96	1,401.95	2,109.66	1,497.88	1,351.79	1,150.62
Slovak Republic: SAX16	231.75	346.54	243.16	186.31	210.92	363.54	262.93	217.41	149.45
Slovenia: SBI20	1,825.95	1,719.15	1,890.07	2,847.81	1,813.89	1,741.98	1,784.35	2,513.95	3,220.32

Source: Thomson Datastream, Bloomberg.

[1]) EURO STOXX: December 31, 1986 = 100, S&P 500: December 30, 1964 = 100, Nikkei 225: March 31, 1950 = 100, ATX: January 2, 1973 = 100, PX50: April 6, 1994 = 100, BUX: January 2, 1991 = 100, WIG: April 16, 1991 = 100, SAX16: September 14, 1993 = 100, SBI20: January 3, 1994 = 100.

Table A7

Gross Domestic Product

Annual change, %, period average	1999 year	2000	2001	2002	1999 1st half	2000	2001	2002	2003
Euro area	2.8	3.5	1.5	0.9	2.1	3.8	2.0	0.7	0.5
U.S.A.	4.1	3.8	0.3	2.5	4.0	4.7	0.7	1.8	2.3
Japan	0.1	2.8	0.4	0.3	0.3	1.7	2.3	−1.6	3.0
Austria	2.7	3.5	0.7	1.0	1.9	4.1	1.3	0.7	0.8
Czech Republic	0.5	3.3	3.1	2.0	-0.6	3.2	3.5	2.3	2.3
Hungary	4.1	5.3	3.9	3.3	3.2	6.1	4.1	2.9	2.6
Poland	3.9	4.1	1.0	1.3	2.3	5.5	1.6	0.7	3.0
Slovak Republic	1.3	2.2	3.3	4.4	1.6	1.5	2.9	3.9	4.0
Slovenia	5.2	4.7	2.9	3.2	5.4	4.9	3.0	2.9	2.2

Source: Eurostat, WIIW.

Table A8

Current Account

% of GDP, cumulative	1999 year	2000	2001	2002	1999 1st half	2000	2001	2002	2003
Euro area	0.6	0.0	0.3	0.9	0.1	−0.9	−0.8	0.4	−0.1
U.S.A.	−3.0	−4.1	−3.8	−4.7	−2.8	−3.9	−4.1	−4.6	−5.4
Japan	2.6	2.5	2.1	2.8	2.6	2.6	1.9	3.0	2.9
Austria	−3.0	−2.6	−2.2	−0.4	−2.6	−2.5	−2.7	0.4	0.2
Czech Republic	−2.9	−5.6	−4.6	−6.5	−2.2	−4.1	−4.6	−5.3	−5.0
Hungary	−4.4	−2.8	−3.4	−4.0	−5.3	−3.5	−6.4	−3.6	−6.5
Poland	−7.5	−6.1	−2.9	−3.1	−6.9	−7.2	−4.0	−4.1	−3.0
Slovak Republic	−5.7	−3.6	−8.6	−8.2	−7.6	−1.6	−7.9	−7.9	−1.3
Slovenia	−3.5	−2.8	0.1	1.7	−5.7	−3.0	−0.3	1.4	−0.5

Source: Eurostat, OECD, WIIW.
Note: Owing to seasonal effects, comparability of semiannual with annual data is low.

Table A9

Inflation Rate

Annual change, %, period average	1999 year	2000	2001	2002	1999 1st half	2000	2001	2002	2003
Euro area	1.1	2.1	2.4	2.2	1.0	1.9	2.5	2.3	2.1
U.S.A.	2.2	3.4	2.8	1.6	2.0	3.2	3.4	1.3	2.5
Japan	−0.3	−0.7	−0.7	−0.9	−0.2	−0.7	−0.6	−1.2	−0.2
Austria	0.5	2.0	2.3	1.7	0.2	1.9	2.3	1.7	1.4
Czech Republic	2.1	3.9	4.7	1.8	2.7	3.7	4.6	3.0	−0.2
Hungary	10.0	9.8	9.2	5.3	9.3	9.5	10.4	5.9	4.3
Poland	7.3	10.1	5.5	1.9	6.3	10.1	6.7	2.8	0.5
Slovak Republic	10.5	12.2	7.1	3.4	6.9	15.7	7.1	3.9	7.8
Slovenia	6.2	8.9	8.4	7.5	5.0	8.9	9.1	7.8	6.0

Source: Eurostat, OECD, WIIW.

Financial Intermediaries in Austria

Table A10

Total Assets and Off-Balance-Sheet Operations[1])

End of period, EUR million	1999		2000		2001		2002		2003
	1st half	year	1st half	year	1st half	year	1st half	year	1st half
Total assets	502,445	524,635	562,059	562,700	567,250	587,741	587,611	573,347	591,440
thereof: total domestic assets	377,091	393,317	410,727	404,908	413,701	431,415	426,245	418,017	418,998
total external asstes	125,354	131,318	151,332	157,792	153,548	156,326	161,366	155,309	172,469
Interest rate contracts	412,708	487,663	653,884	611,150	677,098	946,631	1,022,741	1,144,052	2,204,383
Foreign exchange derivatives	150,122	165,290	179,366	160,650	164,435	157,512	202,939	240,261	298,305
Other derivatives	3,184	3,489	7,225	15,184	5,727	5,737	7,554	3,814	4,304
Derivatives total	566,013	656,442	840,474	786,984	847,259	1,109,880	1,233,235	1,388,127	2,506,993

Source: OeNB.

[1]) Data on off-balance-sheet operations refer to nominal values.

Table A11

Profitability

End of period, EUR million	1999 year	2000	2001	2002	1999 1st half	2000	2001	2002	2003
Interest receivable and similar income	22,381	27,508	26,814	23,426	11,103	13,233	14,245	11,858	10,695
Interest payable and similar charges	16,093	20,773	19,725	16,345	7,989	9,937	10,876	8,339	7,199
Net interest income	6,288	6,735	7,090	7,081	3,115	3,296	3,369	3,518	3,497
Income from debt securities and participating interests	1,357	1,817	1,959	1,771	609	813	781	828	815
Net fee-based income	2,730	3,203	3,062	3,012	1,291	1,579	1,568	1,514	1,553
Net profit/loss on financial operations	429	487	521	570	283	274	250	197	431
Other operating income	1,283	1,282	1,423	1,284	584	608	638	629	591
Operating income	12,087	13,523	14,054	13,717	5,883	6,571	6,606	6,685	6,887
Staff costs	4,399	4,479	4,681	4,780	2,152	2,190	2,294	2,380	2,437
Other administrative expenses	2,701	2,930	3,151	3,138	1,293	1,383	1,512	1,524	1,508
Other operating charges	818	940	974	851	394	404	419	425	386
Operating expenses	8,539	9,004	9,476	9,500	4,144	4,298	4,564	4,686	4,713
Operating profit/loss	3,548	4,520	4,577	4,218	1,738	2,272	2,043	2,000	2,173

Source: OeNB.

Table A12

Expected Annual Profit/Loss

End of period, EUR million	1999		2000		2001		2002		2003
	1st half	year	1st half	year	1st half	year	1st half	year	1st half
Expected profit/loss for the year	3,339	3,477	4,198	4,395	3,848	4,533	4,002	4,177	3,925
Expected profit/loss on ordinary activities	1,953	1,966	2,878	2,876	2,794	3,151	2,021	2,066	2,274
Expected profit/loss for the year after tax	1,587	1,652	2,206	2,324	2,252	2,688	1,514	1,439	1,773

Source: OeNB.

Table A13

Claims on Domestic Nonbanks

End of period, EUR million	1999		2000		2001		2002		2003
	1st half	year	1st half	year	1st half	year	1st half	year	1st half
Nonfinancial enterprises	111,690	119,613	121,077	128,104	129,489	131,593	130,519	129,091	128,476
Households	50,217	54,042	56,773	59,222	61,243	62,805	64,831	67,115	67,425
General government	29,843	28,014	29,122	28,727	28,798	28,275	28,724	28,333	27,501
Other financial intermediaries	11,474	10,451	11,099	10,459	11,108	11,893	12,309	12,771	12,908
Total	203,223	212,120	218,071	226,512	230,638	234,566	236,383	237,310	236,309

Source: OeNB.

Table A14

Foreign Currency-Denominated Claims on Domestic Nonbanks

End of period, EUR million	1999		2000		2001		2002		2003
	1st half	year	1st half	year	1st half	year	1st half	year	1st half
Nonfinancial enterprises	17,404	20,228	23,078	23,983	24,775	25,167	25,333	24,833	23,229
Households	6,987	9,767	11,803	12,611	13,801	14,555	15,625	16,766	16,761
General government	1,537	1,661	2,120	1,904	1,692	1,362	1,682	1,395	1,567
Other financial intermediaries	1,346	1,572	1,739	1,114	1,326	1,336	1,342	1,466	1,394
Total	27,275	33,228	38,740	39,613	41,594	42,420	43,983	44,459	42,951

Source: OeNB.

Table A15

Foreign Currency-Denominated Claims on Euro Area Non-MFIs

End of period, % of total claims on euro area non-MFIs[1])	1999		2000		2001		2002		2003
	1st half	year	1st half	year	1st half	year	1st half	year	1st half
Swiss franc	78.4	69.8	50.1	58.7	51.6	50.4	50.1	55.0	70.8
Japanese yen	12.8	22.3	42.0	33.9	40.4	41.9	42.0	37.2	21.7
U.S. dollar	7.5	6.3	7.4	6.0	7.0	7.1	7.4	6.8	6.6
Other foreign currencies	1.4	1.6	0.5	1.4	1.0	0.6	0.5	1.0	0.9

Source: OeNB, ECB.

[1]) The indicated figures refer to claims of monetary financial institutions (MFIs, ESA definition) against euro area 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. Figures do not add up to 100.0% for every year due to rounding errors.

Table A16

Specific Loan Loss Provisions for Claims on Nonbanks

End of period, % of claims	1999		2000		2001		2002		2003
	1st half	year	1st half	year	1st half	year	1st half	year	1st half
Specific loan loss provisions	3.4	3.0	3.1	2.9	3.2	3.1	3.4	3.3	3.5

Source: OeNB.

Table A17

Market Risk[1])

End of period, EUR million	1999		2000		2001		2002		2003
	1st half	year	1st half	year	1st half	year	1st half	year	1st half
Interest rate risk Capital requirement for the position risk of interest rate instruments in the trading book	601.7	680.2	871.3	853.3	587.8	394.1	427.2	415.3	420.6
Exchange rate risk Capital requirement for open foreign exchange positions	82.0	126.7	108.3	71.4	96.9	64.0	70.3	80.4	81.8
Equity price risk Capital requirement for the position risk of equities in the trading book	110.4	71.1	57.3	60.4	43.8	28.5	33.6	20.5	25.4

Source: OeNB.

[1]) 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.

Table A18

Liquidity Risk

End of period, %	1999		2000		2001		2002		2003
	1st half	year	1st half	year	1st half	year	1st half	year	1st half
Liquidity of the first degree: 5% quantile of liquidity ratio[1])	17.5	8.8	20.3	6.1	12.4	5.9	11.5	6.1	7.1
Liquidity of the second degree: 5% quantile of liquidity ratio	30.3	27.8	29.0	26.3	26.4	27.3	27.3	26.1	28.2

Source: OeNB.

[1]) 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 liquidity of the first degree (cash ratio) and of 20% for liquidity of the second degree (current ratio). The 5% quantile indicates the liquidity level surpassed by 95% of banks on the respective reporting date and is thus an indicator of poor liquidity.

Table A19

Solvency

	1999		2000		2001		2002		2003
	1st half	year	1st half	year	1st half	year	1st half	year	1st half
End of period, EUR million									
Total tier 1 capital (core capital)	23,438	23,790	24,606	24,652	26,930	27,440	28,368	26,841	28,178
Total tier 2 capital (supplementary capital)	10,278	10,769	11,827	12,659	13,512	13,492	14,159	13,486	14,171
Tier 3 capital[1])	×	×	×	1,575	1,251	2,413	2,197	2,324	771
Eligible capital as a percentage of risk-weighted assets									
Capital adequacy ratio[2])	13.2	13.1	12.9	13.3	14.0	13.7	14.2	13.3	13.9

Source: OeNB.

[1]) Because of amendments in the applicable law, data are available only as of 2000.

[2]) In this context, the capital adequacy ratio refers to the capital eligible as credit risk cover under the Austrian Banking Act (i.e. tier 1 capital plus tier 2 capital minus deduction items) as a percentage of the assessment base. As tier 3 capital is subordinated capital that may only be allocated against market risk, it was not included here so as to produce a conservative capital adequacy assessment.

Table A20

Assets Held by Austrian Insurance Companies[1])

End of period, EUR million	1999		2000		2001		2002		2003
	1st half	year	1st half	year	1st half	year	1st half	year	1st half
Cash, overnight deposits	605	539	464	719	531	757	764	681	1,246
Other deposits at Austrian banks	385	306	308	332	483	1,425	678	947	2,371
Domestic debt securities	9,042	8,627	8,647	8,245	7,840	7,712	7,600	7,736	8,488
Equity securities and other domestic securities	9,414	10,269	11,206	11,847	12,599	13,127	14,616	15,043	14,648
Lending	12,852	11,973	11,405	11,147	10,455	8,769	8,518	8,055	7,441
Domestic equity interests	1,738	2,017	2,032	2,257	2,293	2,511	2,784	3,308	3,550
Real estate	3,380	3,394	3,404	3,428	3,443	3,494	3,804	3,553	3,526
External assets	7,000	9,044	10,669	11,248	13,074	14,397	14,959	15,709	1,597
Custody account claims on reinsurers	. .	1,728	. .	1,805	. .	1,854	. .	2,042	. .
Other assets	2,422	2,970	3,058	3,105	3,085	3,426	3,310	3,329	3,734
Total assets	. .	50,867	. .	54,134	. .	57,471	. .	60,403	. .

Source: OeNB.

[1]) *Semiannual data exclusive of reinsurance transactions.*

Table A21

Assets in Austrian Mutual Funds

End of period, EUR million	1999		2000		2001		2002		2003
	1st half	year	1st half	year	1st half	year	1st half	year	1st half
Domestic securities	32,455	33,580	34,787	34,908	35,154	36,068	36,471	35,952	34,653
thereof: Federal Treasury bills and notes	1,161	589	252	424	25	27	28	28	. .
debt securities	26,670	26,470	25,843	24,302	23,828	23,235	22,975	22,519	20,743
equity securities	4,624	6,521	8,692	10,182	11,301	12,806	13,468	13,405	13,910
Foreign securities	33,288	41,287	49,621	51,210	56,697	57,324	60,701	60,712	66,706
thereof: debt securities	21,486	25,154	28,676	30,336	32,944	34,717	40,498	43,200	48,531
equity securities	11,802	16,133	20,945	20,874	23,753	22,607	20,203	17,513	18,175
Other assets	6,196	5,474	6,055	5,856	4,936	5,341	5,018	6,047	5,774
Total assets	71,940	80,341	90,462	91,973	96,787	98,733	102,190	102,712	107,133
thereof: foreign currency	16,283	19,169	22,402	22,415	24,789	24,346	24,157	22,455	22,376

Source: OeNB.

Table A22

Assets Held by Austrian Pension Funds

End of period, EUR million	1999		2000		2001		2002		2003
	1st half	year	1st half	year	1st half	year	1st half	year	1st half
Domestic securities	4,761	5,911	6,879	7,070	7,171	7,245	7,128	7,200	7,744
thereof: Federal Treasury bills and notes	1	25	–	–	–	–	–	–	–
debt securities	100	12	26	31	35	63	67	57	56
mutual fund shares	4,657	5,865	6,846	7,030	7,127	7,163	7,032	7,125	7,641
other securities	4	8	7	9	9	19	30	18	47
Foreign securities	401	464	550	523	586	534	401	353	425
thereof: debt securities	48	32	40	41	40	49	44	44	47
mutual fund shares	347	426	505	478	526	451	315	279	350
other securities	6	5	4	4	20	34	43	30	29
Deposits	31	103	43	95	92	164	118	171	164
Lending	79	69	69	71	69	39	32	42	67
Other assets	164	594	95	89	68	67	121	110	161
Total assets	5,435	7,141	7,636	7,848	7,986	8,049	7,800	7,876	8,562
thereof: foreign currency	281	342	404	302	339	303	188	195	233

Source: OeNB.

The Real Economy and Financial Markets in Austria

Table A23

Financial Investment of Households

Transactions, EUR million	1999 year	2000	2001	2002	1999 1st half	2000	2001	2002	2003[1])
Currency and deposits[2])	5,108	2,328	4,018	7,072	×	1,777	2,108	2,804	4,093
Securities other than shares[3])	−1,595	1,829	−327	1,115	×	890	−95	1,010	−452
Shares other than mutual fund shares	1,440	1,672	1,047	587	×	944	144	299	243
Mutual fund shares	4,523	4,000	3,298	595	×	2,257	2,348	−120	278
Insurance technical reserves	5,916	4,186	3,512	3,118	×	2,288	1,985	1,576	2,306
Total financial assets	15,391	14,016	11,547	12,487	×	8,156	6,489	5,569	6,468

Source: OeNB.
[1]) Preliminary data.
[2]) Including loans and other accounts receivable,
[3]) Including financial derivatives.

Table A24

Household Income, Savings and Credit Demand

	1999 year	2000	2001	2002
Year-end, EUR billion				
Net disposable income[1])	122.03	127.65	130.74	131.92
Savings[1])	10.35	10.66	9.69	9.76
%				
Saving ratio[1])[2])	8.5	8.3	7.4	7.4
EUR billion				
Loans to Households	54.04	59.22	62.81	67.12

Source: Statistics Austria; national accounts broken down by sectors; data last revised December 2002.
[1]) Only annual data available. 2002 WIFO Economic Outlook published in September 2003.
[2]) Saving ratio: savings / (disposable income + increase in accrued occupational pension benefits).

Table A25

Financing of Nonfinancial Corporations

Transactions, EUR million	1999 year	2000	2001	2002	1999 1st half	2000	2001	2002	2003[1])
Securities other than shares	2,328	2,116	600	−235	×	×	×	−41	−206
Loans[2])	14,082	18,033	11,339	6,866	×	×	×	3,294	1,345
Shares and other equity	3,245	4,361	8,960	3,072	×	×	×	963	2,351
Other accounts payable	1,911	−2,544	−183	268	×	×	×	×	×
Total debt	21,566	21,966	20,716	9,971	×	×	×	4,216	3,489

Source: OeNB.
[1]) Preliminary data.
[2]) Semiannual data include other accounts payable.

Table A26

Insolvency Indicators

	1999		2000		2001		2002		2003[1])
	1st half	year	1st half	year	1st half	year	1st half	year	1st half
End of period, EUR million									
Default liabilities	1,700	2,798	1,185	2,674	2,070	3,503	1,652	3,401	1,258
Number									
Number of defaults	1,444	2,790	1,310	2,567	1,458	2,939	1,423	2,864	1,415

Source: Kreditschutzverband von 1870.
[1]) Preliminary data.

Table A27

Selected Financial Ratios of the Manufacturing Sector

Median, %	1999 year	2000	2001	2002
Self-financing and investment ratios				
Cash flow, as a percentage of turnover	7.73	7.66	7.05	6.74
Cash flow, as a percentage of investment	196.87	184.25	166.67	166.67
Reinvestment ratio[1])	60.29	67.42	75.42	84.21
Financial structure ratios				
Equity ratio	10.27	10.44	11.14	17.39
Risk-weighted capital ratio	15.28	15.21	16.07	23.66
Bank liability ratio	46.86	46.96	47.56	39.99
Government debt ratio	10.00	10.65	9.68	9.11

Source: OeNB.
[1]) Investment x 100 / credit write-offs.

Legend, Abbreviations

Conventions used in the tables

– = The numerical value is zero
. . = Data not available at the reporting date
× = For technical reasons no data can be indicated
0 = A quantity which is smaller than half of the unit indicated
∅ = Mean value
_ = New series

Discrepancies may arise from rounding.

Abbreviations

ABS	asset-backed securities
ALM	asset liability management
AMAs	Advanced Measurement Approaches
ART	alternative risk transfer
ATX	Austrian Traded Index
BCBS	Basel Committee on Banking Supervision
BCR	Banca Comercială Română
BIA	Basic Indicator Approach
BIS	Bank for International Settlements
BKS	Bank für Kärnten und Steiermark AG
BNR	Banca Națională a României
BSpG	Bausparkassengesetz (Act on Building and Loan Associations)
BTV	Bank für Tirol und Vorarlberg AG
CAT bonds	catastrophe bonds
CEE	Central and Eastern European
CEECs	Central and Eastern European countries
CPI	consumer price index
EAD	exposure at default
ECB	European Central Bank
EEA	European Economic Area
EMBI	Emerging Market Bond Index
EONIA	Euro OverNight Index Average
EU	European Union
FDI	foreign direct investment
Fed	Federal Reserve System
FMA	Financial Market Authority
FOMC	Federal Open Market Committee
FSAP	Financial Sector Assessment Program
GDP	gross domestic product
HICP	Harmonized Index of Consumer Prices
IAA	International Actuarial Association
IAIS	International Association of Insurance Supervisors
IAS	International Accounting Standards
IMA	Internal Measurement Approach
IMF	International Monetary Fund
IRB	internal ratings-based
LDA	Loss Distribution Approach
LGD	loss given default
MCA	maximum credible accident
MFIs	monetary financial institutions
OECD	Organisation for Economic Co-operation and Development
OeKB	Oesterreichische Kontrollbank
OeNB	Oesterreichische Nationalbank
OpR	operational risk
OTC deal	over-the-counter deal
PCS	property claims service
QIS 3	Quantitative Impact Study 3
ROA	return on assets
ROE	return on equity
RRG	risk retention group
RWAs	risk-weighted assets
SCA	Scorecard Approaches
SMEs	small and medium-sized enterprises
SPVs	special purpose vehicles
STA	Standardized Approach
VaR	value at risk
VAT	value-added tax
VÖB	Bundesverband öffentlicher Banken Deutschlands (Association of German Public Sector Banks)
WIFO	Österreichisches Institut für Wirtschaftsforschung (Austrian Institute of Economic Research)