



OESTERREICHISCHE NATIONALBANK
EUROSYSTEM

FINANCIAL STABILITY REPORT 29



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

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Editorial close: June 15, 2015

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

Call for applications: Visiting Research Program

The Oesterreichische Nationalbank (OeNB) invites applications from external researchers for participation in a Visiting Research Program established by the OeNB's Economic Analysis and Research Department. The purpose of this program is to enhance cooperation with members of academic and research institutions (preferably postdoc) who work in the fields of macroeconomics, international economics or financial economics and/or pursue a regional focus on Central, Eastern and South-eastern Europe.

The OeNB offers a stimulating and professional research environment in close proximity to the policymaking process. Visiting researchers are expected to collaborate with the OeNB's research staff on a prespecified topic and to participate actively in the department's internal seminars and other research activities. They will be provided with accommodation on demand and will, as a rule, have access

to the department's computer resources. Their research output may be published in one of the department's publication outlets or as an OeNB Working Paper. Research visits should ideally last between three and six months, but timing is flexible.

Applications (in English) should include

- a curriculum vitae,
- a research proposal that motivates and clearly describes the envisaged research project,
- an indication of the period envisaged for the research visit, and
- information on previous scientific work.

Applications for 2016 should be e-mailed to

eva.gehringer-wasserbauer@oenb.at
by November 1, 2015.

Applicants will be notified of the jury's decision by mid-December. The following round of applications will close on May 1, 2016.

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

Reports

The reports were prepared jointly by the Foreign Research Division, the Economic Analysis Division as well as the Financial Stability and Macroprudential Supervision Division together with the Supervision Policy, Regulation and Strategy Division and the Off-Site Supervision Division – Less Significant Institutions, with contributions by Nicolás Albacete, Andreas Breitenfellner, Judith Eidenberger, Andreas Greiner, Stefan Kavan, David Liebeg, Florian Martin, Georg Merc, Benedict Schimka, Stefan Schmitz, Josef Schreiner, Eva Ubl, Walter Waschiczek, Daniela Widhalm and Tina Wittenberger.

Management summary

Declining yields in early 2015 amid modest global recovery

Global economic dynamics weakened in the first half of 2015 as a result of slower growth in the U.S.A. as well as a continued economic slowdown in emerging economies, where financial outflows brought sustainability issues to the fore. Despite geopolitical tensions, the euro area economy emerged from recession in 2014. It gained further momentum in the first months of 2015 as the monetary policy measures adopted by the Governing Council of the ECB – including an asset purchase program and the supply of further long-term liquidity to the banking sector – as well as low energy prices and a relatively low exchange rate provided further stimulus.

Given the accommodative stance of monetary policy and a subdued inflation outlook, the yields on euro area government bonds continued to decline in the first months of 2015. The significant yield decline benefited all economies of the euro area (with the exception of Greece) as a search for yield in an environment of low interest rates caused risk premiums to contract. However, volatility in bond markets, stock exchanges, foreign exchange rates and commodity prices has intensified since then. Whether this reflects temporary corrections or more fundamental changes in line with macroeconomic developments is an issue that will shape the future financial risk environment.

The economic recovery in many countries of Central, Eastern and Southeastern Europe (CESEE) continued in the second half of 2014, and financial market developments were broadly favorable, especially in the EU Member States of the region, reflecting a comparatively sound macrofinancial environment and favorable global li-

quidity conditions. However, more volatility was observed in Bulgaria and Turkey, while turbulences in Russia and Ukraine persisted. Credit market developments in CESEE were also broadly favorable, especially in Hungary, Poland, the Czech Republic and Slovakia, and a further deceleration of credit growth in Russia and Ukraine was noticeable. Credit growth in CESEE is increasingly being financed by domestic deposits, and the share of foreign currency-denominated loans in total loans has decreased further. Nonperforming loan ratios have remained broadly stable or decreased somewhat. Banking sector profitability, however, continues to be weak and has even deteriorated in several countries against the background of increasing provisions and write-offs. On the plus side, banking sectors throughout most of the region continue to be well capitalized.

Growth of credit to the Austrian nonfinancial sector still low

In Austria, economic growth remained weak in 2014 and the first quarter of 2015. Reflecting this subdued economic environment, the gross operating surplus of nonfinancial corporations fell slightly in 2014 in real terms, while low interest rates continued to support corporate profitability.

Loans by Austrian banks to domestic nonfinancial corporations grew at a modest pace, reflecting both supply- and demand-side factors. On the one hand, banks continued their cautious lending policies, while on the other hand, loan demand by enterprises remained low in the currently weak cyclical environment. Bond issuance, which had been a major source of external finance for the corporate sector in the past years, was negative in 2014 in net terms. Bank lending to house-

holds, which was driven primarily by housing loans, was also subdued. Residential property price growth moderated considerably in the course of 2014. According to the OeNB fundamentals indicator for residential property prices, prices were justified by fundamentals in the fourth quarter of 2014.

Modest debt growth and low interest rates eased the interest burden for firms and households, reinforced by a very high share of variable rate loans in total domestic lending. While the latter undoubtedly advanced the pass-through of the ECB's lower key interest rates, it implies considerable interest rate risks for debtors. The still significant share of foreign currency loans in total lending also remains a risk factor, especially for Austrian households, despite a noticeable decrease in the past years as a consequence of stepped-up supervisory efforts. However, the appreciation of the Swiss franc as of mid-January 2015 has increased both the outstanding volume and the funding gap (between the repayment vehicles' expected final value and the amount outstanding at loan maturity). In April 2015, this gap amounted to EUR 6 billion. Another source of risk is the repayment vehicles' future performance, as valuations might erode when financial markets turn, thereby further widening the funding gap. Although the majority of foreign currency bullet loans will mature after 2019, hoping for exchange rates or asset valuation to turn for the better is a risky strategy.

New macroprudential measures will improve systemic resilience of Austrian banking sector

On June 1, 2015, Austria's macroprudential policy body, the Financial Market Stability Board (FMSB), recommended that the Austrian Financial

Market Authority (FMA) activate the systemic risk buffer (SRB) and the buffer for other systemically important institutions (O-SII) for selected banks. These macroprudential measures had been previously recommended by the OeNB as they will improve the financial stability of the Austrian banking system by addressing structural and systemic risks.

In 2014, the consolidated profit of the Austrian banking sector was back in positive territory and the overdue consolidation has now started in earnest. However, these positive developments were driven by the restructuring of Hypo Alpe-Adria-Bank International AG (HAA) and the outlook for banks' profitability remains under pressure also due to geopolitical developments.

Austrian banks' consolidated operating profit improved, as banks were able to increase their net interest income, but the low interest rate environment may compromise this trend over the medium term. Loan loss provisions remained at elevated levels in 2014, although they decreased compared to 2013. Also, the increase in Austrian banks' capital levels that had been observed over the past years came to a halt in 2014: The three largest Austrian banks even faced a reduction in their capital ratios and continue to lag behind their peer groups.

Subsidiaries in CESEE continued to make a positive contribution to the Austrian banking sector's consolidated profit, but total earnings plummeted to a historic low in 2014, and – similar to past years – profits were concentrated in just a few countries. In general, the outlook for Austrian banks' profitability in CESEE remains weak due to ongoing political and geopolitical uncertainties as well as the protracted resolution of legacy issues, i.e. nonperforming loans, in some countries.

Recommendations by the OeNB

To strengthen financial stability in Austria, the OeNB recommends that the following measures be taken:

- Banks should continue to strive for capital levels that are commensurate with their risk exposures. Systemic risks caused by a bank's size, interconnectedness and emerging market exposure should be addressed by means of the systemic risk buffer (SRB) and the buffer for other systemically important institutions (O-SII) as proposed by the FMSB.
- The still difficult profitability situation requires active cost management and risk-adequate pricing.
- The close monitoring of risks related to foreign currency loans and loans with repayment vehicles remains important. Against the background of increased funding gaps and risks regarding repayment vehicle values, banks and customers should assess the latter's risk-bearing capacity and take risk-reducing measures if deemed necessary.
- As to CESEE subsidiaries, the resolution of nonperforming assets is crucial and on-going initiatives to deal with legacy issues should be proactively pursued. Banks should also continue to strive for sustainable loan-to-local stable funding ratios at the subsidiary level and for risk-adequate pricing of intragroup liquidity transfers.
- The effects of the ultra-low interest rate environment are still difficult to assess, but banks and insurance companies may need to adapt their business models to this challenging environment.
- Insurance undertakings should continue to prepare for Solvency II.

International macroeconomic environment: modest global recovery amid resurging market volatilities

U.S. and euro area economies recover at different paces

Global economic dynamics lost momentum in the review period from November to May 2015 and the global economy is expected to expand less than anticipated in 2015. Disappointing economic performance in the U.S.A. contrasted with favorable developments in Europe, while growth in emerging economies continued its slowdown, with financial outflows bringing sustainability issues to the fore. Subdued data on U.S. economic activity created uncertainty about the pace of monetary policy normalization in the U.S.A. In the euro area, the asset purchase program of the Eurosystem, generally low energy prices and a relatively low exchange rate have contributed to positive surprises in terms of growth since the beginning of the year. Given the accommodative stance of monetary policy and a still subdued inflation outlook, the yields on euro area government bonds continued to decline in the first months of 2015, benefiting both core and stressed economies in the euro area. More recently, volatility in bond markets, stock exchanges, foreign exchange rates and commodity prices has intensified. Whether the abrupt reversal of compressed global risk premia observed since May reflects merely temporary corrections amplified by low market liquidity or more fundamental drivers such as global growth rebalancing is an issue that will shape the future financial risk environment.

In the U.S.A., economic activity disappointed due to temporary factors in the first quarter of 2015 resulting in a quarter-on-quarter decline of 0.2%, after growth had already slowed down

in the previous quarter. GDP has been dampened by private consumption, investment and negative net exports. Nevertheless, labor markets continue to improve as vivid job creation has reduced unemployment to 5.4%, albeit at historically low participation rates. Low productivity growth implies, however, that much of the employment creation has been taking place in low wage sectors. Fiscal policy no longer represents a significant drag on economic growth and monetary policy has remained accommodative. The Federal Reserve is preparing the public for a raise in the federal funds rate “at some point” this year conditional on continued improvement in labor markets and reasonable confidence that inflation will move back to 2% over the medium term. Consumer price inflation has hovered around 0% since the beginning of 2015 but has been showing a modest upward tendency more recently. Even if one excludes the volatile components food and energy, inflation remains below the Fed’s objective.

In Japan, GDP growth surprised on the positive side by doubling to 0.6% (quarter on quarter) in the first quarter of 2015, surmounting a short but deep recession in 2014 that had followed a hike of consumption tax. Apart from a stable contribution of private consumption, the main boost to the economy came from a rebound of inventories. Given Japan’s improving current account balance, net exports are likely to become a growth driver again. The Japanese economy is expected to continue recovering moderately. So far, neither the growth dynamics nor higher pay settlements have helped to raise wage growth substantially, despite the fact

Economic growth below expectations in the U.S.A. and emerging markets but stronger than expected in Japan

that the unemployment rate fell to 3.4%, the lowest level seen for almost 18 years. Inflation decreased to below 1% in April 2015 with consumption tax-adjusted inflation plummeting to -1.7%. Longer-term inflation expectations appear to be declining marginally. Since October 2014, the Bank of Japan has been expanding its expansive monetary policy measures, referred to as quantitative and qualitative monetary easing (QQE), with the aim of “converting people’s deflationary mindset.” Long-term growth is viewed to depend on structural reforms – the third arrow of the Japanese prime minister’s “Abenomics.”

China’s economic growth continues to decelerate, with GDP expanding at an annual rate of 7% in the first quarter of 2015, due to contracting investment in construction, which was partly compensated by external demand. Inflation stayed constant at 1.5% – half the value targeted by the People’s Bank of China, which reduced its key interest rate by 25 basis points and extended the collateral pool for monetary policy operations in May 2015 against the background of sinking industrial producer prices.

On January 15, 2015, the Swiss National Bank (SNB) discontinued its currency ceiling, set at CHF 1.20 to the euro, which it had maintained for four years. The Swiss franc appreciated immediately and has since floated below parity with the euro.

Euro area recovery picks up speed in low-inflation environment

The recovery of the euro area economy has gathered pace: GDP grew by 0.4% (quarter on quarter) in the first quarter of 2015 – 0.1 percentage points faster than in the preceding quarter. Among the larger euro area economies, Spain and France performed best, with growth

rates of 0.9% and 0.6%, respectively; both Germany and Italy reached 0.3%, signifying a slowdown for the former and improvement for the latter. Euro area inflation entered negative territory in late 2014 but has gradually emerged from it since then. The recent volatility has mainly been driven by energy and food prices, while core inflation has gradually decreased to 0.6% given the output gap stemming from the last double-dip recession. In early 2015, inflation was below 1% in almost every country of the euro area; Spain and Greece continued to experience deflation even. Euro area-wide inflation expectations reached a low in January 2015, but have improved since then. The unemployment rate has continued to decline slowly but steadily, reaching 11.3% in the first quarter. Employment creation weakened at the end of 2014 but is expected to accelerate during 2015.

Following contractionary tendencies in previous years, the fiscal stance turned neutral in 2014, while monetary policy became even more accommodative. The Eurosystem’s conventional policies remained unchanged, with the key interest rates at record low levels (negative deposit facility rate). Additionally, the ECB’s Governing Council decided to expand its asset purchase program by adding purchases of public sector securities to the existing private sector asset purchases in order to address the risks of a too prolonged period of low inflation. Monthly purchases of public and private sector securities amount to EUR 60 billion under the new expanded asset purchase program. They are intended to be carried out until the end of September 2016 and in any case until the Governing Council sees a sustained adjustment in the path of inflation that is consistent with its aim of achieving inflation rates

ECB implements further nonstandard monetary policy measures

below, but close to, 2% over the medium term. In order to boost lending to SMEs, the Eurosystem continued its targeted longer-term refinancing operations (TLTROs). In the review period, the euro exchange rate continued to depreciate gradually in line with the increasingly expansionary monetary policy stance and low inflation expectations, losing more than 13% against the U.S. dollar and above 8% in nominal effective terms against a basket of 21 currencies. In mid-May 2015, the euro showed signs of strengthening in view of uncertainties about the Fed's path of monetary normalization, but then fell back to below USD 1.1/EUR.

In the review period, the representative stock index DJ Euro Stoxx rose by around 19%, more than twice the increase of the comparable U.S. Dow Jones Industrials. More recently, European stock markets have become more volatile as the DJ Euro Stoxx fell from its peak in mid-April 2015 but recovered thereafter. Given the accommodative stance of monetary policy and a subdued inflation outlook, the yields on euro area government bonds continued to decline in the first months of 2015. Yields of German ten-year government bonds fell temporarily to record lows of 0.08% at the end of April. The significant yield decline also benefited euro area economies under stress (with the exception of Greece) as a search for yield in a low-interest environment caused risk premiums to contract. Spanish ten-year government bonds, for instance, had fallen by almost 100 basis points to 1.14% by March 2015 but rebounded as negotiations between the newly elected Greek government and its creditors proved more challenging and drawn out than anticipated. Greek benchmark bond yields peaked at 13.6% at the end of April but have softened since then. Vol-

atility also reemerged in global energy markets. Brent crude oil prices, for instance, fell from almost USD 85 per barrel in early November 2014 to above USD 45 in mid-January 2015 and then gradually increased to around USD 68 in early May before moderating once again.

CESEE: banking sector profitability weakens in an otherwise broadly stable macrofinancial environment

The economic recovery that had set in in mid-2013 in many countries of Central, Eastern and Southeastern Europe (CESEE) continued in the second half of 2014. It did not really gain speed, however. This is partly due to the ongoing weaknesses in the euro area during this period and the consequent lack of substantial trade impulses from the CESEE region's number one trading partner. Economic and political uncertainties also weighed on the region's economic performance. This is especially true for Russia, where growth basically stagnated, and Ukraine, which went into a deep recession. However, preliminary figures for the first quarter of 2015 are promising, with growth accelerating especially in the Czech Republic, Poland and Romania.

Financial markets developed broadly favorable, especially in the CESEE EU Member States, reflecting a comparatively sound macrofinancial environment and favorable global liquidity conditions. However, some more volatility was observed in Bulgaria and Turkey, and turbulences in Russia and Ukraine persisted.

In Bulgaria, the risk assessment deteriorated in late 2014 in the context of ongoing problems related to Corporate Commercial Bank (CCB). In November 2014, the Bulgarian National Bank revoked CCB's banking license. In order to pay back guaranteed deposits,

Economic recovery continues in many CESEE countries amid broadly stable macrofinancial conditions

the center-right government that had been brought to power in early elections in October 2014 had to extend a loan to the Bulgarian bank deposit guarantee fund, which was not sufficiently equipped to pay out all insured CCB deposits. This step helped to calm the situation and CDS premiums have embarked on a downward trend since. The spillovers of CCB's problems to the rest of the Bulgarian banking sector have been contained. Also, the country's currency board arrangement has not come under pressure as the abundant coverage of base money by gross foreign reserves has remained unchanged.

The Turkish lira has depreciated notably against the U.S. dollar and weakened by more than 14% since the beginning of the year. In early June 2015, the currency reached a historic low against the U.S. dollar. The depreciation against the euro was more moderate but still amounted to some 7%. In early March 2015, the Central Bank of the Republic of Turkey (CBRT) attempted to counter the depreciation pressure by changes to foreign currency (FX) auctions and FX borrowing facilities for banks, after having cut the benchmark interest rate by 75 basis points in two steps in January and February 2015 to 7.5%. The two consecutive rate reductions followed pressure from the government which threatened the CBRT's independence and which persisted until the CBRT Governor and the President of the Republic jointly confirmed the benefits of the monetary policy focus on price stability and the risk of loose monetary policy for the currency on March 12, 2015.

The military conflict in Eastern Ukraine hit the Ukrainian economy¹

through various channels. Risk indicators deteriorated markedly, massive capital outflows led to a drop in FX reserves and the depreciation of the hryvnia continued. The currency even reached new lows against the euro and the U.S. dollar in February 2015. The exchange rate pass-through, together with rising administered prices, drove inflation up to 58.4% year on year in May 2015. Supported by the depreciation and despite production losses in the heavily industrialized east and trade disruptions with Russia, Ukraine's current account deficit decreased to 4% of GDP in 2014 as imports declined faster than exports.

Some stabilization on the FX market could be achieved in March 2015, following a ceasefire agreement, the introduction of further capital controls, a key policy rate hike to 30% and the announcement of an Extended Fund Facility (EFF) with the IMF amounting to USD 17.5 billion. The EFF forms part of an international support package (IMF, EU, international financial institutions and bilateral aid from several countries) set up to cover a large part of Ukraine's USD 40 billion funding needs over the next four years. Financial support is connected to a comprehensive reform agenda, on which the Ukrainian authorities have already started to deliver. External debt restructuring is expected to yield a financing contribution of USD 15 billion and to restore Ukraine's debt sustainability. Discussions with sovereign and quasi-sovereign eurobond holders were initiated in March. After the disbursement of the first USD 5 billion IMF tranche, FX reserves almost doubled to about USD 10 billion in March.

Further international financial support for Ukraine

¹ For in-depth information on the macroeconomic environment and banking sector developments in Ukraine see: Barisitz, S. and Z. Fungáčová. 2015. *Ukraine: struggling banking sector amid substantial uncertainty*. In: OeNB. *Financial Stability Report* 29.

The development of the Russian ruble was marked by substantial ups and downs in the review period. Against the background of the oil price decline and of strong capital outflows in the course of 2014, the currency's external value declined especially in late 2014. The Bank of Russia (CBR) announced its official move to inflation targeting and declared that from November 10, 2014, it would no longer intervene to support the currency unless financial stability was in danger. This announcement was flanked by two increases of the key interest rate in the fall of 2014 by a total of 250 basis points to 10.5%. Still, in the wake of the acceleration of the oil price decline in early December 2014, the CBR stepped up FX interventions to support the ruble and, when the plunge of the ruble intensified in mid-December, sharply increased the key interest rate to 17%.

The recovery of the oil price in early 2015 as well as the substantial interest rate hike have supported the ruble and reined in market tensions. In

February, March, April and June, the CBR lowered the key rate by a cumulative 550 basis points to 11.5% in order to account for the “shift in the balance of risks” toward the “cooling economy.” The ruble has appreciated substantially since then, also due to carry trades by Russian banks.

Increased uncertainty due to the oil price decline and the sanctions is largely responsible for record-high capital outflows: Private net capital outflows reached USD 154 billion in 2014 (of which almost half occurred in the fourth quarter) and USD 32.6 billion in the first quarter of 2015. Due to repeated sizable interventions in the six months following late September 2014, the country's international reserves had shrunk by about one-fifth to USD 357 billion by May 2015.

Domestic credit growth developed broadly favorably in roughly half the CESEE countries under observation. In the Czech Republic, it hovered around 4% year on year in the first months of 2015; in Slovakia and Poland, it was

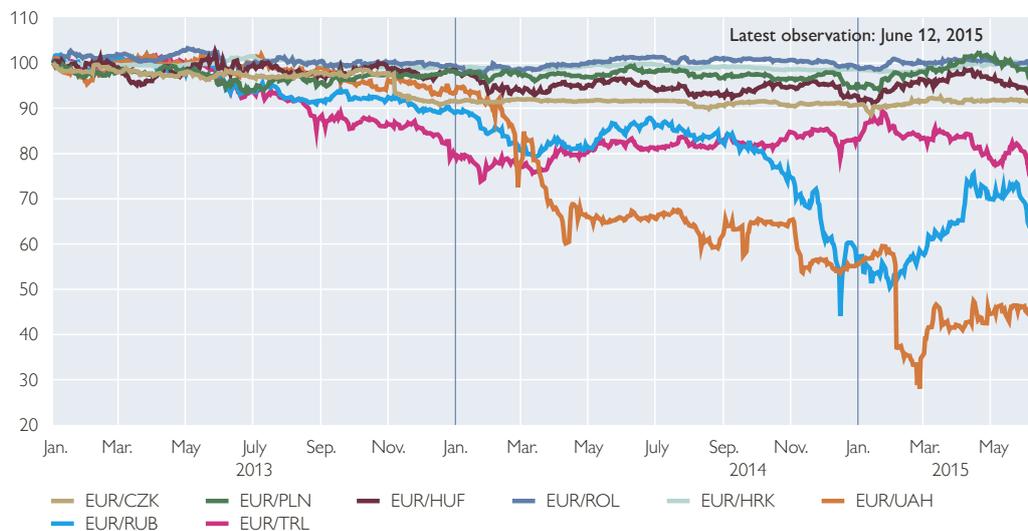
Russian ruble very volatile

Heterogeneous credit developments in CESEE

Chart 1

Exchange rates of selected currencies against the euro

January 1, 2013 = 100; rise = appreciation



Source: Thomson Reuters.

even somewhat higher at 6%. In Croatia and Slovenia, the credit stock continued to decline, however less so than previously. In Slovenia, the restructuring of the banking sector continued: In December 2014, the European Commission approved the restructuring plan for Banka Celje and its merger with the previously rescued Abanka, which was followed by a recapitalization and the transfer of bad assets to a bank asset management company. Also, the privatization of Nova KBM has progressed and the sale is expected to be finalized in the second quarter of 2015.

The most important change in credit dynamics was observed in Hungary. The exchange rate-adjusted credit stock in the country began to expand again for the first time since mid-2009. While part of this development is due to statistical reasons related to the mandated conversion of foreign currency consumer mortgage loans into forint loans at the prevailing market exchange rate of early November 2014, credit developments were also supported by the Hungarian central bank's (MNB) Funding for Growth Scheme (FGS). The scheme was expanded and extended in autumn 2014 and is now scheduled to run out at mid-2016. In addition, in mid-March 2015 the MNB launched an additional FGS+ scheme with similar conditions, but also temporarily assumed part of the credit losses from banks to enable the participation of less creditworthy SMEs. So far almost 22,000 enterprises have participated in the schemes, drawing funds of almost HUF 1,400 billion (some EUR 4.5 billion). In order to safeguard financial stability once the credit cycle turns, the central bank introduced new payment-to-income and loan-to-value ratios with effect from the beginning of 2015 (penalizing foreign currency loans).

Deteriorating credit dynamics were reported for Russia and Ukraine against the background of an increasingly fragile general economic environment and substantial policy rate hikes. Credit growth also decelerated somewhat in Turkey in late 2014 promoted by several macroprudential measures by the Turkish central bank to put a brake on swift credit expansion. The first months of 2015, however, again brought some reacceleration of credit growth, bringing credit expansion further away from the central banks' target.

The most substantial deterioration was reported for Bulgaria. This development, however, was largely related to statistical reasons. As already mentioned, the Bulgarian National Bank revoked Corporate Commercial Bank's banking license. With this move, loans previously granted by the bank (amounting to some BGN 5.3 billion) were no longer included in the official monetary statistics.

Lending surveys paint a heterogeneous picture of the CESEE region: The bank lending conditions index for Emerging Europe as compiled by the Institute of International Finance tightened in the first quarter of 2015, after having eased for three consecutive quarters in 2014. At 49.6, the index stood slightly below the threshold of 50 which indicates easing lending conditions. This development was driven by a plunge in loan demand, after banks had reported (at times substantially) rising demand throughout most of 2014. In particular demand for corporate and housing loans nose-dived. On the positive side, funding conditions improved slightly, driven by a further easing in international funding conditions, while domestic funding conditions continued to tighten. Although nonperforming loans (NPLs) continued to trend up in early 2015, banks expect NPLs to start

Lending surveys
paint uneven picture
of future banking
sector develop-
ments

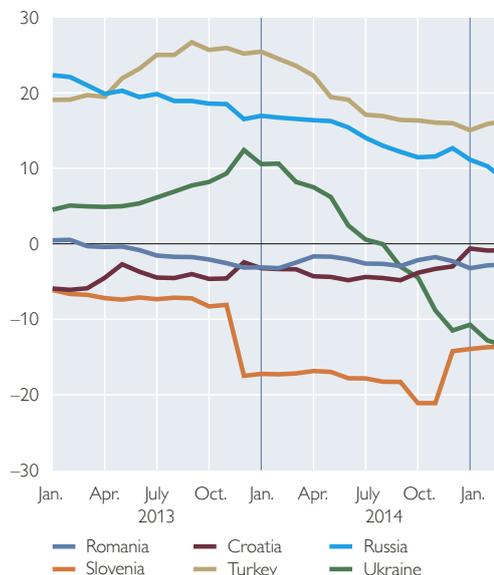
Chart 2

Growth of credit to the private sector

%, year on year, adjusted for exchange rate changes



%, year on year, adjusted for exchange rate changes



Source: national central banks.

declining in the near future, helping the overall NPL index to rise to 51.

The most recent CESEE Bank Lending Survey of the European Investment Bank (EIB), published in late 2014, reported an increase in credit demand and a stabilization of supply conditions (such as credit standards and credit terms and conditions), although both supply and demand levels remain low. Supply and demand are expected to improve in the first half of 2015. Banks' assessment of credit demand is now close to the level observed in late 2012. The EIB reports funding conditions to be fairly favorable, with access to funding positive across all sources. It also finds increasing evidence of a new funding model emerging, with local funding playing a more prominent role, substituting for decreased cross-border funding (i.e. mainly intra-group funding of foreign-owned banks by their parent institutions).

This is in part confirmed by exposure data provided by the Bank for In-

ternational Settlements (BIS): The exposure of BIS reporting banks vis-à-vis the CESEE region declined by EUR 8 billion and EUR 16.4 billion in the third and fourth quarters of 2014, respectively (locational statistics, exchange rate adjusted). Reductions were reported for most countries, but especially for Russia. At the same time, domestic deposits kept increasing in all CESEE countries in the second half of 2014, at least partly making up for the reduction in external funding.

The EIB survey found that CESEE remains clearly relevant in the strategies of international banking groups operating in the region. However, international banks continue to be selective in their country-by-country strategies. Roughly one-third of the groups surveyed expect to expand their operations in CESEE, while another third were found likely to reduce their operations in the region. Roughly half of the groups signal that they have been reducing their total exposure to CESEE,

while only one-third expects to continue doing so. The profitability of banks' CESEE operations is emerging as a challenge. Expected returns on assets for CESEE operations have been decreasing compared with overall group results. Banks are also reviewing their assessments of the potential of some CESEE markets.

Foreign currency loans continue their downward trend

Another issue characterizing the region is a high share of foreign currency loans. The share of foreign currency loans in total loans to households declined most strongly in Hungary (from 52.9% in September 2014 to 5% in March 2015) as the conversion of foreign currency consumer mortgage loans into forint loans started. A notable reduction in the order of 2 percentage points was also reported for Bulgaria and Romania. Ukraine was the only country that reported a strong increase in the share of foreign currency loans in the review period (from 43.9% to 56.9%) as the depreciation of the hryvnia had a strong valuation effect on the FX credit stock.

Credit quality improves somewhat

Swiss franc loans play a role in Poland and Croatia

In March 2015, the share of foreign currency loans in total loans to households was highest in Croatia (72%), followed by Ukraine and Romania (55% to 60%) and Poland and Bulgaria (30% to 35%). The share was below 10% in all other CESEE countries. Most of the foreign currency loan stock was denominated in euro. Other foreign currencies played a role in Ukraine (55%), in Poland and Croatia (around 25%) and to a lesser extent in Romania and Slovenia (around 10%). Apart from Ukraine (U.S. dollar) most of these loans were denominated in Swiss franc and therefore exposed to an exchange rate shock after the Swiss National Bank abandoned its exchange rate cap vis-à-vis the euro from January 15, 2015. By mid-May, local currencies of the region had lost some 10% to 15% of

Credit expansion increasingly financed by domestic deposits

their value against the Swiss franc. While the Polish banking sector should be able to cope with the effects of the exchange rate shock (comparatively low NPL ratio, broadly sound and sustainable credit expansion), the impacts on Croatia could turn out somewhat more pronounced. The country had been stuck in recession for several years and only managed a return to positive growth rates in the final quarter of 2014. Furthermore, its banking sector is already burdened with a comparatively high share of distressed loans. Against this background, the Croatian government froze the loan repayment exchange rate for housing loans indexed to or denominated in Swiss francs at HRK 6.39/CHF for one year. The costs from exchange rate differences have to be born completely by the commercial banks.

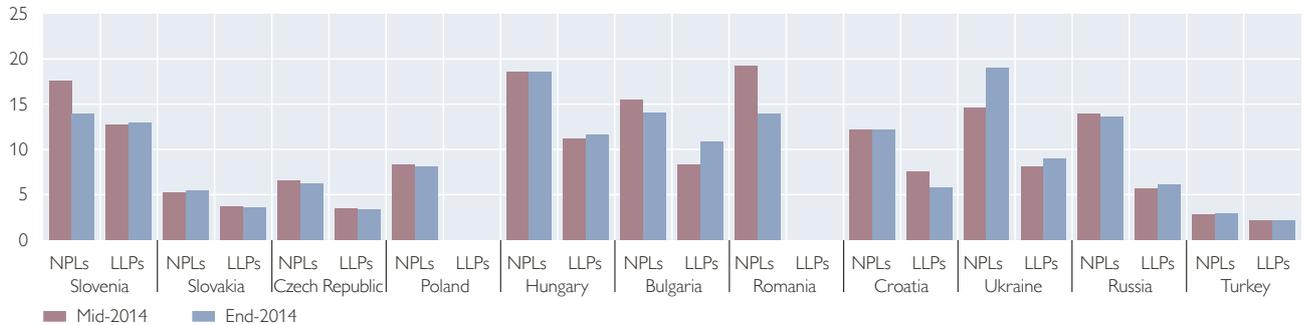
Most countries of the region reported broadly stable NPL ratios in the review period. Notable reductions, however, were reported for Slovenia and Romania. In Slovenia, this development was fueled by the transfer of a further tranche of nonperforming loans to a bad bank, while in Romania some banks removed uncollectible loans from their balance sheets that were fully or largely covered by adjustments for impairment. The NPL ratio also declined in Bulgaria, but less so than in the previous two countries. A marked increase in bad loans was only reported for Ukraine, against the background of the current economic hardship in the country.

The gap between total outstanding domestic claims and total domestic deposits (relative to GDP) was largely closed or even negative in all CESEE EU Member States under observation. Over the past years, a slowly growing deposit stock has been matched by a steady or at times declining credit

Chart 3

Banking sector: credit quality

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



Source: IMF, national central banks, OeNB.

Note: Data are not comparable between countries. NPLs include substandard, doubtful and loss loans, except for Ukraine (doubtful and loss loans) and for Romania and Slovenia (in arrears for more than 90 days).

stock. This trend continued in the review period: The funding gap declined by 7 percentage points of GDP in Bulgaria and by more than 8 percentage points of GDP in Slovenia between mid-2014 and end-2014. Hungary, Romania and Croatia reported reductions in a range of three to four percentage points of GDP. Only Slovakia recorded a merely modest reduction (0.2 percentage points of GDP). The country, however, has reported an overhang of deposits over claims for several years.

In Ukraine and Russia, the funding gap remained unchanged at a rather high level at the end of 2014. Turkey was the only CESEE country to report an increase in the gap. In the review period it increased by 2 percentage points of GDP as deposit growth could not keep pace with claims.

The developments outlined above are broadly reflected in banks' net external positions, which improved somewhat in most CESEE countries. This is especially true for Bulgaria and Croatia, but also for Hungary. A notable deterioration was only reported for Turkey, as domestic funding sources were not sufficient to cover the credit expansion. The banking sector continued to

hold net external liabilities in half of the countries under observation, mostly in a range of 6% to 9% of GDP. Only Turkey recorded substantially larger net external liabilities.

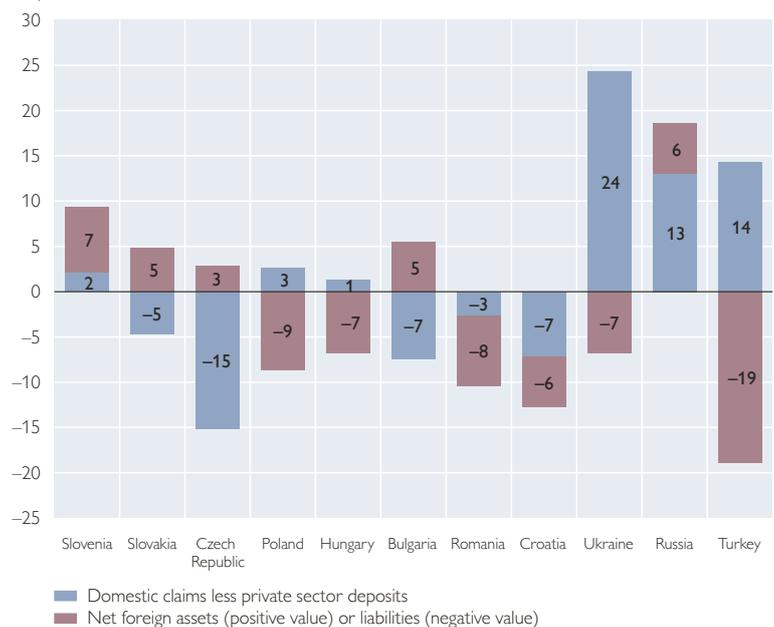
Profits still subdued...

Banking sector profits were rather muted in 2014, with only three coun-

Chart 4

Banking sector: gap between claims and deposits and net external position

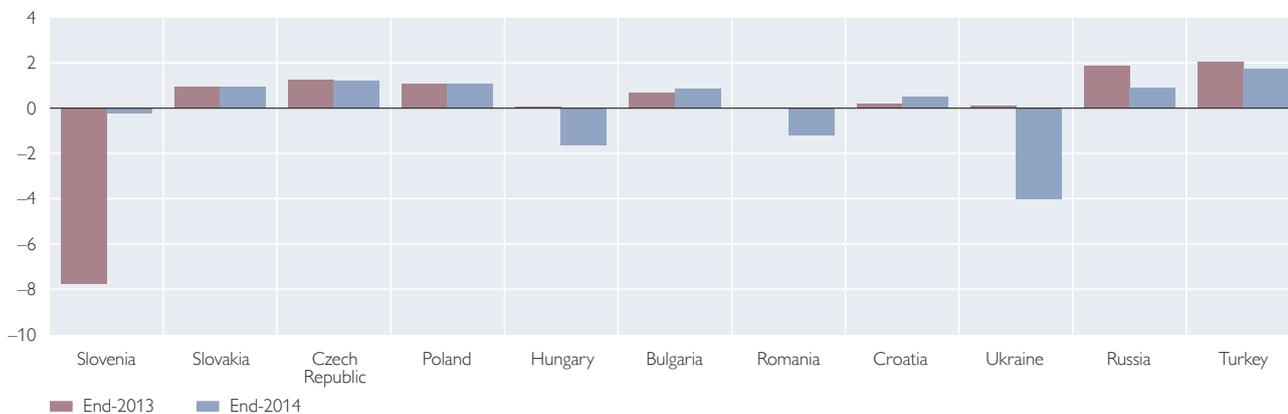
% of GDP at end-2014



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

Banking sector: profitability

Return on assets in %



Source: IMF, national central banks, OeNB.

Note: Data are not comparable between countries. Data are based on annual after-tax profits, except for Russia's, which are based on pretax profits.

...but banking
sectors remain well
capitalized

tries reporting a return on assets of more than 1% (Czech Republic, Poland, Turkey). Profitability deteriorated somewhat in several countries compared to a year earlier. This is especially true for Ukraine, where a marginally positive return on assets in 2013 turned into a loss of 4% in 2014 as loan provisions nearly quadrupled against the background of the severe recession. Increasing provisions and write-offs also took their toll on the banking sectors in Russia, Hungary and Romania; they even pushed profitability into the red in the latter two countries. The reasons for this development relate to the difficult general economic environment in Russia, compensation payments for unlawful terms in loan contracts and the conversion of foreign currency loans in Hungary and write-offs of nonperforming loans in Romania. The only CESEE country to report

a notable improvement in profitability was Slovenia as efforts toward banking sector restructuring bore fruit. The country, however, still reported a moderately negative return on assets in 2014.

At the end of 2014, capital adequacy ratios ranged from 14.9% in Poland to 21.9% in Bulgaria. At 12.5%, only Russia recorded a capital adequacy ratio that was notably lower than the CESEE average. Compared to the end of 2013, the banking sectors in Turkey, Romania, Slovenia and Bulgaria could increase their capital base notably in 2014. In Bulgaria, the capital adequacy ratio even jumped from 16.9% to 21.9%. In contrast, banks in Russia and Ukraine are less capitalized today than they were a year ago (decline in capital adequacy ratio: -1 percentage point and -2.7 percentage points, respectively).

Corporate and household sectors in Austria: financing conditions remain favorable¹

Nonfinancial corporations' financial position supported by low interest rates

Austrian economic growth remains weak

In 2014, the Austrian economy expanded by 0.4% in real terms (in seasonally and working day-adjusted terms), thus growing by less than 1% for the third consecutive year. In the first quarter of 2015, growth remained weak. Although the euro area has emerged from recession, the still weak economic growth has failed to kick-start the Austrian economy. Gross fixed capital formation contracted over the course of 2014 as well as in early 2015 as uncertainties regarding future sales prospects increased. The subdued development of real disposable household income in Austria dampened domestic sales expectations, whereas exports, driven by increasing foreign demand and the weak euro exchange rate, gained momentum in 2014 and early 2015.

Financial investment reduced in 2014

In 2014, the total use of funds (i.e. the sum of gross capital formation and financial investments) of nonfinancial corporations was down 13.1% year on year (see chart 6). Financial investments of the corporate sector more than halved in 2014. In particular, strategic investments were reduced.² Financial investments in a narrower sense, which include all other items on the asset side according to financial accounts data, were considerably higher

Chart 6

Use of funds by nonfinancial corporations



Source: OeNB, Statistics Austria.

Corporate propensity to invest remains muted

than in 2013, when they had been markedly reduced, but stayed below the 2012 level.

Strong reliance on internal financing

Reflecting the subdued economic environment, the gross operating surplus of nonfinancial corporations fell slightly below the previous year's reading in 2014 (-0.2% in real terms), thus declining for the third year in a row, and was 10% below the pre-crisis level of 2007. This echoed the very modest increase of gross value added, which rose by 0.7% in real terms, while com-

No substitution of capital formation by financial investment

¹ All national and financial accounts data in this section are based on ESA 2010 and are therefore not comparable to the corresponding data in previous issues of the OeNB's Financial Stability Report.

² Strategic investments here include those items that (to a large extent) represent direct investments in other enterprises, namely shares (both listed and unlisted) and other equity held, as well as loans extended by nonfinancial corporations. However, portfolio investment in listed shares cannot be separated.

compensation of employees rose considerably (1.4% per annum in real terms). Consequently, the downward trend in gross operating surplus, expressed as a percentage of gross value added in the corporate sector, that had been observed since 2012 persisted. By the end of 2014, the gross profit ratio had fallen to 41.2%.

Financing via quoted stocks gains momentum but is concentrated among a few enterprises

Nonfinancial corporations' recourse to external financing in 2014 was down by one-quarter against the year before, amounting to EUR 9.0 billion. More than half of this amount was again accounted for by equity in 2014 (issuance of both quoted and unquoted shares), although at EUR 4.2 billion, equity financing was 27% lower than in the preceding year. The main part was generated through listed stocks, which had long been affected by the crisis, but began to show some signs of expansion in the course of the year. Net issuance of capital on the stock exchange – i. e. the sum of new listings, capital increases and delistings – amounted to EUR 3.4 billion in 2014. However, as the bulk of this overall issuance volume was attributable to three new listings and two capital increases on the Vienna stock exchange, this form of funding was available only to a small number of larger companies. In the first three months of 2015, no issuance was recorded according to securities issues statistics.³ Unquoted shares and other equity instruments (mainly sales to foreign strategic investors), which had accounted for the lion's share of equity financing in the three years before, only

contributed 18% to equity financing in 2014.

Debt financing muted

Less than half of the external financing raised in 2014 was accounted for by debt instruments. The primary source of debt financing for Austrian non-financial corporations was bank loans, especially those extended by domestic banks, which made up almost half of debt financing in 2014, while borrowings from foreign banks were reduced by EUR 1.1 billion.

The growth of lending by Austrian banks to domestic nonfinancial corporations remained weak. For April 2015, MFI balance sheet statistics put the annual growth rate (adjusted for reclassifications, valuation changes and exchange rate effects) at 1.2% in nominal terms (see chart 7), implying that the growth of bank loans remained virtually flat in real terms. (Nominal) loan growth mainly came from medium-term maturities (over one year and up to five years), while loans with longer maturities – which had accounted for most of the loan growth in past years – grew only modestly.

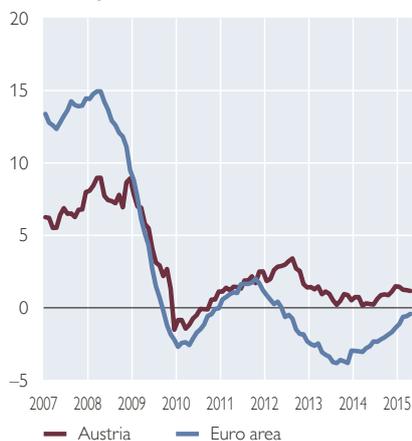
Loan dynamics continued to be affected by both supply- and demand-side factors: On the one hand, banks remained cautious in their lending policies. According to the euro area bank lending survey (BLS), Austrian banks have slightly tightened their credit standards for loans to enterprises in 16 out of 29 quarters since 2008 and have eased them only twice. Even though in most instances the extent of tightening was relatively small, over the years it may have accumulated. Large firms were affected more strongly than small

Equity accounts for more than half of external financing in 2014

Growth of bank loans remains weak

³ At the cutoff date, financial accounts data were available up to the fourth quarter of 2014. More recent developments of financing flows are discussed on the basis of data from MFI balance sheet statistics and securities issues statistics.

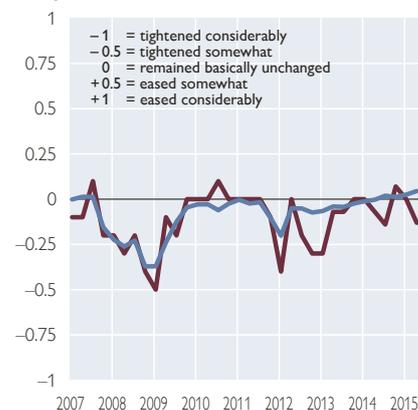
Chart 7

MFI loans to nonfinancial corporations**Volumes**Annual change in %¹**Interest rates**

%

**Credit standards**

Change over last quarter, diffusion index



Source: OeNB, ECB.

¹ Adjusted for reclassifications, changes in valuation and exchange rate effects.

and medium-sized enterprises (SMEs). The tightening of lending policies has been driven both by banks' capital positions and by heightened risk concerns.

On the other hand, loan demand by enterprises remained low in the currently weak cyclical environment. Although in the first quarter of 2015 banks surveyed in the BLS reported a slight increase in corporate loan demand for the first time since 2007, in 19 out of 29 quarters since the onset of the crisis the surveyed banks registered slight declines in corporate loan demand – which they attributed mainly to lower funding requirements for fixed investment. Thus, at least in the current environment of weak demand for loans, the somewhat more restrictive policies of Austrian banks probably did not constitute a binding constraint for the financing of Austrian enterprises.

The tighter credit standards, which indicate a more risk-adequate pricing of loans, were reflected in the terms and conditions of bank loans. Wider margins on loans partially dampened the effects of monetary policy easing on fi-

ancing costs. Thus, the pass-through of the seven key interest rate cuts undertaken by the ECB between November 2011 and September 2014 (which totaled 145 basis points) was incomplete. Over the period from October 2011, the month before the first of the key interest rate cuts, and April 2015, corporate lending rates declined by 107 basis points. Although interest rates fell for all loan amounts and maturities, they decreased more markedly in the case of larger loan amounts (more than EUR 1 million). The spread between interest rates on larger loans and those on loans of lesser amounts, which – given the lack of other data – is commonly used as an indicator of the relative cost of financing for SMEs, averaged 42 basis points in the first four months of 2015, one of the lowest levels recorded in any euro area country.

Market-based debt, which had been a major source of external finance for the corporate sector in the previous years, was reduced by 1% in 2014 (measured against the outstanding volume of end-2013), according to financial

Favorable interest rates for bank loans

accounts data. Data from securities issues statistics indicate net issuance recovered somewhat in the first months of 2015. In March 2015, corporate bond issuance was up 2.5% year on year. However, this form of funding is available only to a limited number of mainly larger companies. Moreover, it has to be taken into account that a considerable part of the enterprises that issue bonds have been reclassified to the government sector in the course of the implementation of ESA 2010.

Low interest rates strengthen debt-servicing capacity of the corporate sector

As a result of both the slowdown in external financing as well as the ongoing recourse to equity financing, corporate debt (viewed in terms of total loans raised and bonds issued) rose quite modestly in 2014 (by 2.2%). As the expansion rate of the gross operating surplus was low as well, the debt-to-income ratio of the corporate sector remained virtually stable in 2014 at 419% (see chart 8). However, it still remained considerably above pre-crisis levels, implying that the increase in the corporate sector's vulnerability that occurred in the period from 2007 to 2009 has not yet been reversed.

The low-interest environment continued to support firms' ability to service their debt. In 2014, the proportion of gross operating surplus that was

spent on interest payments for bank loans declined slightly further, benefiting from the very high share of variable rate loans. While Austrian companies therefore currently face lower interest expenses than their euro area peers, their exposure to interest rate risk is considerably higher. A rebound of interest rates could thus become a significant burden, especially for highly indebted companies, even if rising debt servicing costs may eventually be partially offset by the positive impact an economic recovery would have on firms' earnings.

The corporate sector's exposure to foreign exchange risk, which has never been as high as that of the household sector, remained low in 2014 and the first quarter of 2015, amounting to 5.0% at the latest reading. Since the second quarter of 2014, the share of foreign currency loans has been below the figure for the euro area as a whole.

The insolvency ratio (number of corporate insolvencies in relation to the number of existing companies) continued to decline until the fourth quarter of 2014 (based on a moving four-quarter sum to account for seasonality). This development may be attributed to the moderate increase of debt financing and the low interest rate level (which makes debt servicing easier even for highly indebted companies) but also to the fact that insolvencies usually lag cyclical movements.

Falling number of insolvencies

High share of variable rate loans

Risk indicators for nonfinancial corporations

Debt

% of gross operating surplus



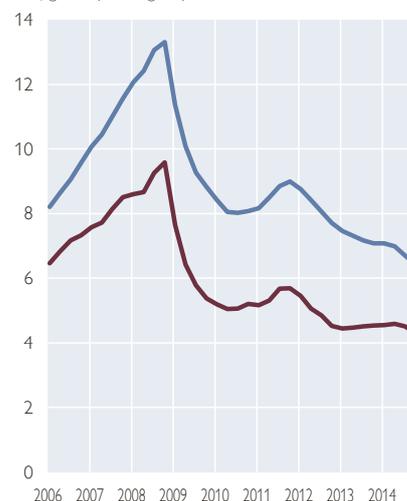
Debt-to-equity ratio

%



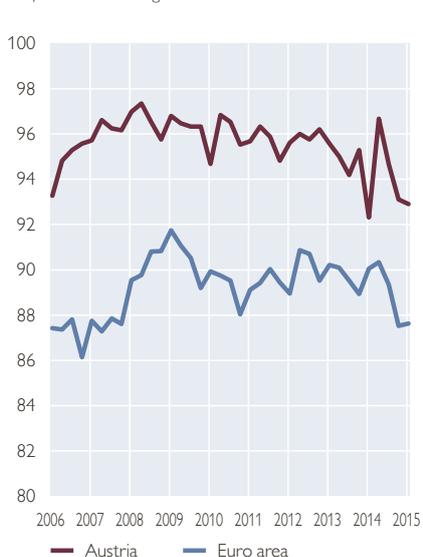
Interest expenses¹

% of gross operating surplus



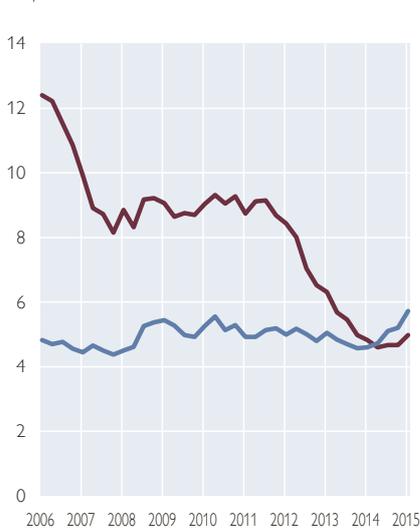
Variable rate loans

% of total new lending



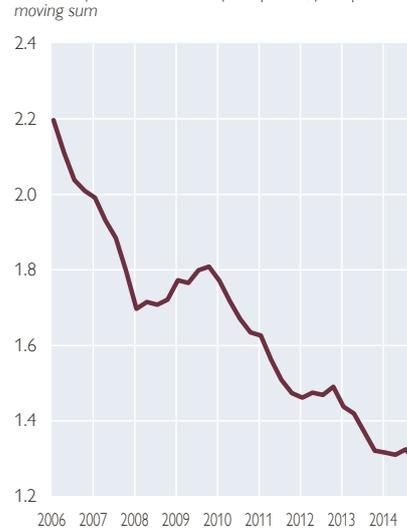
Foreign currency loans

% of total loans



Insolvencies

Number of insolvencies in % of companies, four-quarter moving sum



— Austria — Euro area

Source: OeNB, ECB, Eurostat, Kreditschutzverband von 1870.

¹ Euro area: euro loans only.

Foreign currency risks remain a concern for the household sector

Development of households' real income recovered in the second half

Despite weak economic growth, the employment trend was remarkably robust in 2014 and the first months of 2015. The number of employed persons and working hours still showed positive

rates of change. At the same time, unemployment continued to climb in view of rising labor participation rates. Households' real disposable income increased in the second half of 2014 after it had shrunk in the first half. The saving rate of the household sector remained clearly below the long-term average of 10% (1999–2013). Low sav-

Saving rate remains low

ing rates are typical of periods with low income growth, when households save less in order to smooth their consumption levels. Furthermore, the low-interest environment may also have reduced the attractiveness of saving.

Financial investment by households still below pre-crisis levels

As a result of the low saving rate, financial investments by households remained subdued in 2014. Although at EUR 9.7 billion they surpassed the previous year's level by almost one-quarter in nominal terms, they were still more than 10% below the 2012 value and less than half of the pre-crisis level (see chart 9). Hence, the increase in 2014 most likely does not point to a turnaround in households' financial investments.

Strong liquidity preference

The structure of households' financial investments showed the same pattern in 2014 as it had done in the years since the onset of the crisis. As households still displayed a strong preference for liquidity, given the low opportunity costs resulting from the low-interest environment, more than 40% of households' financial investment flowed into cash holdings and deposits with banks. For the third year in a row, bank deposits with agreed maturity declined, while overnight deposits saw further significant inflows.

Households' net financial investment in capital market instruments, which had already been muted in the years before, became negative in 2014 (EUR –0.4 billion). In particular, households shunned investments with longer interest rate fixation periods and reduced their direct holdings of long-term debt securities (especially bonds issued by domestic banks). Conversely, households invested EUR 3.3 billion in mutual funds and another EUR 0.6 billion in direct holdings of quoted stocks,

in an ongoing search for yield in a low-interest environment.

Investment in life insurance and pension entitlements (the latter including both claims on pension funds and direct pension benefits granted by private employers) continued to slow down in 2014 and at EUR 2.0 billion registered the lowest value since the time series began in the mid-1990s. This decrease was driven mainly by life insurance policies, where net investments fell by 60% against the previous year, again reflecting the strong preference for liquidity. A large proportion of the inflows into these instruments were not an outcome of current investment decisions, but rather – given the long maturities and commitment periods involved – reflected past decisions. A key factor in this context is demand for funded pension instruments; moreover, life insurance policies often serve as repayment vehicles for foreign currency bullet loans (even if these are converted into euro loans).

As a result of rising share and bond prices, the Austrian household sector, on aggregate, again recorded consider-

Chart 9

Households' financial investment



Source: OeNB.

¹ Debt securities, mutual fund shares and listed shares.

² Unlisted shares and other equity.

able (unrealized) valuation gains on its securities portfolios in 2014,⁴ totaling EUR 1.9 billion, which was equivalent to 1.8% of households' securities holdings at the end of 2013. Valuation gains were registered for long-term debt securities and mutual fund shares,

whereas quoted stocks issued by domestic enterprises registered valuation losses in 2014. While these unrealized valuation gains contributed to a notional increase in the financial wealth of households in the first half of 2014, valuation developments are very vola-

Considerable
(unrealized)
valuation gains

Chart 10

MFI loans to households: volumes and conditions

Housing loans: volumes

Annual change in %¹



Consumer loans: volumes

Annual change in %¹



Other loans: volumes

Annual change in %¹



Housing loans: interest rates

%



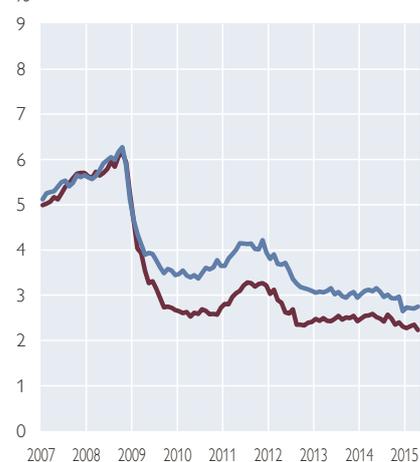
Consumer loans: interest rates

%



Other loans: interest rates

%



— Austria — Euro area

Source: OeNB, ECB.

¹ Adjusted for reclassifications, valuation changes and exchange rate effects.

⁴ However, it should be taken into account that according to data from the Household Finance and Consumption Survey (HFCS), only about 15% of the Austrian households own securities.

tile and can shift in the opposite direction as well (as they have done in the past).

Growth of household loans remains muted

Housing loan expansion on a stable path

The expansion of bank lending to households remained subdued until the first quarter of 2015. In April 2015, bank loans to households (adjusted for reclassifications, valuation changes and exchange rate effects) increased by 1.3% in nominal terms. A breakdown by currency shows that euro-denominated loans continued to grow briskly (by 5.6%), while foreign currency loans continued to contract at double-digit rates – in April 2015, they had fallen by 15.2% year on year. Broken down by loan purpose (see chart 10), consumer loans and other loans shrank by 3.0% and 1.0% year on year, respectively, while housing loans grew by 3.1% year on year. The favorable financing conditions probably supported the dynamics of lending for house purchases, with housing market indicators also pointing to an increase in demand. The still rising house prices (see below) may have boosted the funding needs for real estate investment. The transaction volume on the residential property market in Austria increased by 21.6% in nominal terms, according to data published by RE/MAX and compiled from the land register by IMMOUnited, also implying an increase in financing needs. At the same time, there are no indications that banks have relaxed their credit standards for housing loans. According to the Austrian BLS results, standards have been eased slightly only twice since the beginning of 2013, after having shown very little movement in the years before.

Lending terms and conditions remained favorable. Interest rates on short-term loans (for interest rate fixa-

tion periods of up to one year) stood at 2.31% in April 2015, 0.51 percentage points down year on year. A look at data on lending rates across the entire maturity spectrum reveals that interest rates on new housing loans stood at 1.93% in April 2015, 0.41 percentage points lower than twelve months before. Over the same period, interest rates on consumer credit dropped by 0.35 percentage points to 4.67%.

Households' currency and interest rate risks

By the end of 2014, the household sector's total liabilities amounted to EUR 166.4 billion, according to financial accounts data, a mere 0.7% up in nominal terms on last year's figure, reflecting low loan growth. Expressed as a percentage of net disposable income, household debt decreased by 1.3 percentage points to 87.7% in 2014 (the third consecutive annual decrease; see chart 11). The debt ratio of households in Austria thus remained lower than in the euro area as a whole. Moreover, it should be taken into account that according to data from the Household Finance and Consumption Survey (HFCS), only 36% of Austrian households have taken out a loan.

Given modest debt growth and low interest rates, households' interest expenses remained low. In the fourth quarter of 2014, they equaled 1.9% of their aggregate disposable income, almost 2 percentage points less than in 2008, the year before interest rates had begun to fall. One of the factors behind the acceleration of the decline was the high share of variable rate loans: In the first quarter of 2015, loans with an initial rate fixation period of up to one year accounted for almost 85% of new lending (in euro) to households, a very high proportion by international standards. On the one hand, the pass-

Little change in household indebtedness

through of the ECB's lower key interest rates to lending rates was therefore faster in Austria than in the euro area as a whole. Loan quality may have also played a role, given Austrian households' comparatively low level of indebtedness. On the other hand, this high share of variable rate loans in total lending implies considerable interest

rate risks in the balance sheet of the household sector.

The still very high share of foreign currency loans in total lending remains a major risk factor for the financial position of Austrian households, despite a noticeable decrease in the past years. This risk was highlighted in January 2015 when, as a result of the strong

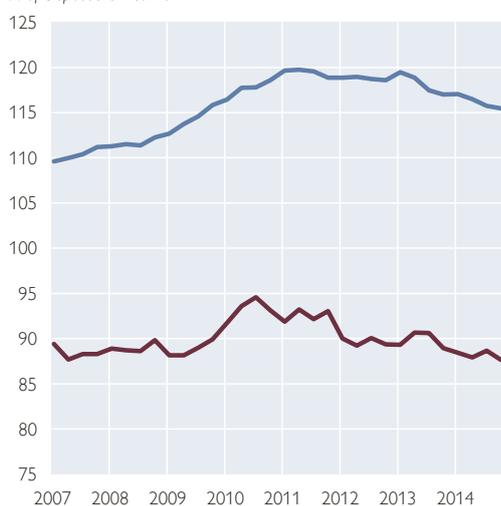
Considerable
foreign currency
risks

Chart 11

Indicators of household indebtedness

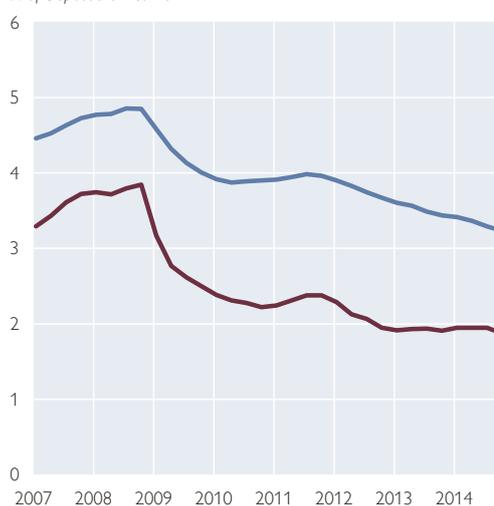
Liabilities

% of disposable income



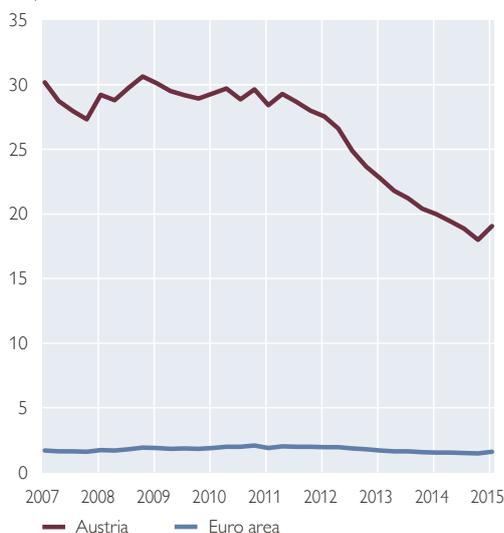
Interest expenses

% of disposable income



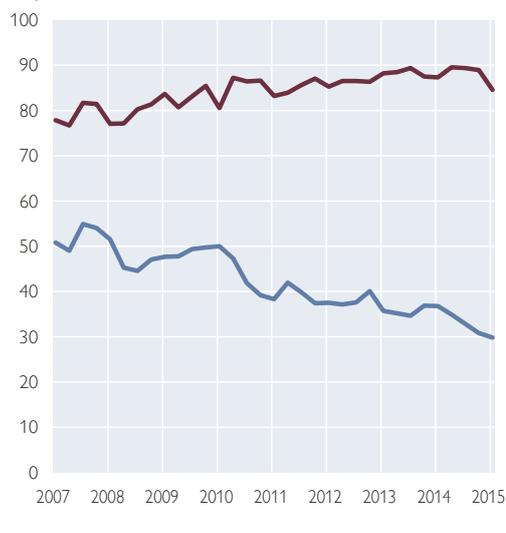
Foreign currency loans

% of total loans



Variable rate loans

% of total new loans



Source: OeNB, Statistics Austria, ECB, Eurostat.

Note: Figures for the euro area only represent the interest rate expense on euro-denominated loans.

appreciation of the Swiss franc following the decision of the Swiss National Bank to discontinue the minimum exchange rate of CHF 1.20 per euro, the foreign currency share rose from 18.0% to 19.5% within one month. However, during the following months, the share

of foreign currency housing loans continued to edge down, reaching 18.9% in April 2015. Almost all outstanding foreign currency-denominated housing loans are denominated in Swiss franc (close to 97%).

Box 1

Microsimulation: how exchange rate shocks would affect FX borrowers in Austria¹

Over the last years, the allocation of new foreign currency (FX) loans to the household sector has been reduced considerably, to about 1% at end-2014. However, the stock of FX loans granted to the household sector remains relatively large; it amounted to about 20% of total household debt at end-2014. Valuation effects play an important role in explaining why the stock of FX loans is still as large as it is. In particular, as more than 95% of all FX loans held by Austrian households are denominated in Swiss francs, the appreciation of this currency against the euro during the last years and months (see chart 1) has directly increased the outstanding amount of these loans.

Chart 1

Exchange rate development of the Swiss franc



Source: OeNB.

¹ Up to end-1998: ATS.

We can get a closer look at how these exchange rate developments are affecting FX borrowers by combining exchange rate time series macrodata with household-level microdata from the Austrian Household Finance and Consumption Survey (HFCS) 2010. By matching the average exchange rate in each year with the year in which a household's highest FX loan was taken out, one obtains the initial exchange rate for each household's FX loan² in the HFCS. This makes it possible to look at the distribution of initial exchange rates across FX borrowers and to simulate the effect of different exchange rate shocks on FX borrowers.

Chart 2 shows how the initial CHF/EUR exchange rate at the time a household's FX loan was taken out is distributed across all Austrian households with FX loans. 90% of FX borrowers took out their FX loans at an exchange rate level of 1.47 or higher, 50% at an exchange rate level of 1.55 or higher, and 10% at an initial exchange rate of 1.64 or higher. If these

¹ This box is based on: Albacete, N. and P. Lindner. 2015. Foreign currency borrowers in Austria – evidence from the Household Finance and Consumption Survey. In: OeNB. Financial Stability Report 29.

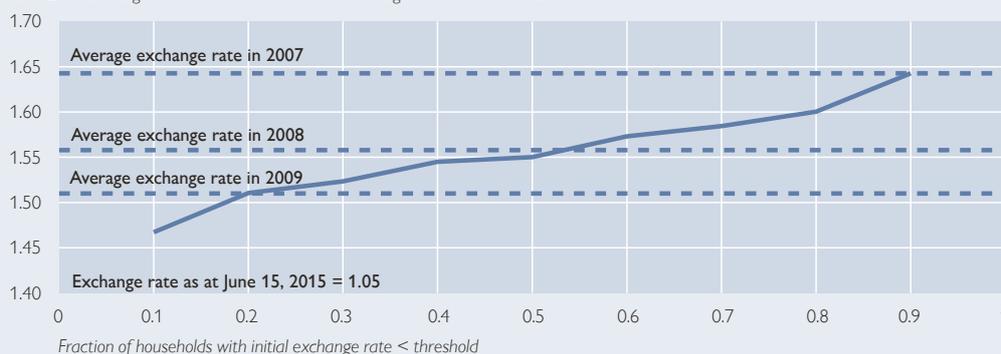
² In the following, any references to a household's FX loan shall be meant to be understood as the household's highest FX loan if a household has several FX loans.

exchange rate levels are compared with the current exchange rate, it is obvious that households are currently experiencing large (unrealized) losses due to the appreciation of the Swiss franc. At the current CHF/EUR exchange rate level of 1.05 (as at June 15, 2015), the median FX borrower is suffering (unrealized) losses of 47% of the initial outstanding amount of his or her FX loan. This comparison also suggests that currently no FX borrower is enjoying (unrealized) profits in terms of a favorable exchange rate development.

Chart 2

Distribution of FX loan holders' initial CHF/EUR exchange rate

CHF/EUR exchange rate at the time the household's highest FX loan was taken out



Source: HFCS 2010, OeNB.

Chart 3 shows the results of simulating the effects of a return to exchange rate levels as those experienced between 1990 and 2015 on each FX borrower in the HFCS. Households which took out their FX loans at a time when the exchange rate was lower than the simulated one are defined as “exchange rate losers” because they would be experiencing (unrealized) losses. The top left panel in chart 3 shows that if the Swiss franc became as weak as it was during the early 1990s or in 2007, the share of exchange rate losers would be very low – below 5% of FX borrowers. However, simulating exchange rates as those observed in 2002 or since 2010 produces shares of exchange rate losers of more than 95%.

The bottom left panel in chart 3 shows the debt share held by the exchange rate losers derived from the above simulation. It ranges from 1% of aggregated household debt, if exchange rates were as in the early 1990s or in 2007, to around 30% if exchange rates were as in 2002 or since 2010. Still, the risks to financial stability stemming from such scenarios seem to be rather low, as the unsecured³ debt share held by the exchange rate losers in the simulation is below 4% in all scenarios. This suggests that most Austrian FX borrowers should have enough resources to repay their FX debt.

Finally, the right-hand panel in chart 3 shows that, according to HFCS 2010 data, the remaining maturities of FX borrowers' FX loans are relatively large for most households. For 18% of FX borrowers, residual maturity lies between 11 and 15 years, for 35% of FX borrowers it lies between 16 and 20 years, and for 17% of FX borrowers it lies above 20 years.⁴ As most FX loans in Austria are bullet loans, this suggests that the above estimated (unrealized) losses will remain unrealized for some time, which can be used to find a solution to this problem.

³ A household's unsecured debt is defined as the household's debt that remains after deducing the household's total financial and real assets.

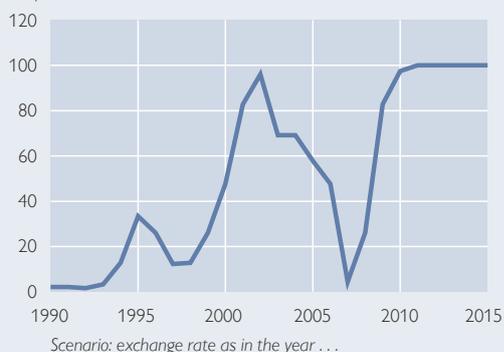
⁴ These numbers refer to the survey year 2010. Today, the remaining maturities would be reduced by 5 years.

Chart 3

Microsimulation of exchange rate scenarios

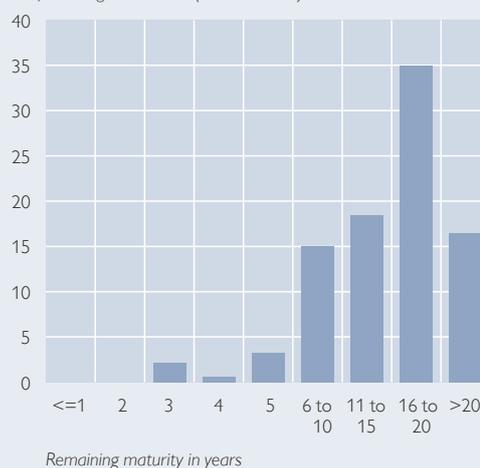
Exchange rate losers

% of households with FX loan



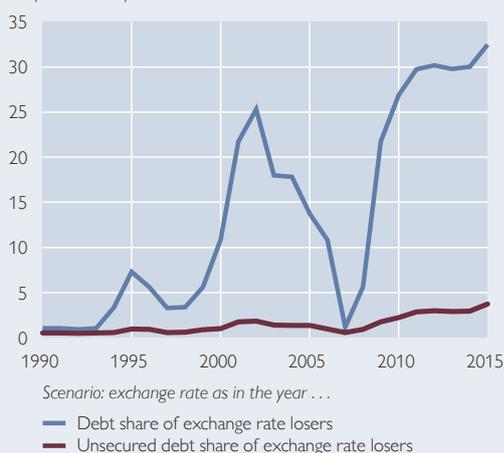
Remaining maturities of exchange rate losers

% of exchange rate losers (scenario 2015)



Debt of exchange rate losers

% of total debt of all households



Source: HFCS 2010, OeNB.

Price dynamics differ across regions

Residential property price growth in Austria slowed down

Over the past ten years, real estate prices in Austria rose at a clearly stronger pace than prices in the EU. In the course of 2014, however, price increases on the Austrian residential property market moderated considerably. In the fourth quarter of 2014, property price rises slowed to 2.4% year on year and even declined by 0.5% quarter on quarter. Price dynamics remained heterogeneous across regions. In Vienna, property price growth had continually subsided in the course of the year, coming

to 1.0% year on year in the fourth quarter of 2014, whereas in Austria excluding Vienna price growth accelerated further, reaching 3.2% year on year. According to the OeNB fundamentals indicator for residential property prices, residential property prices in Vienna were overvalued by 19% in the fourth quarter of 2014. For Austria as a whole, the indicator suggested that prices were broadly in line with fundamentals (2% below fundamental values).

Demand for residential property in Austria has been driven by demographic change and by investors' choices. Since

2011, population growth in Austria has steadily picked up speed. In addition, the heightened propensity of investors to choose real estate over other assets for investment also seems to have played a role in strengthening demand. From an investor’s perspective, the rising ratio of property prices to rents

observed in Vienna – and also in the rest of Austria in 2014 – is an indication of contraction of the yields on real estate investments. On the supply side, housing investment advanced only slightly in 2014 in real terms (0.4%) after having contracted in the two previous years.

Chart 12

Austrian residential property market

Residential property prices in Austria



OeNB fundamentals indicator for residential property prices



Source: Wolfgang Feilmayr, Department of Spatial Planning, Vienna University of Technology; OeNB.

Austrian financial intermediaries: a financial system in structural transformation

Austria has a very large and highly interconnected banking sector

New macroprudential measures will improve systemic resilience of Austrian banking sector

On June 1, 2015, Austria's macroprudential policy body, the Financial Market Stability Board (FMSB),¹ issued a recommendation to the Austrian Financial Market Authority (FMA) to activate the systemic risk buffer (SRB) and the buffer for other systemically important institutions (O-SII) for selected banks. The SRB, ranging from 1% to 3%, will apply to 11 banks. The O-SII buffer will apply to seven banks but as these banks are also subject to the SRB only the latter applies. Both buffers will enter into force as of July 1, 2016. A phasing-in period is recommended for the four largest banks: From July 1, 2016, to June 30, 2017, they will have to hold an SRB of 2%. These macroprudential measures will improve the financial stability of the Austrian banking system by addressing long-standing structural systemic risks which have persisted for the past decade. The OeNB, international institutions and rating agencies have repeatedly highlighted these risks in their publications (including the Financial Stability Report) over the past few years.² The tools to finally address them have been made available only recently. They also provide for the implementation of a measure that was set out in the

Foreign exposure of Austrian banks is high and concentrated in emerging markets

Austrian Sustainability Package published in 2012.³

Austria has a very large banking sector with total assets equivalent to 328% of Austrian GDP as of end-2014. The dominant intermediation role of the Austrian banking sector may cause substantial negative external effects on the real economy. The Austrian bank support package adopted in 2008 was the largest in the EU relative to GDP. Meanwhile, most countries with similarly large banking sectors have taken macroprudential measures (see below), while the European Systemic Risk Board (ESRB) concluded in a recent study that a banking system that grows beyond a certain threshold exerts a negative influence on GDP growth.⁴ Also, the Austrian banking sector consists of a relatively large number of individual banks, and most of them are effectively part of only five large banking groups or sectors, which together account for more than 80% of the entire sector's total consolidated banking assets.

The Austrian banking sector's foreign exposure is high and concentrated in emerging markets. The total foreign exposure amounts to 160% of Austrian GDP, two-thirds of which are located in Central, Eastern and Southeastern Europe (CESEE). The Austrian banking sector has the largest share of emerging market exposure among ad-

¹ For more details on the Financial Market Stability Board see www.fmsg.at/en.

² See e.g.: IMF. 2014. *Austria: 2014 Article IV Consultation Staff Report*; Fitch. 2013. *Peer Review: Major Austrian Banks*. September 27, 2013; Moody's. 2014. *Banking System Outlook Austria*. May 21, 2014.

³ <http://www.oenb.at/en/Financial-Stability/Systemic-Risk-Analysis/Sustainability-of-Large-Austrian-Banks--Business-Models.html> (retrieved on June 15, 2015).

⁴ ESRB. 2014. *Is Europe Overbanked? Reports of the Advisory Scientific Committee No. 4*. June. https://www.esrb.europa.eu/pub/pdf/asc/Reports_ASC_4_1406.pdf (retrieved on June 15, 2015). Similar results are obtained by Denk, O., S. Schich and B. Cournède. 2015. *Why implicit bank debt guarantees matter: Some empirical evidence*. In: *OECD Journal: Financial Market Trends Volume 2014/2*. 63–88; Arcand, J.-L., E. Berkes and U. Panizza. 2012. *Too much finance? IMF Working Paper No 12/161*.

vanced economies' banking sectors. It is therefore exposed to heightened geopolitical, credit and exchange rate risks in these countries. The size and concentration of the exposure has repeatedly been identified as a structural systemic risk to the Austrian banking sector.⁵ Risks materializing at individual subsidiaries in a particular CESEE country can cause adverse effects on Austrian parent banks, other Austrian banks, the Austrian financial system and, ultimately, even public finances as well as the real economy in Austria and in CESEE.

The Austrian banking system has yet to fully prepare for the ongoing withdrawal of implicit government guarantees in the EU, which will – most notably – be the consequence of the implementation of the European Bank Recovery and Resolution Directive (BRRD) in the Member States.⁶ According to the OeNB's calculations, Austrian banks' refinancing advantage resulting from the implicit government guarantee is estimated to have been in the range of 25% to 40% of consolidated bank profits over the past decade. For some banks, the removal of implicit government guarantees has already led to rating downgrades. Downgrades, in turn, may result in rising funding spreads unless banks increase their capitalization levels.

Austrian banks have relatively low common equity tier 1 (CET1) ratios compared to their international peers. Furthermore, the banking system's ownership structures could make private sector recapitalizations difficult in the event of stress, as many shareholders are highly leveraged themselves (e.g.

the decentralized sectors). At the same time, the ability to generate capital internally is hampered by banks' low profitability. In the case of banks directly owned by regional governments, such as some state mortgage banks, EU state aid rules have made recapitalization difficult. State aid proceedings hamper quick ex-post recapitalization in the event of a crisis, making it more costly until a decision by the European Commission is reached. This further increases the costs of recapitalizations which would have to be borne by the general public.

Over recent years, the structural, systemic risks the Austrian banking system has been exposed to have attracted international attention: In its 2014 Article IV Consultations Report, the International Monetary Fund (IMF) found that the high exposure to volatile CESEE markets makes the Austrian banking system susceptible to macroeconomic and political risks arising in this region. In addition, the IMF has repeatedly pointed out Austrian banks' below-average capitalization and low profitability levels. Although Austrian banks have strengthened their capital positions over recent years, the IMF still sees capital gaps vis-à-vis the levels of their international peers.

Since 2014, the vast majority of EU Member States have tackled systemic risks by activating macroprudential instruments. Structural systemic risks to the banking sector or the economy, including the issue of systemically important institutions, have been addressed by the implementation of SRBs and O-SII buffers,⁷ sometimes in combination with complementary pillar 2

Systemic risks attract international attention

Austrian banks are dependent on an implicit government guarantee, whose value is to be reduced

Several EU countries have started to tackle systemic risks

Austrian banks have relatively low capital ratios

⁵ See e.g.: IMF. 2014. *Global Financial Stability Report*. May.

⁶ In Austria, the BRRD was implemented by the adoption of the Federal Act on the Recovery and Resolution of Banks (*Bundesgesetz über die Sanierung und Abwicklung von Banken – BaSAG*), which came into force in 2015.

⁷ The Czech Republic, Croatia, Denmark, Estonia, the Netherlands, Norway and Sweden have introduced these buffers.

Growth effects of the systemic risk and O-SII buffers are positive

O-SII buffer addresses risks that a bank poses to the financial system

Systemic risk buffer addresses systemic risks banks are exposed to

Capital ratio increase of Austrian banks stalls

requirements. Some countries have brought forward the full application of the capital conservation buffer.⁸ The macroprudential responses to systemic risks emanating from the real estate sector are more diverse: They encompass tools based on the Capital Requirements Regulation regarding risk weights and values of losses-given-default,⁹ as well as policies based on national law such as loan-to-value or loan-to-income ratios.¹⁰ A number of countries¹¹ have also introduced the anti-cyclical capital buffer regime ahead of time.

The O-SII buffer was introduced to address risks that emanate from a specific bank. The European Banking Authority's (EBA) guideline on the identification of O-SIIs stipulates four characteristics for a bank to be identified as an O-SII: (1) size, (2) importance,¹² (3) complexity and cross-border activity and (4) interconnectedness. An O-SII may be required to hold an additional capital buffer of up to 2% of CET1 in relation to its risk-weighted assets.

The OeNB considers the systemic risk buffer to be the most suitable instrument for strengthening the resilience of the Austrian banking system further. Its application has two objectives: first, increasing banks' resilience with respect to risks emanating from the large size of the banking system, i.e. banks hold more capital and therefore should be able to bear the costs of potential future banking crises instead of having to resort to taxpayers' money; and second, increasing the resilience of the Austrian banking system with respect to shocks emanating from CESEE.

The OeNB has carried out a comprehensive cost-benefit analysis of the introduction of the systemic risk buffer and the O-SII buffer in Austria and found that there would be a minimal reduction in economic growth over the short term. In the long term, however, the reduction in the probability and costs of banking crises has in fact significant positive effects on economic growth. The risk-adequate pricing of loans should subsequently improve the allocation of capital and, as a result, lead to more sustainable economic growth. The OeNB also expects that the introduction of the systemic risk buffer and the O-SII buffer would have long-term positive economic effects on the CESEE host countries of Austrian banks' subsidiaries. A number of host authorities have already taken macroprudential measures; the OeNB considers the Austrian measures to be complementary to and supportive of these measures.

Overall the systemic risk buffer and the O-SII buffer constitute the least intrusive tools that combine high effectiveness and transparency with the lowest possible distortion of credit supply and the Single Market. These buffers will also improve the relation between Austrian banks' risk exposure and risk-bearing capacity, which is still weak.

The planned macroprudential buffers will help to align Austrian banks' capital levels with those of their peers. The increase in the capital ratios of Austrian banks that was observed in previous years came to a halt in 2014. The three largest Austrian banks even

⁸ Bulgaria, the Czech Republic, Estonia, Finland, Italy, Lithuania, Luxemburg, Latvia, Norway, Sweden and Slovakia.

⁹ E.g. In Belgium, Croatia, Ireland, Norway and Sweden.

¹⁰ E.g. In Cyprus, Hungary, the Netherlands and Slovakia.

¹¹ The Czech Republic, Norway, Slovakia, Sweden and the United Kingdom.

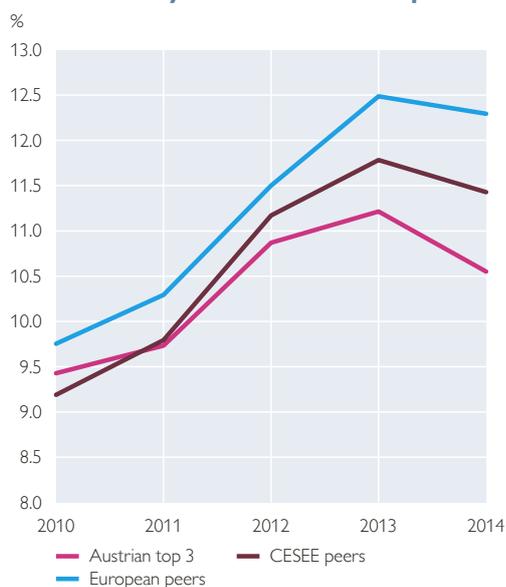
¹² E.g. share in payment transactions, share in deposits, share in loans.

Chart 13

Capital ratios of Austrian banks

Source: OeNB, SNL Financial.

Chart 14

CET1 ratio by international comparison

Source: SNL Financial.

saw a reduction in their capital ratios (chart 13). These developments can largely be ascribed to a reduction in share premiums and Basel III transitional adjustments. Strategies to im-

prove capital ratios differed somewhat across banks, but the general pattern – except for the top 3 banks – was a shift away from reducing risk-weighted assets toward retaining profits. Low bank profitability, however, limits organic capital generation at Austrian banks and shareholders' capacity to recapitalize banks at reasonable costs during a crisis is often weak.

At the end of 2014, Austrian banks continued to lag behind their European and CESEE peer groups; the difference between the average CET 1 ratio of Austria's top three banks (10.6%) and that of their European¹³ (12.3%) and CESEE peers¹⁴ (11.4%) remained significant. Consequently, Austrian banks should continue to aim at closing this widening gap (chart 14), especially since market participants are expecting banks to hold significantly more capital than minimum requirements stipulated by the Basel III rules.

While the capital ratios of Austrian banks remained broadly unchanged, the leverage ratio increased to 5.7% in the course of 2014. This figure is well above the European average. The median fully-loaded Basel III leverage ratio for European large and complex banking groups stood at 3.7% at end-2014, although it showed some variation across institutions and countries.

Austrian banks' profitability still under pressure

Continuing the trend of recent years, 2014 was characterized by high credit risk provisions and low interest rates. Therefore, the profitability of European banks was still under pressure. While banks have made further progress in addressing legacy issues from

¹³ The European peer group consists of 29 European banks with similar business models.

¹⁴ The CESEE peer group consists of 12 European banks with relevant CESEE exposure.

the financial crisis, the outlook for growth remains subject to downside risks both for the euro area and CESEE. Geopolitical tensions resulting from the Russia-Ukraine conflict had repercussions in CESEE markets and hence for the activities of Austrian banks as well.

Austrian banks' consolidated net profit back in positive territory in 2014

The Austrian banking sector generated a net profit of EUR 1.4 billion in 2014 after a net loss in the preceding year. This profit was equivalent to a consolidated return on average assets of 0.1%. The 2014 result does not reflect the losses of Hypo Alpe-Adria-Bank International AG (HAA), however, as the bank was put into resolution in the course of the year. For the second year in a row the Austrian banks deemed significant under the Single Supervisory Mechanism (SSM) faced a loss in 2014, while the less significant banks generated stable profits in both years.

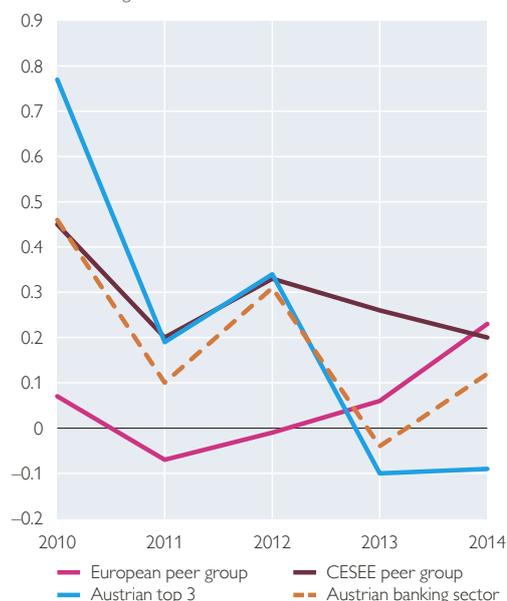
Due to sustained goodwill write-downs in CESEE, the net result of the top 3 Austrian banking groups continued to be negative in 2014. Compared to banks in their peer group, Austrian banks are therefore still lacking internal capital-generating capacity (see chart 15).

Provisioning remains at elevated level

Austrian banks' consolidated operating profit (before risk) improved by 16.8% in 2014. In the low interest rate environment banks were able to increase their net interest income. Fee and commission income was up as well. However, the downward trend in trading income continued in 2014. On the other hand, operating expenses were positively influenced by a reduction in staff costs. Compared to previous years, depreciations were also significantly reduced and administrative costs remained near the level of 2013 (see chart 16). This resulted in an overall improvement in the operating efficiency of Austrian banks, as the cost-in-

Austrian banks' profitability by international comparison

Return on average assets in %



Source: SNL Financial.

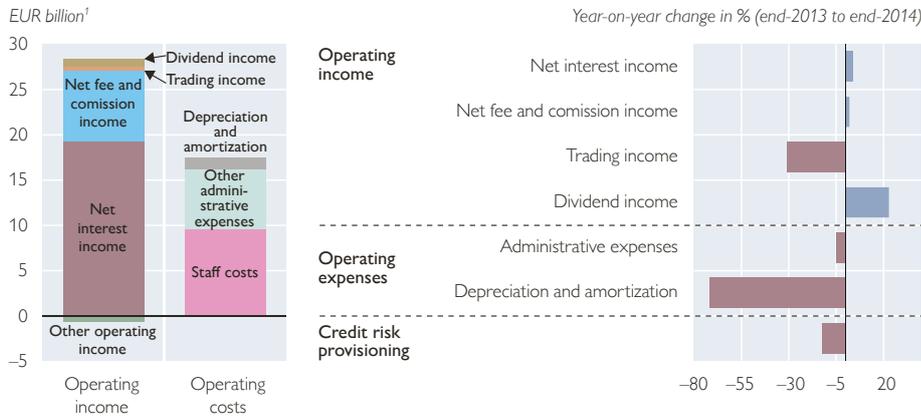
come ratio decreased slightly to 67.6% in 2014 (compared to 73.0% in 2013). However, efficiency-enhancing programs should be pursued further as this figure is still above historical values and the latest available EU average figures.

Provisions to cover credit risks in the loan portfolios continued to remain at elevated levels in 2014 (EUR 6.2 billion or two-thirds of total operating profit), but had decreased compared to the year before. However, this decline was caused by the adjustment of credit risk provisions after the restructuring of HAA. Also, two large banks had to increase their credit risk provisions due to developments in Russia and Ukraine. Hence, asset quality continues to be weak and remains a substantial drag on overall profitability.

The results of Austrian banks on an unconsolidated basis were affected by one-off effects in 2014. These (accounting and restructuring) effects led to a

Chart 16

Main drivers of Austrian banks' operating profit (consolidated level)



Source: OeNB.
¹ Figures as at end-2014.

net loss of EUR 6.7 billion. Without these effects the result would have been slightly positive, but still weak in comparison to banks in other countries. Tight competition in the domestic market, structural weaknesses and continuously low interest margins are set to remain a particular concern for a large number of Austrian banks.

Despite solid operating income, additional provisions made for future staff pensions¹⁵ triggered a strong increase in

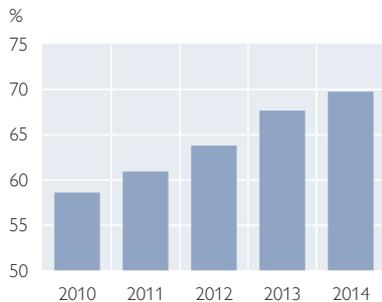
operating (i.e. staff) costs. Interest margins in Austria continued to be below the European average, even though the margins on existing business have risen slightly, especially at bigger institutions. Yet the effects of the low interest rate environment on banks' profitability have so far been smaller in Austria, as variable rate loans play a big role in the asset structure of Austrian banks. Nevertheless, high liquidity in the market paired with long-lasting low interest rates might be a burden on bank profitability. For a more detailed analysis of the effects of low and negative interest rates on Austria's banks, see box 2.

Net risk costs in Austria decreased by approximately 8% in 2014 due to the restructuring of HAA, but – as in 2013 – nearly offset operating profit.

Continued efforts by banks and supervisory authorities to foster the consolidation of the Austrian banking sector should ideally lead to more risk-adequate pricing in the future. This is important because the efficiency

Chart 17

Unconsolidated cost-income ratio of Austrian banks



Source: OeNB.

¹⁵ Due to lower discounting rates, some banks had to endow their pension schemes with additional funds.

Recovery of Austrian banks' profitability depends on structural factors and sustainable growth strategy

of the domestic business weakened in recent years (see the increase in the unconsolidated cost-income ratio shown in chart 17).

The recovery of Austrian banks' profitability, which is important for supporting organic capital growth, depends on the resolution of legacy credit quality issues in CESEE but also, and more importantly, on structural factors in the domestic market. As the profitability pressures on the Austrian banking sector described above persist, so does the need for further consolidation efforts.

The total assets of the Austrian banking sector amounted to EUR 896 billion at the end of 2014 on an unconsolidated level, mirroring a decline by 16.2% compared with 2008 and a reduction by 3.4% compared to 2013. Since 2008, the number of credit institutions in Austria has been reduced from 867 to 764 (end-2014). The two key banking system capacity indicators "inhabitants per local branch" and "inhabitants per bank employee" increased both by 3% in 2014 compared to the previous year. Nevertheless, the decentralized sectors with their large number of local branches and staff – compared to the latest euro area averages – still dominate the system.

The need for adjustments in the structure of the Austrian banking system has also been reflected in recent resolution and restructuring processes at several Austrian banks. Also, regulatory initiatives, such as the adoption of the Federal Act on the Recovery and Resolution of Banks (BaSAG), the act transposing the new EU bank resolution regime into national law, play an important role.

Given the low earnings-generating capacity and structural weaknesses of the Austrian banking sector, the CESEE business of Austrian banks has become

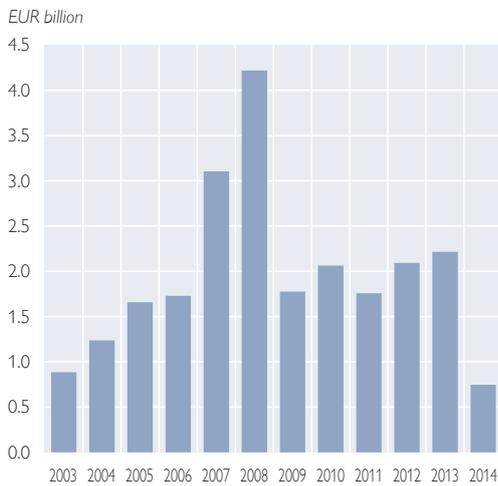
an ever more important contributor to profits. However, as banks are facing domestic and external risks in the CESEE region, Austrian banks are well advised to strengthen their domestic activities and their profitability. Market observers see a certain likelihood that changes in regulations and prolonged weak economic conditions in certain CESEE countries may prompt Western banks to become more selective about their foreign operations. Some banks have already announced that they will focus on core markets that are in a strong position to generate sustainable returns. This strategy includes, among other things, a reduction of risk-weighted assets in selected markets, a lower cost base as well as higher capital buffers. These efforts to adjust business models to new realities and regulatory requirements should be continued.

Austrian banks' subsidiaries in CESEE continued to make a positive contribution to the sector's consolidated net profit in 2014. However, net profits decreased significantly compared to 2013 – from EUR 2.2 billion to EUR 0.7 billion – despite the first time inclusion of profits from banking operations in Turkey in 2014. The sharp decline in net profits was mostly due to increased risk provisioning in Romania, new measures to reduce foreign currency loans in Hungary and the tensions surrounding Russia and Ukraine.

As in the years before, Austrian banks' subsidiaries in the Czech Republic, Russia, Turkey and the Slovak Republic accounted for the largest profit shares. However, net profits posted in Russia went down by 28% year on year. This was mainly due to increased risk costs, which had been on a relatively low level so far. Further negative factors included the sharp depreciation of the ruble and the deterioration of the overall operating environ-

Chart 18

Profits of Austrian subsidiaries in CESEE



Source: OeNB.

ment (i.e. slower lending growth, higher funding costs). The outlook for banking activities in Russia remains weak in 2015, marked by high funding costs, low credit and GDP growth,

pressure on credit quality, profitability and capitalization.

In a longer term comparison, Austrian subsidiaries' net profit registered a historical low in 2014. In general, the outlook for Austrian banks' profitability in the region remains weak on account of the following factors: ongoing uncertainties surrounding Russia and Ukraine; measures aimed at foreign currency loans that have already been or are set to be implemented in several CESEE countries, such as Hungary, Croatia and Poland; and banks' exposure to volatile emerging economies (such as Turkey), particularly in view of a potential monetary normalization in the U.S.A. In the first quarter of 2015, Austrian subsidiaries in CESEE recorded a net profit of EUR 0.6 billion, which is slightly below the figure of 2014. The reduction was driven by lower net interest income and lower fee and commission income, while provisioning and staff costs were also lower.

Box 2

Implications of the low – and partly even negative – interest rate environment for Austrian banks

The currently observed low and nearly flat yield curve is expected to have a negative impact on banks' net interest income, as it reduces the profitability of maturity transformation. Furthermore, the high level of banks' liquid assets in Austria in combination with the ECB's asset purchase program (APP) puts bank profitability under further pressure, exemplified by the yield of 25-year Austrian government bonds dropping by about 2 percentage points to 0.5% between April 2014 and April 2015. So far, there have been few signs that the low interest rates have negatively impacted the net interest income of European banks; margins have even profited from falling funding costs. Over the medium term though, adverse profitability pressures are likely to intensify and risks may accumulate in the financial system when money flows out of deposits into higher-yielding instruments and banks themselves start a hunt for yield by investing in riskier assets.

A more complex question is the impact of negative interest rates. The decision of the Swiss National Bank to lower the target for the Swiss franc three-month LIBOR to a range between -0.25% and -1.25% could have profound implications for Austrian foreign currency loans denominated in Swiss francs and referenced to this rate. The currently clearly negative reference interest rate would for some borrowers result in negative interest payments on their loans. In practice, however, the legal structure of credit contracts makes such reversely

oriented payments difficult. For banks, a zero percent floor on interest payments would widen their margins as they can refinance themselves with negative rates without passing them on to their customers. Depending on how open legal questions are resolved, several scenarios are possible:

- If banks were to be obliged to fully pass on negative rates to their customers, their margins would effectively be left unchanged. They could, however, even decrease, if banks would not be able to actually fund themselves at these negative rates.
- If banks were allowed to limit the nominal interest rate on loans at zero, banks' margins would depend on the negativity of the reference rate. Given that the average margin of Swiss franc loans is 1%, banks would earn the same margins, if the reference rate were between 0% and -1% and higher margins at reference rates below -1%.
- If banks were allowed to introduce a zero percent floor for the reference interest rate, banks would earn their contractual margin (of 1%) plus whatever they receive by financing themselves at negative rates.

Final legal decisions on these issues have yet to be made, but in any case, the effect on profitability remains dependent on the extent to which banks can actually refinance themselves at negative rates.

For more information regarding potential effects of the low interest rate environment on other market participants, such as life insurance companies as well as bond and equity markets, please refer to the dedicated sections at the end of this report.

Credit growth remains positive in 2014 both in Austria and CESEE

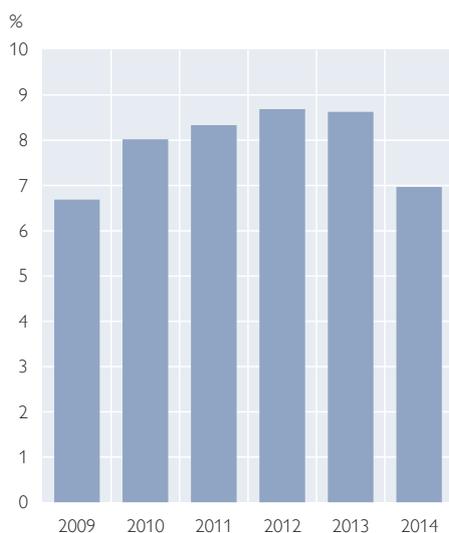
Following a small reduction in the previous year, loans to nonbanks in Austria increased in total by 0.7% year

on year in 2014, with lending having gained momentum especially in the second half of the year. Nevertheless, the overall growth rate was still well below the historical average, also into the first four months of 2015. In absolute terms, Austrian banks granted new loans¹⁶ to domestic customers amounting to EUR 94.1 billion in 2014. Loans for housing purposes remained the main driver of lending to households, whereas new loans for other purposes have declined since 2012. The rise was driven by a strong increase in euro-denominated loans.

Austrian banks' subsidiaries operating in CESEE did not markedly step up lending to customers over 2014. Adjusted for exchange rate effects, the total amount of outstanding customer loans stood at EUR 183 billion, up only 0.3% on an annual basis. It must be noted, however, that 2014 was also marked by significant one-off effects, most notably triggered by the restruc-

Chart 19

Nonperforming loan ratio of Austrian banks¹



Source: OeNB.

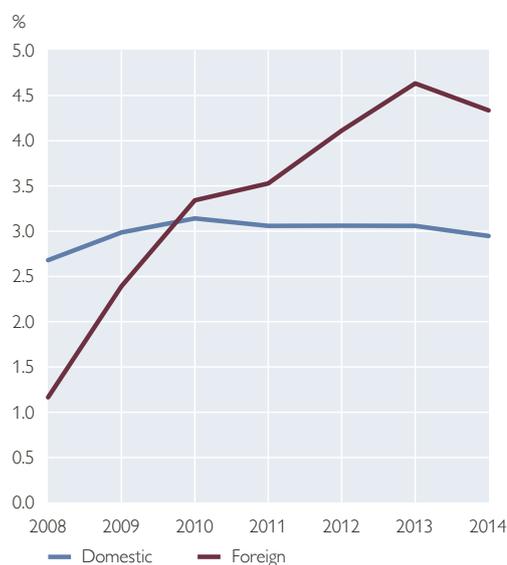
¹ Consolidated nonbank loan portfolio.

¹⁶ Contains all new business loans that are denominated in Euro.

turing of HAA's business in Southeastern Europe. Corrected for these one-off effects, the growth of customer loans was markedly higher at 2.6%. As in previous years, loan growth was heterogeneous across the region: In most countries, banks continued to reduce their gross exposures in 2014, most notably in Hungary and Romania,¹⁷ where customer loans dropped by about 10%.¹⁸ Yet the ongoing expansion of Austrian banks in markets like the Czech Republic, Slovakia, Russia and Turkey more than offset these deleveraging tendencies. Austrian banks' exposure to the latter two are monitored closely, given the Russia–Ukraine conflict and Russia's recessionary economic situation as well as Turkey's rapid credit growth over the past few years.

Although external financing by Austrian nonfinancial corporations via debt instruments was muted in 2014, the amount of outstanding bonds issued by Austrian nonfinancial corporations tripled in absolute terms in the decade between the second quarter of 2004 and the second quarter of 2014. The share of bond issuances as a percentage of external financing increased from 15% to 30%. Despite this strong disintermediation process, banks have posted positive rates of growth of credit to nonfinancial corporations of 8% since the onset of the crisis. This implies that an increasing share of the loan portfolio consists of loans to small and medium-sized enterprises (SMEs). In order to achieve higher market penetration in SME financing, banks might be tempted to decrease interest margins below the costs of capital, liquidity and risk. This in turn could lead to a systemic misallocation of capital and pose

Chart 20
Loan loss provision ratio in Austria by nationality of borrower



Source: OeNB.

a danger to financial stability. Thus, supervisors need to monitor carefully whether banks maintain reasonable interest margins throughout the economic cycle, even when loan demand and quantitative easing put profitability under pressure.

Against the background of weak macroeconomic conditions, Austrian banks have increased their consolidated loan-loss provisions since 2008, especially on account of their CESEE exposure. In 2014, restructuring at Austrian banks whose asset quality is weak picked up speed and led to an improvement in the relevant ratios: At end-2014, Austrian banks reported a consolidated nonperforming loan (NPL) ratio of nearly 7% and a consolidated loan loss provision (LLP) ratio of 4.5%; both ratios are well below 2013 figures (see chart 19 for the reduction in the

Bank restructuring triggers improvement in consolidated asset quality

¹⁷ In Romania, the sale of Volksbank Romania is not yet reflected in the data.

¹⁸ A significant reduction of loan volumes was seen also in Croatia, although mainly caused by HAA's restructuring.

Driven by Hypo Alpe-Adria-Bank's restructuring, credit quality at CESEE subsidiaries is improving

NPL ratio). This improvement mostly reflects the restructuring of HAA, as group-level credit quality at other Austrian banks was stable in 2014. It is still not clear how banks have to handle provisioning needs that have been identified during the ECBs' asset quality review in 2014, because the assessment was to some extent based on valuation rules different from those required by common accounting standards.

The asset quality in banks' domestic (unconsolidated) business was stable in 2014, with the NPL ratio and the LLP ratio standing at 4.4% and 3.3%, respectively. Nevertheless, there are differences in the quality of domestic loans, as provisioning for loans to foreign customers has by far outpaced that for loans to Austrian citizens over the last years (chart 20). As in previous years, the domestic asset quality at Austrian banks reflects a low ratio of problem loans, as banks' domestic assets have proven relatively resilient to the lackluster economic situation and consolidated trends have predominantly been driven by foreign exposures.

Credit quality in Russia is still good, but starting to deteriorate

The aggregate NPL ratio of Austrian banking subsidiaries in CESEE decreased by 2½ percentage points to 11.8% in 2014. Similarly, the NPL ratio for loans denominated in foreign currency fell to 15.7% compared to almost 19% at the end of 2013. Even though this reduction to a large extent stems from the restructuring of HAA, the underlying fundamental development was encouraging, too, as NPL ratios in core markets like Croatia and Romania, which used to be in the mid-twenties, are now below 20%. As indicated above, risks to credit quality in fast growing banking markets like Turkey and Russia – where NPL ratios are still very low – require close monitoring.

Austrian banks' direct exposure to Greece is negligible

The coverage of NPLs has improved significantly over recent years, but even

more so since HAA has shifted the majority of its NPL portfolio to its bad bank (HETA Asset Resolution AG). By the end of 2014, Austrian CESEE subsidiaries reported an aggregated NPL coverage ratio I (provisions relative to NPLs) of 65% and the respective ratio for foreign currency loans was almost similar (64%). The NPL coverage ratio II, which also includes eligible collateral, was substantially higher, mainly due to the high share of mortgage loans. It also improved significantly to 86% for all nonfinancial customer loans and stood at 80% for foreign currency loans.

The year 2014 also saw the leasing portfolio of major Austrian banks operating in CESEE decreasing strongly – to EUR 10 billion – and the share of nonperforming leasing loan volumes fell to 13%, compared with 23% one year ago. Again, this improvement was largely due to the restructuring of HAA.

In the Russian banking sector, in which state-related banks hold a dominant market share of close to 60%, Austrian banking subsidiaries have a market share of about 3%. The volume of outstanding loans of these subsidiaries was about EUR 20 billion at end-2014, 75% thereof were loans to corporates and 25% to households. Due to the strong ruble depreciation, the share of foreign currency loans in total loans increased to 51% (from 36% in the previous year) and they had been extended almost exclusively to corporates. Credit growth registered by Austrian subsidiaries was 7.7% in 2014, mainly driven by corporate loans, but also by consumer loans. While the NPL ratio was still moderate at 4.6%, the volume of NPLs started to rise, although from very low levels.

The prolonged negotiations on the Greek government's financial situation

have sparked a debate on potential spillovers to the European banking sector. Austrian banks reduced their exposure to Greece significantly between 2009 and 2012. At the end of 2014, Austrian banks' ultimate risk exposure to Greece amounted to EUR 116 million, EUR 7 million thereof were claims on

the Greek government. Direct contagion risks from a renewed flare-up of the Greek debt crisis are therefore limited for the Austrian banking sector, but second-round (including confidence) effects are difficult to assess at the current juncture.

Box 3

Implementing an effective framework for NPL resolution in CESEE

The recent boom-bust cycle in several CESEE countries has left local banking systems with a legacy of high volumes of nonperforming loans (NPLs). These NPLs remain a serious burden on balance sheets and often hinder a recovery of banks' profitability and new lending activities. Due to the high market share of foreign banks in the region, this also has negative implications for cross-border banking groups and for entire banking sectors. Besides the direct burden on banks, protracted NPL resolution is a drag on economic growth. Despite previous efforts by banks and the public sector, tackling the issue has proceeded at too slow a pace. Therefore, the European Bank Coordination ("Vienna") Initiative decided to act¹ and coordinate solutions for effective national frameworks for NPL restructuring and resolution.

Two working groups were established in 2011 that focused on the implications of selected regulations and the management of NPL portfolios. The results were then presented and discussed in several fora. To bring new momentum to NPL resolution, a regional NPL action plan was launched in early 2015. Under this plan, country-specific groups – comprising local authorities, local banks, advisors and other insolvency professionals as well as representatives from international financial institution – are asked to work on tailor-made solutions for individual countries. The tasks of these groups are (1) to conduct a stocktaking of obstacles to NPL resolution, (2) to recommend and endorse measures in the areas of regulatory as well as tax and legal changes and (3) to act as a single provider of legal and advisory support. The overall objective is to improve the environment for banks' internal NPL workouts as well as to set up a foundation for outright sales.

The action plan's roll-out started in Croatia and Hungary; some initial meetings have already taken place. Serbia and Albania will be the next focus countries. To ensure continuous progress, the Vienna Initiative will regularly review and discuss the results of national projects.

¹ Vienna Initiative. 2014. Vienna Initiative pushes for action plan to deal with NPLs in central and south-eastern Europe. Press release. September 26, 2014. <http://vienna-initiative.com/wp-content/uploads/2014/10/NPL-Press-Release.pdf> (retrieved on June 15, 2015).

Foreign currency loans decline further despite Swiss franc appreciation

Outstanding foreign currency (FX) loan volumes in Austria continued their downtrend in 2014. However, the recent appreciation of the Swiss franc in mid-January 2015 has both increased the outstanding volume in nominal terms and the funding gap between re-

payment vehicles and redemption amounts.

The stepped-up supervisory efforts aimed at curbing FX lending have proven effective. FX loans to domestic nonbank borrowers have steadily declined since October 2008. In April 2015, the volume of outstanding FX loans amounted to EUR 38.6 billion, which means a drop of 58% since

October 2008 on an exchange rate-adjusted basis.

In April 2015, FX loans to households made up 70% or EUR 27.1 billion of FX loans to domestic borrowers and EUR 6.8 billion were FX loans outstanding to nonfinancial corporations. Three out of four FX loans to domestic households were bullet loans linked with a repayment vehicle, i.e. an investment – e.g. a life insurance policy – which is used to repay the principal of the loan at the end of the term.

In order to get a read on the funding gaps of repayment vehicle loans the FMA and the OeNB conducted a survey in early 2015 – an update of the surveys of 2009 and 2011. The survey covered 35 banks that account for more than 85% of outstanding FX loans which have to be repaid (fully or in part) via repayment vehicles. The results revealed that the aggregate funding gap of FX repayment vehicle loans amounted to 14% of the outstanding amount – or EUR 3.3 billion – at end 2014. This would constitute a reduction from the June 2011 numbers both in relative terms (2011: 20%) and in absolute terms (2011: EUR 5.8 billion). However, if the appreciation of the Swiss franc vis-à-vis the euro by 15% between December 31, 2014, and April 30, 2015, is factored in, the funding gap will widen to an estimated 23% or approximately EUR 6 billion.

The distribution of systemic risks arising from FX lending to domestic borrowers has changed over the past few years: The outstanding volumes of FX loans as well as the number of FX borrowers have declined strongly. At the same time, the funding gaps – taking into account the recent Swiss franc appreciations – have increased in relative and absolute terms. Another source

of risk is the asset valuation in repayment vehicles, the majority of which has benefitted from the asset price surges in financial markets spurred by low interest rates in major world economies over recent years. These asset valuations might erode, however, when financial markets turn, which would widen funding gaps even further. And although the majority of FX bullet loans will mature only after 2019, hoping for FX markets to turn for the better is a risky strategy and issues should be proactively addressed by borrowers and their banks.

In line with the ongoing downward trend of FX lending in Austria, Austrian banks have continued to reduce their FX loan exposure in CESEE. The total FX exposure (including direct and indirect lending as well as leasing) of Austrian banks in CESEE had decreased to EUR 116 billion by the end of 2014, supported by the restructuring of HAA (see chart 21). The associated FX loan share was 49% for the Austrian banks and their subsidiaries taken together and 42% for their CESEE subsidiaries.

The biggest contribution to this notable decline came from cross-border direct lending, which dropped by almost 15% year on year. FX lending via subsidiaries decreased further to EUR 77 billion (–2.9% year on year or –5.4% year on year adjusted for exchange rate effects). FX leasing in CESEE amounted to EUR 3.9 billion at the end of 2014.

Although these figures seem quite encouraging it should be pointed out that more than half of the reduction in FX lending of Austrian subsidiaries and basically the entire reduction in the FX leasing exposure was due to the restructuring of HAA.

Swiss franc appreciation widens funding gaps of FX bullet loans

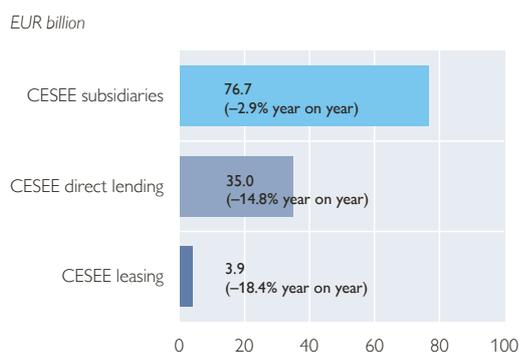
FX exposure in CESEE declines markedly but FX share in total loans remains close to 50%

Chart 21

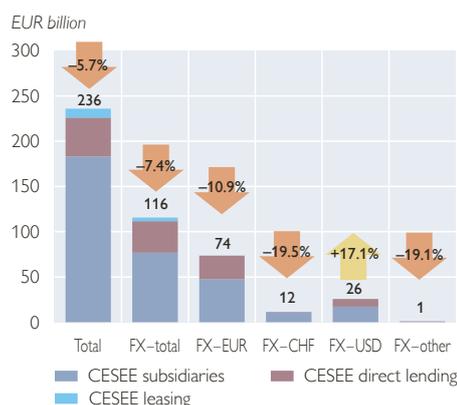
CESEE credit and leasing exposure denominated in foreign currency at the end of 2014

Foreign currency exposure of Austrian banks in CESEE

(growth rates from Q4 2013 to Q4 2014)



CESEE credit and leasing exposure by type and currency



Source: OeNB (all figures are not exchange rate adjusted).

The reduction in the overall credit exposure toward CESEE was driven particularly by a significant reduction in FX loans denominated in euro and Swiss francs. However, growing U.S. dollar lending, especially in Russia and Turkey, in connection with the appreciation of the U.S. dollar in 2014 has partly offset this development. To date it seems unlikely that borrowers are able to significantly mitigate the risk associated with an increasing U.S. dollar exchange rate by either natural or financial hedges, as most corporate customers do not seem to have enough income in U.S. dollars.

The decision of the Swiss National Bank (SNB) to remove the EUR/CHF peg in January 2015 did not only directly increase the notional amounts denominated in Swiss francs, it also fueled a wave of regulatory action concerning FX loans in several CESEE countries. Both new regulatory measures and those taken in the past pose a

challenge to Austrian banks. While a forced conversion of households' FX mortgages took place in Hungary, the Croatian parliament passed a temporary exchange rate fixing for Swiss franc-denominated mortgage loans, which is set to last one year. Despite actively discussing various approaches, Polish regulators have not yet taken specific action.

Liquidity levels at Austrian banks reach record high

Continuous inflows of deposits and low credit demand have pushed up Austrian banks' liquidity levels to a record high. On April 17, 2015, the aggregate counterbalancing capacity of the Austrian banking system (maturities of up to three months without money market operations) stood at EUR 143 billion, up from EUR 131 billion a year ago.¹⁹ At the same time the corresponding cumulated net funding gap decreased to EUR 6.9 billion from EUR 8.8 billion.

Regulatory measures to reduce burden for FX borrowers in CESEE

¹⁹ Based on the weekly liquidity reports submitted by the largest 30 banks in the system, which account for about 85% of total assets.

Banks have addressed excess liquidity by reducing own issuances. Over the past year the stock of outstanding short-term and long-term bank issuances decreased by more than 7% to EUR 200 billion. This leaves banks with sufficient room to adjust to a more challenging issuing environment, as spreads have widened in the aftermath of the Heta moratorium adopted on March 1, 2015.²⁰

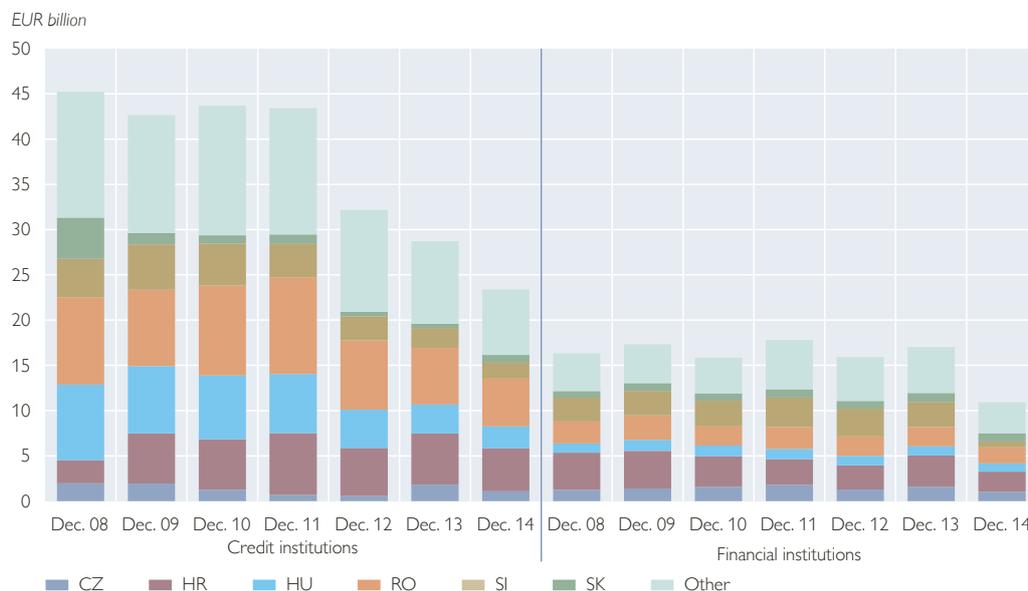
Local funding position of foreign subsidiaries improves further

The Austrian ‘Sustainability Package’ adopted by the OeNB and the FMA in 2012²¹ stipulates that the stock and flow loan-to-local stable funding ratios (LLSFRs) of foreign subsidiaries of Austria’s three largest banks be monitored. This measure was introduced based on Austrian supervisors’ experience that banking subsidiaries which had entered the recent financial crisis

with high LLSFRs were significantly more likely to exhibit higher loan loss provisioning rates than other subsidiaries that followed a more conservative business and growth model. Therefore, banking subsidiaries with stock LLSFRs above 110% are considered to be “exposed” and the sustainability of their loan growth has to be monitored more closely. The stock LLSFRs of the monitored subsidiaries have shown a welcome trend in 2014. Most subsidiaries saw their stock LLSFR declining or stabilizing, which points to an improved local stable funding position. At the end of 2014, only one out of 35 subsidiaries was both exposed in terms of its elevated stock LLSFR and had an unsustainable flow LLSFR over the past twelve months, which qualifies this subsidiary’s business model as un-

Chart 22

Intragroup liquidity transfers of Austrian banks to their CESEE subsidiaries



Source: OeNB.

Note: Financial institutions also cover leasing activities, for example.

²⁰ http://www.heta-asset-resolution.com/sites/hypo-alpe-adria.com/files/content/announcement/file_download/k3505-heta_brief-zahlungsstop_beilage_bescheid-eng.pdf (retrieved on June 15, 2015).

²¹ For more details, please see <http://www.oenb.at/en/Financial-Stability/Systemic-Risk-Analysis/Sustainability-of-Large-Austrian-Banks--Business-Models.html> (retrieved on June 15, 2015).

sustainable (according to the relevant supervisory guidance). Another three subsidiaries exhibited an elevated stock LLSFR, but a positive trend in their new business.

Data also show that the volume of intragroup liquidity transfers to CESEE was substantially reduced in the course of the financial crisis (see chart 22), which reflects the increased importance of local funding sources. This re-

duction of subsidiaries' dependence on intragroup liquidity was particularly pronounced for credit institutions (as gross liquidity recipients), where volumes fell by close to one-half between end-2008 and end-2014. At the same time liquidity transfers to financial institutions (e.g. leasing companies) were reduced by one-third. Again, the restructuring of HAA contributed markedly to this development.

Intragroup funding continues to decline in importance

Box 4

The new legal framework for deposit guarantee schemes (DGS)¹

The new Austrian law on deposit guarantees and investor compensation (*Einlagensicherungs- und Anlegerentschädigungsgesetz, ESAEG*) will transpose the EU Directive on Deposit Guarantee Schemes (DGSD) into national law.² Together with the Single Supervisory Mechanism (SSM) and the Bank Recovery and Resolution Directive (BRRD), the DGSD is the third pillar of the European banking union.

Under the current framework, there are five different deposit guarantee schemes in Austria. The total amount of covered deposits under these schemes was EUR 192 billion at the end of 2014 (table 1).

Table 1

Deposit guarantee scheme	Covered deposits	Covered investment services	Total assets
	EUR billion		
Joint stock banks	43.4	4.7	197.5
Savings banks	61.7	8.6	284.3
State mortgage banks	6.2	0.5	63.2
Raiffeisen	65.7	4.5	271.3
Volksbanken	15.1	1.3	45.4
Total	192.1	19.6	861.7

Source: OeNB.

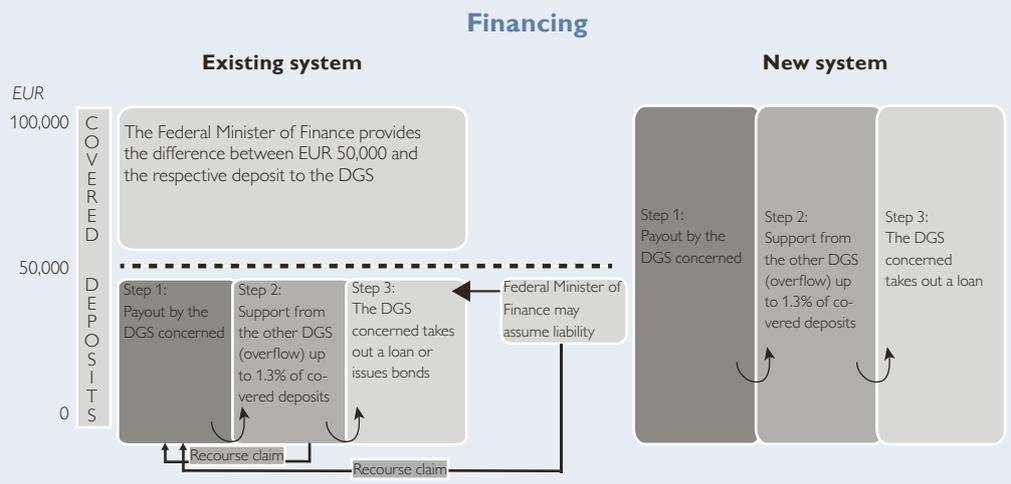
The ESAEG provides for substantial amendments to the current framework that will strengthen the protection of deposits in Austria. While the coverage level remains EUR 100,000 per depositor and credit institution, the group of covered depositors will be extended (to include, e.g., large nonfinancial companies); also, deposits in foreign currencies will be included. To ensure a timely payout and reduce procyclical effects, credit institutions will be required to pay annual risk-based contributions to build up ex-ante funds of at least 0.8% of covered deposits by mid-2024 (part of which can be payment commitments). If the ex-ante fund of a DGS is not sufficient to finance a payout, ex-post contributions of up to 0.5% of covered deposits may be raised within the DGS concerned. It is only then that other national DGS are required to provide their financial means (overflow from one national scheme to the others). Finally, as a last resort, the deposit guarantee scheme concerned may take out a loan.

¹ Editorial close: June 15, 2015. The draft ESAEG will be finalized with the Austrian parliament adopting the act in July 2015.

² Investor compensation provisions remain unchanged (including the coverage level at EUR 20,000).

Funding will be exclusively provided by credit institutions. Government involvement in financing a payout is no longer part of the legal framework (chart 1). This set-up will reduce negative incentives for the banking sector (“moral hazard”) and remove the contingent liability from the federal budget.

Chart 1



To strengthen depositor confidence, the payout period will be gradually reduced from 20 to 7 working days by 2024. In addition, the existing complex structure comprising five national deposit guarantee schemes will be changed, as only one common scheme is foreseen to be in place as of 2019. Additionally, institutional protection schemes (IPS) may be recognized as DGS.

The financial means of DGS will be used not only to repay depositors but also in the context of a credit institution’s resolution, provided that depositors have continuous access to their deposits during resolution. According to the Austrian legal act to implement the BRRD, the liability of a DGS in connection with a bank in resolution is limited to 0.4% of covered deposits (50% of the target level of the ex-ante funds). An IPS that has been recognized as a DGS may use the available financial means for alternative (e.g. recovery) measures as well. The FMA is designated to supervise DGS in cooperation with the OeNB to ensure compliance with the new rules.

The new legal framework for DGS improves financial stability in Austria, as funds for deposit payouts are now collected in advance, the coverage level will be maintained and credit institutions are required to take full responsibility for the financing of deposit payouts without having recourse to public funds.

Ultra-low interest rate environment – no clear-cut evidence of acute cyclical risks

What are the financial stability implications of monetary policy rates close to or even below zero and the balance sheet expansion of central banks around the world by a total of about EUR 10

trillion? There is no clear-cut answer to this question. On the one hand, higher growth could reduce defaults and reduce losses given default. On the other hand, the search for yield might lead to excessive risk taking and the mispricing of risk across the financial system. This in turn would lead to the

Chart 23

Selected European 10-year sovereign bond yields



Source: Bloomberg.

misallocation of capital, lower medium- to long-term growth and increasing systemic risk.²²

Since the sovereign debt crisis in 2012, European sovereign bond spreads have contracted. Chart 23 shows the alignment of sovereign bond yields of Austria, Germany, Spain and Italy with the introduction of the euro; the U.K. is shown as an example of a non-euro area EU country. From 2000 until the collapse of the investment bank Lehman Brothers (in September 2008), sovereign bond yield spreads (the difference between a country's sovereign bond yield and the German sovereign bond yield) remained low. For Italy, it was negative (average -0.31 basis points), for Austria and Spain, it amounted to 12 basis points. These low spreads were unlikely to reflect the actual credit quality of the sovereigns. With the onset of the financial crisis, bond yields started to diverge. The spreads for Austria remained relatively small, at an average of 51 basis points, while those of Italy and Spain spiked to 456 basis points (in December 2011)

and 552 basis points (in August 2012), respectively. By April 2015 (after the ECB's public sector purchase programme started in March), these spreads had fallen back to 11 basis points for Austria, 113 basis points for Spain, and 97 basis points for Italy. Despite this significant spread compression, the levels are now well above their pre-crisis minimum levels.

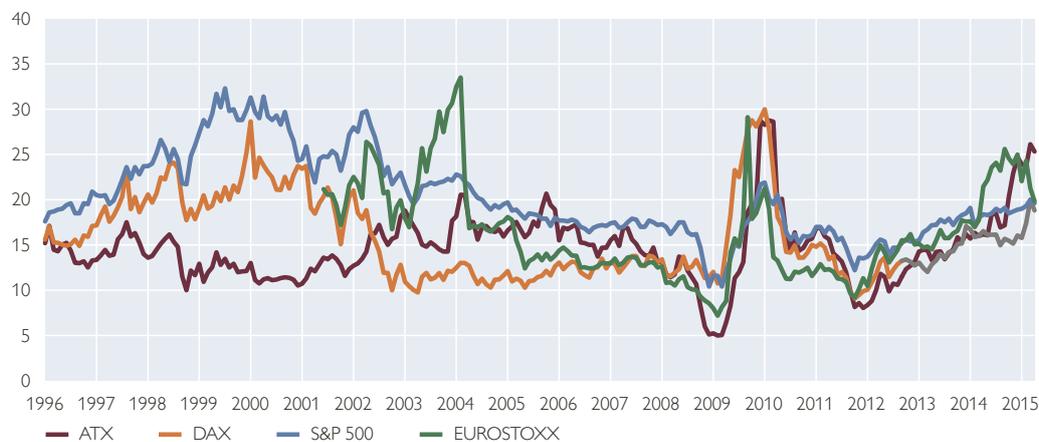
Similar dynamics were observable in the corporate bond market. Like sovereign bond yield spreads, high-yield bond spreads remained²³ narrow during the pre-crisis period 2002 to 2007 (at an average of 500 basis points). With the onset of the financial crisis and previously mispriced risks materializing, high-yield bond spreads suddenly and dramatically increased (a maximum spread of 1,950 basis points was reached in the first quarter of 2009). By mid-2014, the spread was almost as low as at its minimum in the third quarter of 2007 (261 basis points versus 234 basis points). Over the past few months, this trend has reversed slightly: The spread increased continuously and reached

Initial signs of a potential build-up of asset price bubbles

²² The risks of a misallocation of funds due to a search for yield were also recently highlighted by the IMF (see global financial stability report, April 2015) and the ECB (see financial stability review, May 2015).

²³ The high yield bond spread is defined as the difference between the Pan-European High Yield Index of the least creditworthy borrowers and Thomson Reuters AAA rating corporates' 10 years benchmark yield.

Price-to-earnings ratios of selected equity indices



Source: Thomson Reuters.

380 basis points in the first quarter of 2015, pointing to slightly higher risk aversion.

Overall, stock markets showed an upward trend over the past few years. In order to assess the cyclical dynamics of equity markets, we look at the price-earnings ratio (P/E ratio) as a useful indicator of the potential build-up of an overvaluation of equity prices (“equity bubble”). In chart 24, the P/E ratio for several equity indices shows a (slight) tendency of overvaluation since the beginning of 2014, especially for the ATX and the EUROSTOXX. Before the recent financial crisis, the average P/E ratio of the ATX was 16;²⁴ it increased almost up to 29 in 2010, declined strongly to 8 in 2012 and has continuously been increasing since then, reaching a level of 25 in April 2015.

In sum, there are initial signs of a potential build-up of asset price bubbles in bond and equity markets. Macroprudential policy can complement monetary policy by addressing its unintended consequences for financial stability. However, macroprudential instruments (e.g. the countercyclical capital buffer²⁵) only address cyclical systemic risks arising from the banking sector and there is still a lack of instruments for the nonbank financial sector.²⁶ These instruments would need to be well designed to capture risks arising from financial markets.

Low interest rates remain the key risk for life insurers offering guaranteed interest rates

A prolongation of the low yield environment and weak macroeconomic

²⁴ A P/E ratio of 16 means the price of a share is equivalent to 16 times its past yearly earnings. As the multiple is based on past earnings (not expected), the P/E ratio has a cyclical component: In an upward phase, expected earnings are reflected in the price but not yet shown in the past earnings.

²⁵ This buffer focuses on excessive bank credit growth and cannot address the systemic mispricing of risks in financial markets.

²⁶ See the speech by ECB Vice-President Vítor Constâncio “Is financial regulation holding back finance for the global recovery?” Washington, D.C. April 16, 2015. <http://www.ecb.europa.eu/press/key/date/2015/html/sp150416.en.html> (retrieved on June 15, 2015).

conditions remain the key risks for the insurance sector. Low profitability inducing a risky search for yield and a potential re-emergence of the sovereign debt crisis are further sources of risks for the sector. Even so changes in the asset allocation of Austrian insurance companies (chart 25) suggest derisking rather than an increase in credit risk.

The European Insurance and Occupational Pensions Authority (EIOPA) ran a stress test, including a low-yield scenario, in 2014. The results have shown that the key vulnerability of the European insurance sector is the so-called “double hit:” first, insurers are particularly vulnerable to an abrupt fall in global asset prices as a result of a reassessment of risk premiums and/or a new sovereign debt crisis; second, an extended period of low risk-free interest rates poses a challenge to insurers. Low risk-free rates increase the value of insurers’ long-term liabilities but

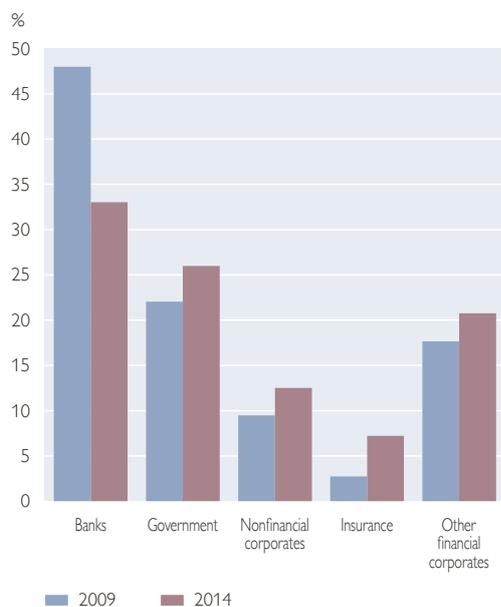
also that of their investments, but compress the margins between guaranteed returns in life policies and newly bought low-risk assets. The insurers affected most by the low interest rate scenario in the stress test were those with a significant mismatch in duration and returns between assets and liabilities (i.e. liabilities are “longer” than assets and/or guarantee rates are above the return rates of assets) and life insurance businesses with long-term guarantees. On the country level, Austria, Germany, Sweden and Malta are the countries that were found to be most exposed to the risks of the current low interest rate environment in the stress test.

Insurance companies are also faced with regulatory challenges, as they have to prepare for compliance with the legal provisions of Solvency II and its new capital requirements that enter into force in 2016. Chart 25 shows how Austrian insurance companies modified

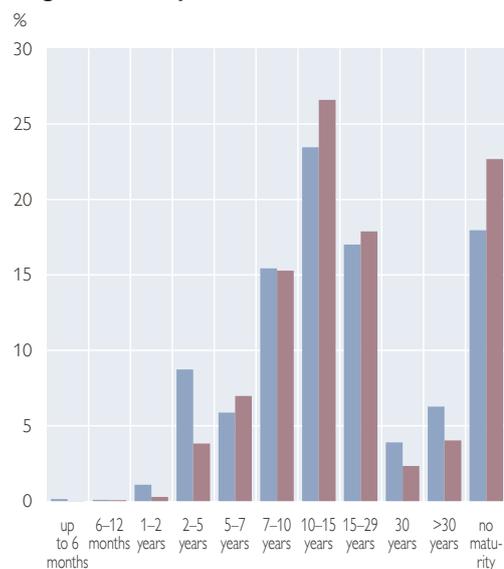
Chart 25

Considerable changes in investment behavior of Austrian insurance companies

Asset allocation of insurers’ investments in securities



Insurers’ investments in securities by original maturity



Source: OeNB.

EMIR license for
CCP Austria
granted in 2014

their investment behavior in the post-crisis and pre-Solvency II environment.²⁷

From end-2009 to end-2014, the securities investments of Austrian insurance companies show a notable shift away from investments in bank securities (–15 percentage points) toward government bonds²⁸ (+4 percentage points), nonfinancial corporations (+3 percentage points) and other financial corporations, including insurers (+8 percentage points). Overall, the share of investments in the financial sector (banks, insurance and other financial corporates taken together) in insurers' total investments decreased from 68% to 61%; in other words, the portfolio's dependence on the financial sector has decreased, but is still high.

Insurers also adjusted their investments' maturities, moving away from short (2–5 years) and very long maturities (30 years, more than 30 years) toward the 10–15 years maturities band, as the low yield environment makes short-term securities particularly unattractive and investing in very long running assets holds the risk of missing potential interest rate rises.

Summing up, the low interest rate environment has been identified as a crucial risk for the insurance sector over the medium term. Even though the FMA has already introduced additional provisioning requirements that will have to be built up over the next years (depending on an individual company's (stock) guaranteed interest rate and a benchmark interest rate), close monitoring remains essential and further regulatory action on a European and domestic level should be considered to avoid negative effects on financial stability in due time.

A new legal framework for financial market infrastructures

Payment and securities settlement systems have also been subjected to numerous new legal requirements adopted at the European level, especially regarding financial market infrastructures, i.e. central counterparties (CCPs) and central securities depositories (CSDs). In Austria, the CCP Enforcement Act (Zentrale Gegenparteien Vollzugsgesetz – ZGVG) transposes the European Market Infrastructure Regulation (EMIR) into national legislation. The ZGVG, which was enacted in 2013, establishes the FMA and the OeNB as supervisors of CCPs with shared responsibilities. On this basis, the sole Austrian CCP – CCP Austria Abwicklungsstelle für Börsengeschäfte GmbH – was granted a CCP license in mid-2014.

The CSD Enforcement Act (Zentralverwahrer Vollzugsgesetz – ZvVG), which implements the CSD Regulation in Austria, is expected to enter into force in 2015 and takes the idea of the above mentioned ZGVG further. Against this background, Central Securities Depository Austria, the sole national CSD, will have to apply for a CSD license, which will be required under the new law.

Furthermore, the going live of TARGET2-Securities (T2S) in mid-2015 is closely monitored by the ECB – in its capacity as lead overseer of T2S – in cooperation with the competent national supervisors and overseers of the participating CSDs. The migration of Central Securities Depository Austria to T2S is scheduled for the third migration wave in September 2016.

²⁷ However, these data have been subject to several inconsistencies so that sound conclusions have to be based on further investigation.

²⁸ Including regional and local governments.

New Austrian bond yield index UDRB introduced on April 1, 2015

For more than three decades, the indices for secondary market yields (SMR) had been published broken down by groups of issuers. Government bonds were the most important group as the SMR indices were weighted by the volume outstanding. Hence, the government bond SMR (“SMR Bund”) also dominated the overall SMR (“SMR Emittenten gesamt”). Trading in government bonds at the Vienna stock exchange has decreased over time and therefore the data base for the SMR calculation has shrunk over the years. The Oesterreichische Kontrollbank AG (OeKB) stopped calculating and publishing the SMR at end-March 2015. However, discontinuing the publication of secondary market yields was deemed undesirable as references to the SMR exist in many financial contracts, like bank loan agreements, often as a requirement under federal or provincial law.

Although it has been under no legal obligation to calculate or publish the SMR up to now, the OeNB offered to calculate and publish the “average government bond yields weighted by outstanding amounts” (Umlaufgewichtete Durchschnittsrendite für Bundesanleihen, UDRB) replacing the SMR from April 2015.

The transition from SMR to UDRB is set out in the federal law on the determination of weighted average yields on government bonds. According to the underlying law, the UDRB will succeed the SMR indices “central government,” “domestic issuers” and “domestic nonbanks” as well as “issuers total.”

SMR indices can no longer be used as reference interest rates in new contracts. In contracts concluded up to the end of March 2015 that use SMR indices as reference interest rates, the SMR must be replaced by the UDRB unless the contracting partners have agreed or agree otherwise. The SMR index for “domestic banks” issuances is exempt from this change; the OeKB will continue to make it available until the end of June 2015. A replacement for the SMR index for domestic banks’ issuances has not been provided for by law. As a consequence, any succeeding indicators must be agreed upon individually by the contracting partners.

The average government bond yields weighted by outstanding amounts reflects an average of the secondary market yields of individual government bonds, weighted by the volume outstanding according to the applicable redemption schedule. The individual yields are based on transaction data reported to European supervisory authorities according to the MiFID. These data are then provided by the FMA to the OeNB on a transaction level. Instead of solely reflecting the illiquid official market at the Wiener Börse including Europe, however, MiFID data ensure broader market coverage. Instruments must fulfill the following criteria in order to be included in the calculation of UDRB: They must be denominated in euro, have a fixed yield and a residual maturity of more than one year.

While the SMR was published daily, the UDRB will be published once a week (for every business day of the preceding week). The monthly, quarterly and annual figures are based on the arithmetic mean of the calculated trading-day figures. The OeNB publishes every Friday the UDRB trading day figures of the previous week. For additional information, please refer to <http://www.oenb.at/en/Statistics/Standardized-Tables/interest-rates-and-exchange-rates/austrian-government-bond-yields.html>.

OeNB assessment and recommendations

The Austrian banking system returned to profitability in 2014, albeit aided by the restructuring of HAA, but several of its structural issues prevail and need to be resolved in order to sustainably increase the system’s stability. The per-

sistently weak earnings situation in Austria and substantially reduced profits of CESEE subsidiaries have hindered internal capital generation, which came to a halt in 2014, with the largest banks’ capital ratios still well below their peers’. And while asset quality indicators show first signs of improvement, as

several banks started overdue restructuring processes, new challenges have emerged over the past few months: Ultra-low interest rates in Europe – that are linked to extraordinary monetary policy measures, including the ECB’s quantitative easing – may adversely impact banks’ operating profits over the medium term, and the sudden appreciation of the Swiss franc could have negative effects on foreign borrowers’ creditworthiness. On the regulatory front, the Federal Act on the Recovery and Resolution of Banks (BaSAG) and the proposed new legal framework for deposit guarantee schemes (ESAEG) are important milestones in the completion of the European banking union, while recommendations by the Financial Market Stability Board (FMSB) underpin purposeful macroprudential policies in Austria. Although this welcome paradigm shift creates short-term uncertainties in financial markets, it will ultimately improve financial stability in the long run by providing adequate tools when dealing with troubled banks. Regarding other financial intermediaries, low interest rates remain the key risk to life insurers offering guaranteed interest rates. With all these issues in mind, the OeNB recommends that the following action be taken:

- Banks should continue to strive for capital levels that are commensurate with their risk exposures. Systemic risks caused by a bank’s size,

interconnectedness and emerging market exposure should be addressed by means of the systemic risk buffer (SRB) and the buffer for other systemically important institutions (O-SII) as proposed by the FMSB.

- The still difficult profitability situation requires active cost management and risk-adequate pricing.
- The close monitoring of risks related to foreign currency loans and loans with repayment vehicles remains important. Against the background of increased funding gaps and risks regarding repayment vehicle values, banks and customers should assess the latter’s risk-bearing capacity and take risk-reducing measures if deemed necessary.
- At to CESEE subsidiaries, the resolution of nonperforming assets is crucial and ongoing initiatives to deal with legacy issues should be proactively pursued. Banks should also continue to strive for sustainable loan-to-local stable funding ratios at the subsidiary level and for risk-adequate pricing of intragroup liquidity transfers.
- The effects of the ultra-low interest rate environment are still difficult to assess, but banks and insurance companies may need to adapt their business models to this challenging environment.
- Insurance undertakings should continue to prepare for Solvency II.

Special topics

The profitability of Austrian banks' subsidiaries in Croatia, Hungary and Romania and how the financial crisis affected their business models

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Croatia, Hungary and Romania are core host markets for Austrian banking groups. While Austrian banks' subsidiaries in these countries were facing similar challenges at the onset of the financial crisis, their profitability has been very heterogeneous since then. In this study we analyze the reasons for these diverging paths, starting off with a brief overview of banks' competitive environment and cost structures and then examining the particular pressure on banks' net interest income and its margin since 2010–11. Finally, we analyze credit quality and provisioning levels. We find that operational cost efficiency at the subsidiaries under review did not differ substantially from that of the peer group, but that net interest income, which is by far the most important profit source, has been under particular pressure and that high volumes of nonperforming loans (including those in foreign currency) continue to weigh on balance sheets. Moreover, we see that striking changes in the funding models of these subsidiaries have taken place, as they steered away from intragroup funding and increasingly turned toward local funding sources. In several of these aspects, Austrian subsidiaries in Hungary and Romania faced higher pressures to adapt their business models than their peers in Croatia, where subsidiaries still have not increased provisioning to higher regional coverage levels.

JEL classification: G01, G21

Keywords: Banking, financial crisis, Austrian banks, bank profitability, net interest margin, credit risk, foreign currency loans, intragroup funding, Croatia, Hungary, Romania, CEE

When the financial crisis reached Central, Eastern and Southeastern Europe (CESEE) in 2009, Austrian banks' subsidiaries in Croatia, Hungary and Romania had total assets of more than EUR 93 billion (at end-2008), which represented more than one-third of all Austrian banking assets in the region.² At this time, these subsidiaries were faced with common challenges: In all three host countries, lending had been

mostly in foreign currencies, orderly deleveraging set in, subsidiaries changed their funding models by reducing their dependence on liquidity transfers by parent banks, and the low interest rate environment started to affect asset yields and funding costs.³ However, despite the similarities, it turned out that these subsidiaries fared rather differently until the end of 2014: While their aggregate total assets declined by 8% to

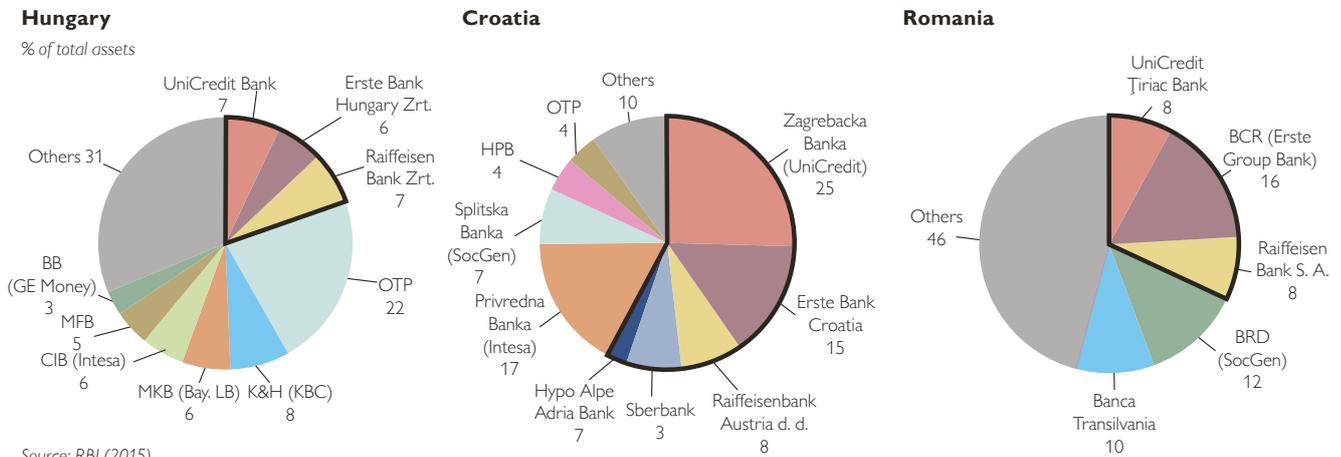
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² The CESEE peer group used in this study comprises Austrian banks' subsidiaries in Albania, Belarus, Bosnia and Herzegovina, Bulgaria, the Czech Republic, the former Yugoslav Republic of Macedonia, Montenegro, Poland, Russia, Serbia, Slovakia, Slovenia and Ukraine; it does not include Austrian subsidiaries in Kazakhstan, Kyrgyzstan, Latvia, Kosovo and Turkey, for which no continuous time series exist over the entire time period under consideration. Given its dynamic nature (e.g. banks exiting certain markets), this peer group had a changing composition over time.

³ Given that no single bank data are published in this study, the analysis is based on aggregate data for Austrian subsidiaries in the countries discussed and it is therefore not necessarily indicative of figures and trends at the individual bank level. Also, it has to be noted that while the bank sample in the three countries remained stable, Hypo Alpe-Adria-Bank International AG was not active in Hungary and Romania and its restructuring therefore only affected data for Croatian subsidiaries.

Chart 1

Banks' market shares by the end of 2014



Source: RBI (2015).

EUR 86 billion since the end of 2008 (other Austrian CESEE subsidiaries: +2%), it is the subsidiaries in Hungary (-25%) and in Romania (-6%) that shrank in size, while growth continued in Croatia (+7%). Also, profitability levels diverged considerably: While Croatia remained a profitable host market throughout the crisis, substantial losses occurred in Romania and Hungary. At first glance, one might therefore wonder why Croatia has been included in this study. The reason is that all three countries belong to Austrian banks' core markets and nonperforming loan ratios there are still high (around 20%); but while subsidiaries in Hungary and Romania have been addressing this issue aggressively over the last few years (which resulted in substantial losses) and the economic situation is finally improving in these countries, in Croatia coverage levels lag their peers' and the macroeconomic environment remains challenging. Notwithstanding their differences, we therefore chose to analyze Austrian subsidiaries' profitability in these countries together in this study. We first

focus briefly on the competitive environment and cost structures, then take a close look at net interest income and margins, to finish with thoughts on credit quality and provisioning. This study also concludes a recent series on Austrian subsidiaries that covered those in Russia, Turkey and Ukraine as well as the Czech Republic and Slovakia.⁴

1 Competitive environment and cost structures

At the end of 2014, Austrian banks' subsidiaries had a combined market share of 58% in Croatia, 20% in Hungary and 32% in Romania. A comparison of the competitive environment reveals that market structures are quite heterogeneous in these three countries. In Croatia and Romania, subsidiaries of UniCredit Bank Austria and Erste Group Bank, respectively, are the market leaders, while the Hungarian banking market is dominated by locally-owned OTP Bank (see chart 1). The comparably high degree of concentration of the Croatian banking market is highlighted by the top three banks' market share of 57%, which is signifi-

⁴ For further information, please refer to Wittenberger et al. (2014) and Kavan and Widhalm (2014).

Chart 2

Cost-income ratios of Austrian banks and their subsidiaries



Source: OeNB.

cantly higher than Hungary's and Romania's values of 37% and 38%. From a historical perspective, the Hungarian and Croatian banking sectors are getting increasingly concentrated, while the Romanian market is trending toward greater dispersion.

Contrary to economic theory, operational efficiency did not benefit from higher market concentration: The cost-income ratio (CIR) was broadly stable from 2008 to 2014 and did not diverge substantially from the CESEE average. The situation clearly worsened, however, in 2014, as Hungarian legislative measures resulted in Austrian subsidiaries in Hungary reporting an aggregate operating loss, and operating income in Romania was negatively affected by restructuring measures. In Croatia, the CIR did not change significantly and remained close to that of the CESEE peer group (see chart 2).

So although market structures are diverse in the three observed countries and Austrian banks' subsidiaries take up varying market shares, their operational efficiency (excluding one-off effects) did not differ substantially from that of their CESEE peer group; at close to 50%, the CIR of Croatian, Hungarian and Romanian subsidiaries has re-

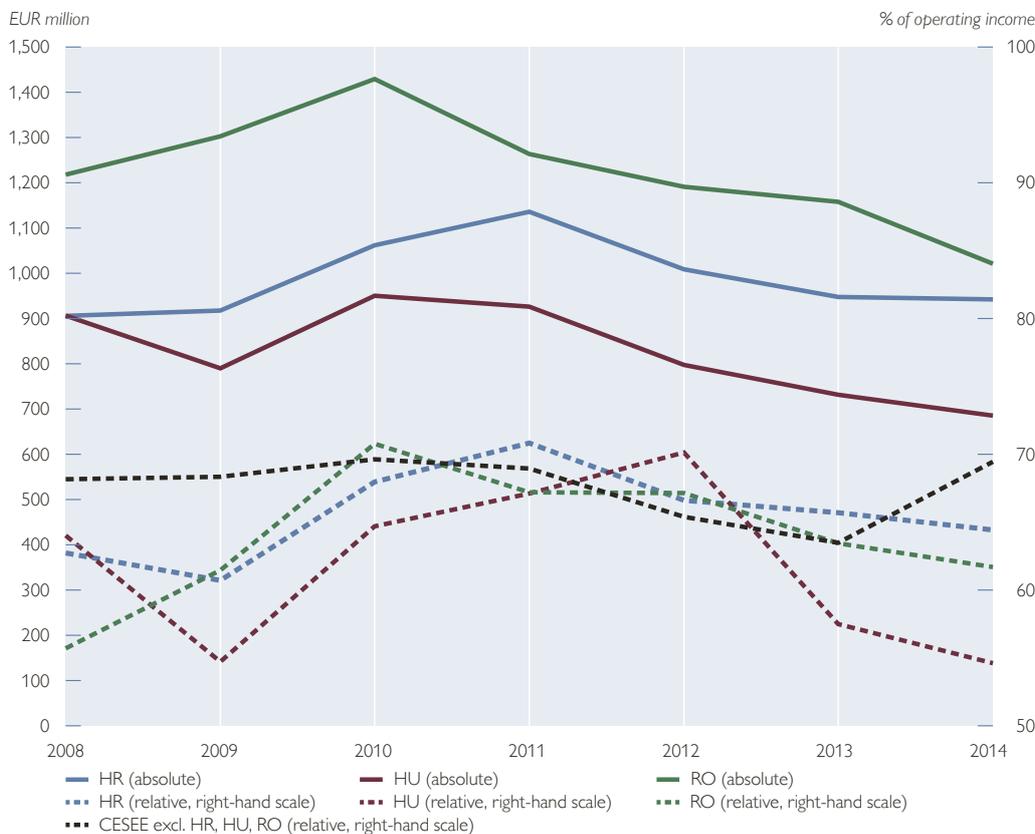
mained broadly stable and substantially below the level recorded in the banks' Austrian home market.

2 Operating income and net interest margin

Taking a closer look at the operating income of Austrian subsidiaries in Croatia, Hungary and Romania from 2008 to 2014, we see that it was clearly dominated by net interest income, whose average share was 66% in Croatia, 62% in Hungary and 64% in Romania. While the income split of Austrian subsidiaries in Croatia – with fee income accounting for 21% and (volatile) trading income for 2% – was fairly similar to the one in other CESEE host countries, subsidiaries in Hungary and Romania had a substantially higher share of trading income (8% and 7%, respectively). In absolute terms, the subsidiaries saw their net interest income peak in 2010 (2011 in Croatia) and decline strongly since then: the decrease until 2014 was –17% in Croatia, –28% in Hungary and –29% in Romania, a trend that was accompanied by a decreasing share of net interest income in overall operating income, pointing to particular pressure on this income item (see chart 3).

Chart 3

Net interest income in absolute and relative terms



Source: OeNB.

2.1 Adverse margin and volume pressures affect net interest income

In order to explain this adverse pressure, we analyze the drivers of net interest income in two ways: first, by simple income decomposition, and second, by using a more granular approach to understand the interplay between the asset and liability pricing of subsidiaries' balance sheets. To start, we look at net interest income as the product of the net interest margin before risk (NIM, defined as net interest income over average total assets)⁵ and average total assets (given that the vast majority

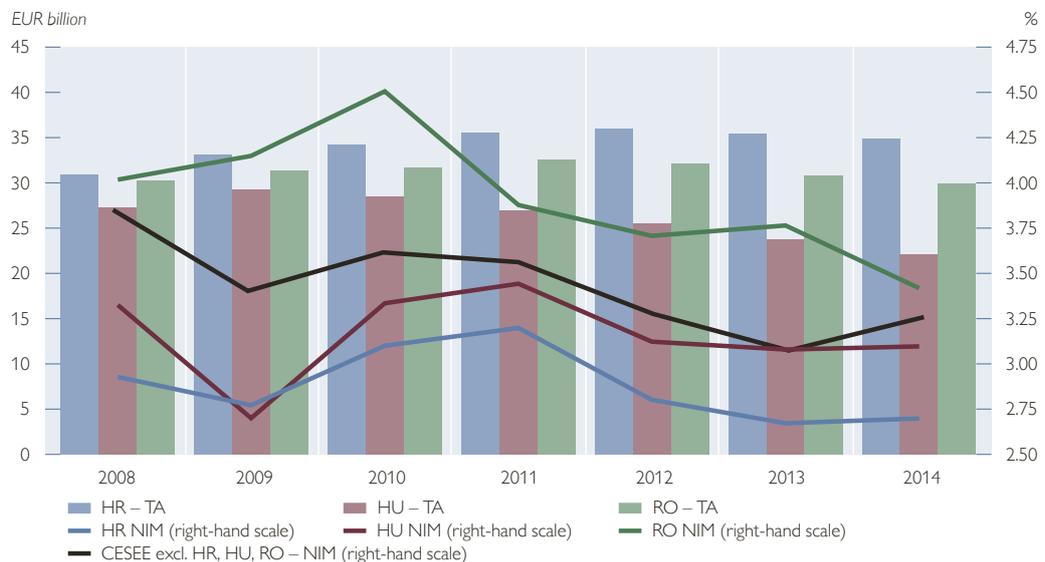
of assets are interest bearing for banks, see footnote 8). At the latest since 2011, we have been able to observe that Austrian subsidiaries in Croatia, Hungary and Romania saw their NIM shrink, while average total assets in Croatia and Romania levelled out and then started falling (deleveraging in Hungary had already set in earlier). This implies simultaneous and adverse margin and volume pressures (see chart 4). While reductions in balance sheet size can be explained by a combination of various factors, including weak credit demand as well as orderly deleveraging,⁶ this first net interest margin definition does not

⁵ Average total assets for any given year are calculated as the simple average of consecutive year-end values.

⁶ For further details, especially on changes in the asset composition, please refer to information provided in section 2.3.

Chart 4

Average total assets (TA) and net interest margins (NIM)



Source: OeNB.

Note: Due to data availability issues, data for the former Yugoslav Republic of Macedonia have been excluded from the CESEE peer group.

allow analyzing key drivers much further, as it depends itself on total assets, which comes close to a circular reasoning.

2.2 Total spread of subsidiaries under pressure since 2010–11

Given the above-mentioned caveats of the first approach, we continue with a more granular analysis to explain the substantial fall in net interest income observed since 2010–11: We break down the (stock-based) total spread

earned into interest revenue on interest-earning assets and interest expense on interest-bearing liabilities, which allows greater insights and the identification of key drivers weakening operating profitability. In order to do this, we use the formula for the total spread on interest-earning assets and interest-bearing liabilities proposed in a study by the ECB (2000; p. 27), which defines the total spread as the combination of a spread and endowment effect.

$$\begin{aligned}
 \text{total spread} &= \text{spread} + \text{endowment effect} \\
 &= \left[\frac{\text{interest revenues}}{IEA} - \frac{\text{interest expenses}}{IBL} \right] \\
 &+ \left[\frac{IEA - IBL}{IEA} \right] \cdot \frac{\text{interest expenses}}{IBL}
 \end{aligned}$$

where IEA are interest-earning assets, IBL are interest-bearing liabilities, and the endowment effect is “the gain from the fact that some part of IEA” – i.e. the part that exceeds the volume of IBL – “does not have an interest cost” – given that it is financed by non-interest bearing items, such as equity. “This calculation disregards the cost of equity capital.” (ECB, 2000).

Chart 5

Decomposing the total spread of Austrian banking subsidiaries in CESEE



Source: OeNB.

Note: The difference between the IEA yield and the IBL cost is the spread, while the spread and the endowment effect add up to the total spread.

This analysis allows a more precise explanation of factors that affected net interest income in Croatia, Hungary and Romania and also sheds light on the different developments in other host markets of Austrian banks. Over the entire period from 2008⁷ to 2014, the first finding is that growth in average interest-earning assets (IEA) and interest-bearing liabilities (IBL) has been very heterogeneous.⁸ While the aggregate volumes increased in other CESEE host countries (by 10% and 4%, respectively), Austrian subsidiaries in Croatia also witnessed an increase (by 10% and 11%), but they stayed flat in Romania and saw a strong decline in

Hungary (–19% in both). Secondly, while in other CESEE markets the total spread seems to have hit bottom in 2013, it rose in the first years of the crisis in the three analyzed countries and fell to lower levels thereafter. Over the entire observed period, it fell slightly in Hungary and Croatia and decreased strongly in Romania, with the latter being the only host market of the three with a total spread still slightly above that seen in other CESEE host markets (see chart 5). In 2014, the total spread stabilized in Croatia and Hungary, while taking another dip in Romania.

In order to explain these developments in more detail, we subdivide the

⁷ Average IEA and IBL for any given year are calculated as the simple average of consecutive year-end values. Due to data availability issues, average IEA and IBL for 2008 have been calculated for the period from March 2008 to December 2008, and data for the former Yugoslav Republic of Macedonia have been excluded from the CESEE peer group.

⁸ In this study we define IEA as loans to nonbanks and credit institutions, debt instruments held, cash and balances with central banks (that made up more than 90% of total assets), while IBL include deposits from nonbanks and credit institutions as well as other debt instruments (that made up more than 80% of total assets).

time period in years before and after the peak in the total spread for each country:

- Croatia is the host market with the lowest total spread for Austrian subsidiaries (when compared to Hungary and Romania); it reached a peak of 333 basis points (bp) in 2011: This meant a gain of 34bp since 2008, which was caused by a spread increase of 52bp (to 295bp) and a change in the endowment effect of -17bp (to 37bp). The former was the result of the average cost paid on IBL (-113bp to 288bp) falling more quickly than the average yield earned on IEA (-62bp to 583bp), while the latter was mostly the result of the substantial reduction in the average cost of IBL. From its peak to 2014, the total spread dropped by 51bp and thereby overcompensated for the gain made since 2008: While the endowment effect only contributed -10bp to this fall, it was mostly due to a spread reduction of 41bp, which was caused by the average yield on IEA (-115bp) falling faster than the average cost on IBL (-73bp).
- At Austrian subsidiaries in Hungary, the maximum total spread was also reached in 2011 (at 360bp): The increase of 11bp since 2008 had been caused by a spread gain of 24bp (to 334bp) and a decrease of the endowment effect (-13bp to 26bp). The former resulted from a slightly faster fall in the average cost on IBL (-270bp to 377bp) than in the average yield on IEA (-246bp to 711bp) and the latter from the strong fall in IBL costs. From 2011 to 2014, however, the total spread lost more than those gains, as it fell by 35bp, caused by the average yield on IEA decreasing faster

(-199bp) than the cost of IBL (-178bp) and the endowment effect declined further to 12bp.

- Austrian subsidiaries in Romania reached the highest total spread of the three analyzed host countries in 2010 (472bp), caused by the highest spread (432bp), which again resulted from IBL costs falling faster (-277bp to 411bp) than the IEA yield (-213bp to 843bp), and an endowment effect of 39bp. Since then, the total spread fell substantially (-117bp) and reached 354bp. This was caused by a substantial reduction in the yield on IEA (-309bp), which could not be compensated for by the fall in IBL costs (-214bp), and a further reduction in the endowment effect to 17bp. It can thus be concluded that in all three countries, the first years of the crisis until 2010-11 were characterized by an increase in the spread, as asset yield losses were overcompensated for by cheaper funding, while this trend went into reverse over the past few years, when the fall in funding costs seemed to have bottomed out (at around 200bp). The (much smaller) endowment effect fell substantially over the years due to the strong decline in IBL costs.

In comparison to these developments, the total spread of the – varying sample of – Austrian banking subsidiaries in other CESEE countries behaved rather differently: It fell until 2013 by 75bp to 326bp, almost entirely caused by the IEA yield falling faster (-257bp to 489bp) than the average IBL costs (-186bp to 184bp). In 2014, it recovered by 22bp, as IBL costs rose by 36bp, but IEA yields rose by 54bp, which points to a potential recovery in profitability in the rest of CESEE.

2.3 Interest-earning assets affected by provisioning, deleveraging and a substantial fall in yields

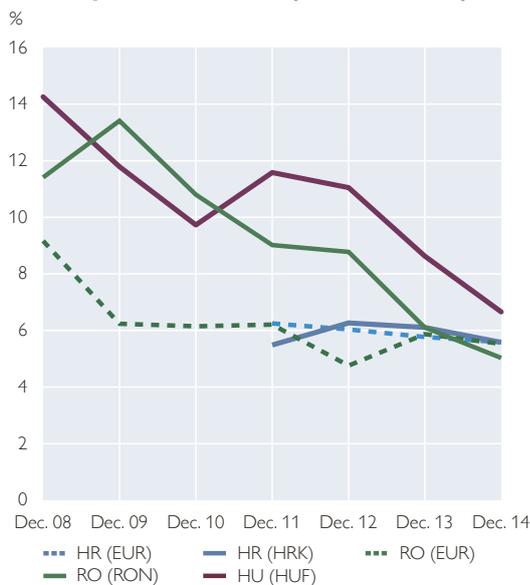
In the previous sections, we discussed downward pressures on total assets (IEA and IBL followed the same trend) as well as the pressure on margins since 2010–11. In the next two sections, we conclude the analysis of operating profitability by turning to the most important shifts in the structure of IEA and IBL of Austrian subsidiaries in Croatia, Hungary and Romania since end-2008 and highlight the dramatic fall of yields across various asset and liability classes. It is important to note upfront that two exogenous circumstances have affected asset composition: The share of debt instruments in total assets has been positively affected by the low yield environment (see the right-hand panel of chart

6) raising valuations, while the share of (net) lending was negatively affected by provisioning requirements during the crisis (see section 3 for more information on credit quality and coverage ratios).

- Austrian subsidiaries in Croatia exhibited the most stable asset portfolio, as loans to nonbanks consistently accounted for around two-thirds of total assets, while the share of inter-bank lending decreased from 17% at end-2008 to 11% at end-2014, which was compensated for by higher shares of debt instruments held (rising from 9% to 12%) and cash and balances with central banks (rising from 4% to 6%).
- Hungarian subsidiaries, on the other hand, saw the share of loans to nonbanks in their total assets decrease substantially from 72% to 53%; this

Chart 6

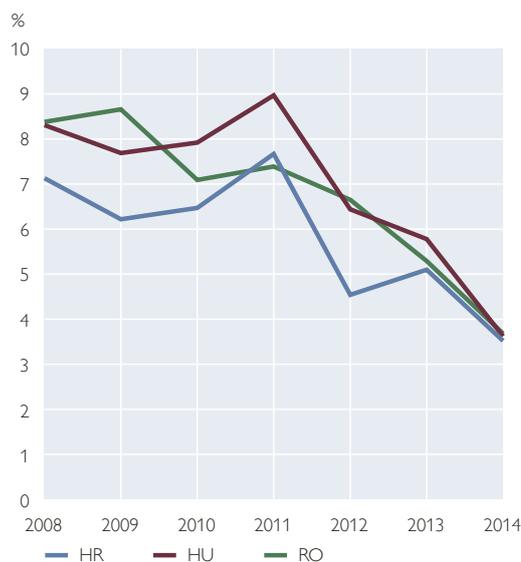
Annual percentage rate of charge for house purchase loans (new business)



Source: ECB.

Note: Loans exclude revolving loans and overdrafts, convenience and extended credit card debt. Croatian data only available since December 2011.

Long-term government bond yields



Source: Eurostat.

Note: All data as of December of the respective year. Long-term government bond yields are calculated as monthly averages and refer to central government bond yields on the secondary market, gross of tax, with a residual maturity of around 10 years. The bond or the bonds of the basket have to be replaced regularly to avoid any maturity drift.

decline was compensated for first by a sharp increase in debt securities held (from 15% to 27% until end-2013), which was then turned into an increase in interbank lending during 2014 (its share increased from 8% at end-2013 to 25% at end-2014, while the share of debt securities fell back to 13%).⁹ Turning to changes in the gross loan volume between end-2008 and end-2014 (before provisioning, not adjusted for exchange rate fluctuations), it is noteworthy that Austrian subsidiaries in Hungary reduced their loan volume to nonbanks much faster in the corporate (−40%) than in the household sector (−24%), while the decrease was more evenly distributed in Romania (−13% and −14%, respectively) and Croatian subsidiaries witnessed a different trend (+1% and −8%, respectively).

- In Romania, the share of lending to nonbanks also declined (from 64% to 56% of total assets), accompanied by a decline in the share of cash and balances with central banks (from 22% to 15%), while the share of debt securities increased strongly (from 3% to 22%).
- In comparison, aggregate figures of Austrian subsidiaries in other CESEE markets point to a stable share of loans to nonbanks (at slightly above 60%), falling interbank lending (13% to 8%) and a rising share of debt instruments held (12% to 17%).

These substantial changes in asset composition, especially in Hungary and Romania, were accompanied by a noticeable reduction in various asset yields due to the general low interest rate en-

vironment: For example, the annual percentage rate of charge for new local currency house purchase loans and long-term government bond yields fell by more than half in these two countries, negatively affecting the IEA yields of new lending and bought securities (chart 6).¹⁰ Consequently, subsidiaries faced dwindling yields on the asset side, whose effects were more acute in Hungary and Romania than in Croatia.

2.4 Dramatic fall in deposit rates eases transition to more sustainable locally funded business model

On the funding side, changes were even more pronounced. Deposits (from banks and nonbanks) make up more than 90% of IBL at Austrian banking subsidiaries in Croatia, Hungary and Romania, and in all three countries the share of nonbank deposits rose between end-2008 and end-2014, while the share of bank deposits fell. This development was most pronounced in Romania, followed by Hungary, and was much less marked in Croatia, where nonbank deposits already made up close to 60% of total assets at end-2008, which was also the level in all three countries at end-2014 (see the left-hand panel of chart 7).

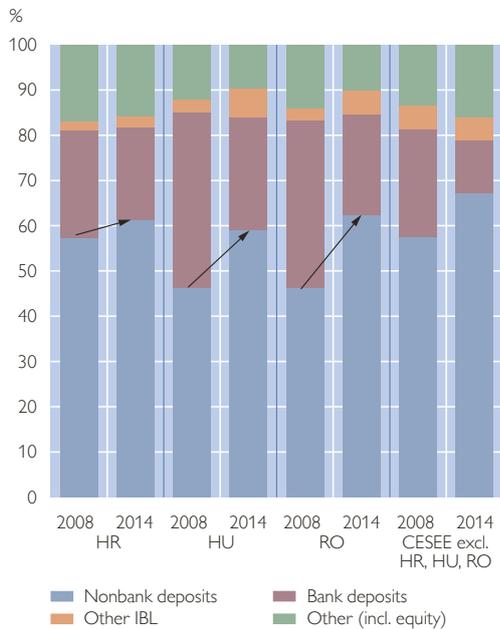
Over the same period and in an environment of very low interest rates, the interest rate paid on deposits (e.g. to households) fell very quickly at the beginning of the crisis (until 2010) and at a slower pace thereafter (see the right-hand panel of chart 7), which confirms the above findings that the initial rapid fall in funding costs com-

⁹ The change in asset composition during 2014 might have been linked to the effects of the local central bank providing parts of its foreign currency reserves for easing the conversion process of households' foreign currency mortgages into local currency loans.

¹⁰ Unfortunately, there are no harmonized data available for Croatia from end-2008 to end-2011, and Hungarian data are not available for foreign currency loans. Therefore, the comparison centers on local currency loans, even though foreign currency lending has played a dominant role in all three markets (see section 3).

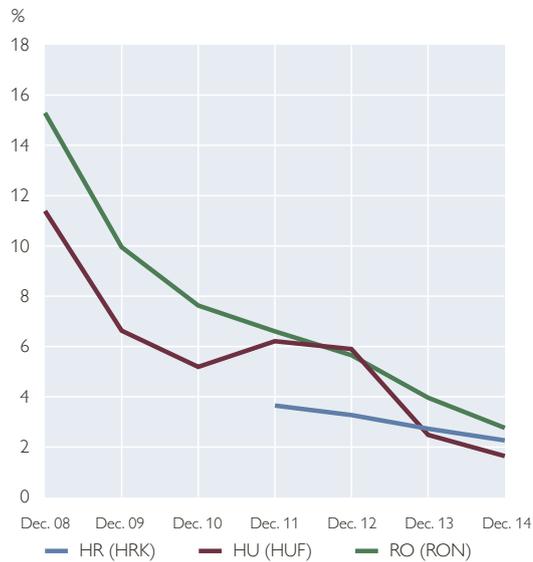
Chart 7

Rising share of deposits from nonbanks in total liabilities (including equity)



Source: OeNB.

Interest rate on deposits of households' (new business)



Source: ECB.

Note: Annualized agreed rate / narrowly defined effective rate on deposits with agreed maturity (original maturity: up to 1 year).

¹ Also includes nonprofit institutions serving households.

compensated for reduced IEA yields at first, but the approaching zero lower bound for funding costs has led to a substantial compression of net interest margins since 2010–11.

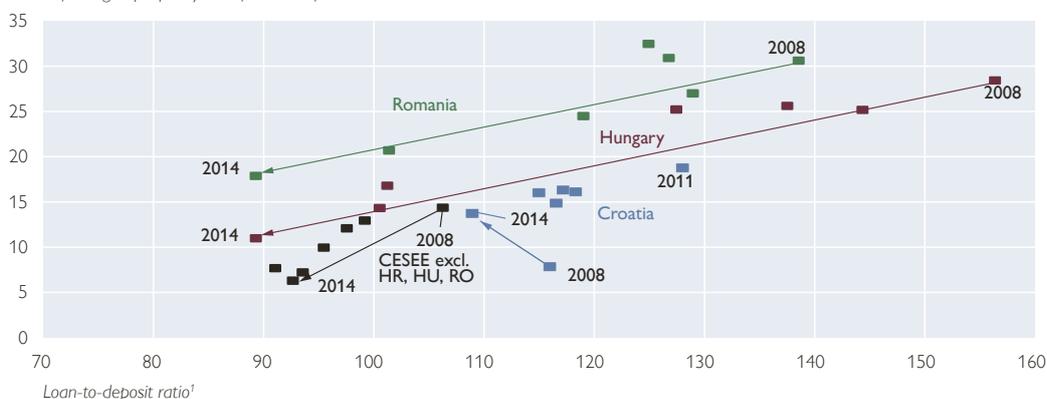
The shift in funding sources also reflects lessons learned from the financial crisis – both by banks as well as supervisors and regulators. Until end-2011, weak local funding had translated into relatively substantial intragroup liquidity transfers from parent banks. This funding dependency of foreign subsidiaries – measured by the share of intragroup funding in their total assets – has been substantially reduced since its

peak (see chart 8), in particular since 2012, when an Austrian supervisory guidance was published that explicitly addresses subsidiaries with unsustainable funding positions and that pushes for an increased reliance on local stable funding, such as deposits from nonbanks.¹¹ Overall (gross) intragroup liquidity transfers to Austrian subsidiaries in Croatia, Hungary and Romania fell from EUR 20.6 billion at end-2008 to EUR 12.4 billion at end-2014 (–40%), but their share in total Austrian intragroup liquidity transfers to CESEE rose from 46% to 54% over the same time period.

¹¹ For more details on this supervisory guidance, please visit <http://www.oenb.at/en/Financial-Stability/Systemic-Risk-Analysis/Sustainability-of-Large-Austrian-Banks--Business-Models.html>.

Falling dependence on intragroup liquidity transfers due to lower loan-to-deposit ratios¹

Share of intragroup liquidity transfers in % of total assets



Source: OeNB.

Note: All points represent aggregate Austrian subsidiaries' data in the respective countries from end-2008 to end-2014. Arrows indicate changes from end-2008 to end-2014.

¹ In relation to nonbanks only, loans after provisioning.

2.5 Concluding remarks on operating profitability

Net interest income is by far the most important source of income for Austrian subsidiaries in Croatia, Hungary and Romania, which testifies to their important role as financial intermediaries that finance the real economy in these countries. But – especially since 2010–11 – net interest income has come under pressure, both in terms of volumes and margins.

- As regards volumes, the smallest changes took place in Croatia. Asset deleveraging was strongest in Hungary, followed by Romania; the composition of assets and liabilities also changed substantially. The share of (net) loans to nonbanks in total assets fell in Hungary and Romania and debt securities gained in importance. On the funding side, changes in business models led subsidiaries to steer away from intragroup funding and turn toward local funding sources, with Austrian subsidiaries in Romania and Hungary having seen the most dramatic changes, but they had

entered the financial crisis at substantially higher levels (see chart 8).

- As regards margins, all three countries saw total spreads peak in 2010–11. The reason was that the fall in IBL costs at first more than compensated for reduced IEA yields, while the approaching zero lower bound for IBL costs and a continued IEA yield contraction led to a considerable decline in total spreads, particularly in Romania.
- Consequently, Hungarian and Romanian subsidiaries saw the largest swings in their net interest income, while changes in Croatia were less pronounced. The open questions for Austrian banks' subsidiaries from an operational profitability point of view are therefore:
 - Especially for Hungarian subsidiaries: has deleveraging come to an end?
 - Especially for Romanian subsidiaries: will IEA yields start to improve in the near future (as they recently did in other CESEE host markets) or will IEA yields continue falling

and push the spread down further, now that IBL costs seem to have found a region-wide floor?

- Especially for Croatian subsidiaries: will the funding model continue its transition to the “new normal” of more locally raised funding? (Even though the high loan-to-deposit ratio is also partly a reflection of lower provisioning levels; see section 3.)

Finally, an important aspect to keep in mind is that this analysis so far has not included risk costs (see section 3) and that the cost of equity was omitted. This last aspect should be seen in relation with the positive endowment effect assumed in this study and merits further analysis in the future.

3 Credit risk and provisioning levels

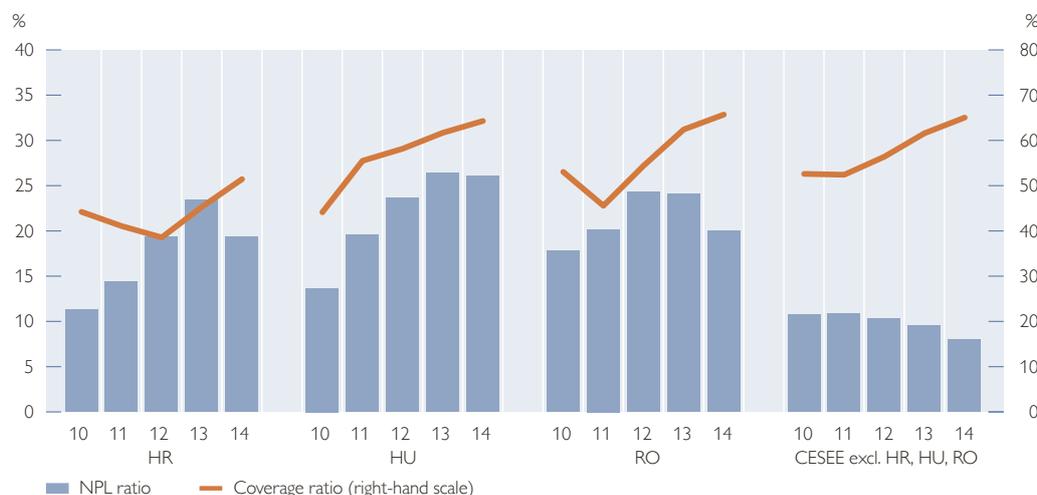
While credit quality at subsidiaries in other CESEE countries has improved continuously since 2011, in Croatia, Hungary and Romania, the deterioration in asset quality continued until 2013, when nonperforming loan (NPL) ratios in all three countries were in the

mid-20s (see chart 9). In 2014, these ratios improved or at least leveled out, while the risks stemming from high NPL volumes are now much better provisioned for than in the past, which is reflected in substantially improved coverage ratios. But while the coverage ratio of Hungarian subsidiaries has caught up and developments at Romanian subsidiaries were broadly in line with those at other Austrian CESEE subsidiaries, coverage ratios at Croatian subsidiaries are still significantly below their peers' average. In order to reach the coverage level of their CESEE peers, Croatian subsidiaries would have to build up more than EUR 0.5 billion in allowances. Additionally, the reduction in NPL levels in Croatia in 2014 stems to a large extent from the restructuring of Hypo Alpe-Adria-Bank International AG and the related shift of a major part of its NPL portfolio to its bad bank (HETA Asset Resolution AG).

In relation to credit quality, one major characteristic of the banking market in all three countries is the high incidence of foreign currency (FX) loans, a credit segment that is marked

Chart 9

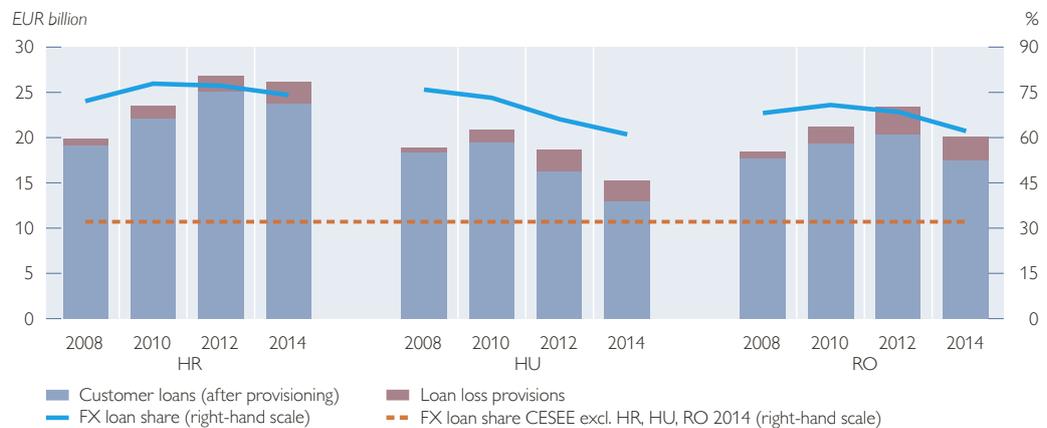
NPL and coverage ratios



Source: OeNB.

Chart 10

Loan exposure and share of foreign currency loans in customer loans



Source: OeNB.

by moderately higher NPL ratios. The share of FX loans in Austrian banks' Romanian and Hungarian subsidiaries' total customer loans is around 60% at end-2014; at Croatian subsidiaries, this share is even higher at 75%. In all three countries, the majority of FX loans are denominated in euro, with shares of 85% in Croatia and Romania, where euro-denominated borrowing was considered less risky by customers, as both the Romanian and Croatian currencies are tied to the euro under a managed float currency regime; in Hungary, where Swiss franc lending also played an important role, the share of euro-denominated loans in FX loans was 55%. The various Austrian and local supervisory initiatives, most notably the Austrian Guiding Principles on FX lending in CESEE (2010), have proven to be effective, as FX loans, especially those denominated in Swiss francs, have gradually and markedly decreased. Since end-2008, the outstanding volume of loans denominated in foreign currency has dropped by about 5% on a FX-adjusted basis in Croatia, by 20% in Romania and by an even more significant 50% in Hungary. Although Hungary and Croatia have taken action

to address the FX loan problem – by way of legal acts in Hungary and a temporary exchange rate fixing for Swiss franc mortgage loans in Croatia – it should be noted that most of Austrian banks' FX exposure in those countries had already been reduced beforehand.

4 Conclusion

Although the competitive situation of Austrian banking subsidiaries in Croatia, Hungary and Romania is heterogeneous, their operational efficiency as measured by the cost-income ratio shows no particular peculiarities when one-off effects are excluded. As with other CESEE subsidiaries, net interest income is by far their most important profit source, but contrary to the situation at their regional peers, it has not started to recover – from pressures on volumes (in particular in Hungary) and margins (in particular in Romania). Steering away from intragroup funding and turning toward local funding sources changed subsidiaries' funding models, with Hungarian and Romanian subsidiaries having had to change theirs to a greater extent than peers in Croatia, where the shift was less pronounced. In terms of operating profit-

ability and its future trend, it remains to be seen whether deleveraging and margin compressions have come to an end in Hungary and Romania now that the local economies are picking up and funding costs seem to have found a floor at around 2%. High loan-to-deposit ratios can still be observed at Austrian subsidiaries in Croatia. Raising the provisioning level to the regional average would help close this gap and raise the coverage ratio, which would allow speedier NPL resolution via write-offs or direct sales.

Austrian banking subsidiaries in Croatia, Hungary and Romania have come a long way since the beginning of the financial crisis: They had to adapt their business models to new realities as did other Austrian CESEE subsidiaries, and several indicators are now more in line with regional averages (e.g. IEA yields, IBL costs, loan-to-deposit and coverage ratios). But while subsidiaries in Hungary and Romania saw more

dramatic changes – often due to higher starting points, e.g. with respect to margins or intragroup liquidity transfers – changes at Croatian subsidiaries were more subdued and they have not yet increased provisioning to higher regional coverage levels. All in all, restructuring efforts at Austrian subsidiaries in Croatia, Hungary and Romania do not appear to be complete yet: Issues related to nonperforming and foreign currency loans still need to be addressed, subsidiaries' dependence on intragroup liquidity transfers is still elevated and questions are still open regarding further deleveraging needs and how to improve asset yields now that funding costs seem to have reached a floor across the region. With a potential macroeconomic recovery beginning to take shape in Europe and restructuring efforts well underway, the path for these three core Austrian banking host markets remains rocky, but not without upsides.

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Ukraine: struggling banking sector amid substantial uncertainty¹

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The situation of banks in Ukraine is exceptionally challenging for a number of reasons. First of all, banks had not managed to recover from the 2008–09 crisis before being hit again in 2014. Hence, the deep Ukrainian recession and the hryvnia's plunge – together with strong exposure to geopolitical tensions – tipped the banking sector again deeply into the red. Amid an environment of persistent uncertainty, many foreign-owned banks have left the country. In addition to chronic structural shortcomings, such as weak rule of law, excessively high corruption, opaque ownership structures and connected lending, the most significant problems currently plaguing the sector include high and growing credit risk and high exchange rate risk. The country faces a dramatic credit crunch and even more alarming deposit outflows. Financial intermediation has practically collapsed, with the number of insolvent banks rising quickly. The major shock-absorbing factor is the IMF's and the international community's commitment to financially assist Ukraine.

JEL classification: G21, G28, P34

Keywords: banking sector, banking crisis, geopolitical risk, credit risk, exchange rate risk, connected lending, pocket banks, nonperforming loans, recapitalization, Ukraine

In this article, we provide an analysis of the current situation in the Ukrainian banking sector by taking into account macroeconomic developments. We discuss the main features of the banking sector, major risks it is facing and its future prospects. The investigation relies on both aggregate banking sector data as well as individual bank data. Section 1 provides a succinct overview of the current domestic political, geopolitical and macroeconomic environment – marked by high instability, vulnerability and weakness – in which credit institutions in Ukraine operate. Section 2 describes banking developments following the crisis of 2008–09, with the emphasis on recent events,

notably developments in 2014 and early 2015. We focus also on structural changes in ownership and the evolution of market shares by bank ownership. In section 3, we draw on previous findings to identify challenges currently facing the Ukrainian banking sector and assess some shock-absorbing factors. Giving an outlook, section 4 concludes the article.

1 Political, geopolitical and macroeconomic environment

Having a minimum degree of familiarity with the extraordinarily challenging political and macroeconomic framework conditions banks operate in appears essential in the case of Ukraine.

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1.1 Political and geopolitical conditions

In recent years, Ukraine has repeatedly witnessed tendencies toward political polarization and instability. Society has been dominated by politically powerful domestic businessmen (oligarchs) and financial-industrial groups, and society has featured a very high level of corruption and capture of public institutions.³ Over time, the country and its business groups seem to have fallen increasingly into the crosshairs of geopolitical competition pitting the EU/the West against Russia. The ouster of Ukraine's former President Yanukovich in February 2014 by the strongly pro-EU and pro-Western Euro-Maidan popular movement was followed by Russia's annexation of Crimea and by the outbreak of armed insurgency in the Donbass region of eastern Ukraine, supported by Russia. The receipt of IMF and international financial assistance, the presidential elections of May 2014 and President Poroshenko's subsequent assumption of office had (temporarily) stabilized the situation. Yet, the intensification of the armed conflict in the summer 2014 as well as internal political squabbles destabilized the situation again. The parliamentary elections in October 2014 gave the new government a strong mandate to carry out reforms, but the overall problematic geopolitical situation remains unchanged.⁴

The fact that – despite the strong deployment of the Ukrainian military – the Donbass rebellion has not been quashed and the standoff continues

points to a possibly lasting burden for the Ukrainian economy going forward. The loss of central control of important parts of the Donbass region and the uncertainty created by this conflict, which may or may not turn into a “frozen” one, are depriving the central authorities of tax revenues and are forcing them to spend additional resources on the military. At the same time, Kiev has stopped paying civil service salaries and pensions to rebel-held territories (see box 1 below). More generally, economic integration between parts of the Donbass region and the rest of Ukraine has weakened and is exacting high costs on both sides. Continuous uncertainty triggered by the conflict has contributed to recurrent tensions on the foreign exchange market.

1.2 Macroeconomic environment

Following strong GDP growth in the pre-2008–09 crisis years, Ukraine's economy plummeted in 2009. The economic slump (–15%) was among the deepest of CESEE countries. The recovery was first export led, helped by commodity prices bouncing back and export demand.⁵ In order to bolster confidence, the National Bank of Ukraine (NBU) opted for a de facto peg of the hryvnia at its post-crisis devalued level to the U.S. dollar. Domestic demand, particularly private consumption, soon took over and contributed to a renewed widening of the country's external imbalances. While GDP growth recovered to 4.1% in 2010 and 5.2% in 2011 (see table 1), the cur-

³ For more information on the political economy background of the Ukrainian crisis, see Vercueil (2014).

⁴ The ceasefire agreement of Minsk of September 2014 temporarily reduced the intensity of warfare, but hostilities flared up again in January and February 2015 and pro-Russian separatists gained some ground. Hopes are now pinned on the new ceasefire agreement of Minsk II of mid-February 2015, which has at least in the short term eased the situation again.

⁵ However, Ukraine is not only an important exporter (steel, chemicals, cereals and other farming products, mostly to Western countries), but also an importer (natural gas and oil, mostly from Russia) of raw materials and commodities. Therefore, the effect of commodity price rises can be ambiguous for Ukraine.

rent account deficit grew fourfold to over 6% of GDP, and was no longer covered by FDI inflows. Portfolio inflows and the partial drawdown of reserve assets contributed to covering the difference. Gross external debt that had climbed to over 80% of GDP in 2009, remained approximately at this level.⁶

In late 2011 and in 2012, prices of and external demand for the country's staples decelerated again and Ukrainian economic growth evaporated. Moreover, despite a substantial decline of inflation from high levels (end-2009: 12%, 2012: 0%), the upholding of the U.S. dollar peg against the backdrop of high real wage growth and slow productivity rises eventually led to hryvnia overvaluation. GDP stagnated in 2012 and 2013. Private consumption slowed down but continued to drive domestic demand, while investment contracted. Bank lending turned from a lagging factor in 2012 to a driving force of economic activity in 2013 and may have played a role in preventing a recession that year. However, the current account gap further swelled to over 9% of GDP in 2013, exceeding remaining FDI inflows fivefold. In contrast, portfolio inflows increased sharply (they doubled to 5% of GDP); there was also a small net inflow of bank credits (about 1% of GDP). At the same time, reserve assets continued to shrink. The widening budget gap contributed to the macroeconomic deterioration: the general government deficit mounted to almost 5% of GDP in 2013.⁷ The NBU continued to defend the exchange rate through a tightening of monetary policy, ad-

ministrative measures, and currency market interventions. The latter over time drew down international reserves, which shrank to USD 20.4 billion or 2.4 import months of goods and services at end-2013 (chart 1).

The impossibility to sustain the disequilibrium⁸ eventually triggered the NBU's decision in early February 2014 to give up the peg and float the exchange rate. This happened against the backdrop of extensive political unrest in Kiev in connection with the refusal of President Yanukovich to sign the Deep and Comprehensive Free Trade Arrangement (DCFTA) with the EU, which together with frustration about rampant corruption resulted in the president's overthrow in February 2014. In the following weeks, the hryvnia depreciated almost 50% against the U.S. dollar until the exchange rate re-stabilized somewhat in April–May 2014. This stabilization followed the monetary authority's increase of its key interest rate by three percentage points to 9½%, NBU administrative interventions as well as the Ukrainian interim government's signing of a new IMF Stand-By Arrangement for the country in late April. This arrangement comprised a loan package of USD 17.1 billion (to be disbursed in a two-year period), which also opened the door to EU, World Bank and other international assistance. The total international package of 2014 therefore envisaged a volume of USD 27 billion. The arrangement with the IMF allowed Ukraine to immediately draw USD 3.2 billion.

⁶ *Meanwhile, bank lending, far from being a driver of the recovery, contracted or grew very weakly in these years (see also below).*

⁷ *If one includes the operational deficit of the state gas company Naftogaz of Ukraine, the total fiscal shortfall attained almost 7% of GDP in 2013.*

⁸ *International reserves fell by another USD 5 billion over the following two months so that the level reached in February 2014 equaled less than two months of goods and services imports.*

However, severe tensions with Russia caused new uncertainty. The geopolitical conflict contributed to a collapse of capital formation (–29% in 2014), which ushered in a new deep recession. In June, Gazprom suspended gas exports to Ukraine due to accumulated payment arrears and price disputes. FDI net inflows dwindled to a very low level in 2014 and capital flight gathered momentum, contributing to a further slide of the hryvnia. Domestic bank credit growth slowed down sharply and turned negative when accounting for exchange rate fluctuations. Real wage and pension freezes, a public service hiring freeze and hefty retail gas price increases carried out in the framework of the IMF program⁹ triggered a turnaround and contraction of private consumption from the second quarter of 2014. Industrial production fell by 10.7% and GDP shrank by 6.8% in 2014. Only agricultural production, which suffered relatively less from the hostilities in the east, grew in 2014 (by 2.9%). The contraction of economic activity accelerated to 17.6% (year on year) in the first quarter 2015.

One of the reasons why this new recession is so deep is that – notwithstanding the incisive depreciation – the Ukrainian trade adjustment has (so far) only occurred through a cutback in imports, while exports have not recovered but instead further declined (although less so than imports). This, in turn, is largely attributable to supply-side constraints linked to the para-

lyzation of the Donbass' highly export-oriented regional economy.¹⁰ The military hostilities, ensuing damages to the infrastructure and regional productive capacities, and the imposition of some (reciprocal) Ukrainian-Russian trade bans have impaired production and exports. Chemicals, metals and machinery shipments have suffered particularly. Autonomous trade preferences granted Ukraine by the EU in connection with the DCFTA have recently enabled increasing deliveries of food products, steel and some other goods to Europe, but generally the positive economic impact of the agreement can only show up over time. Due to the hryvnia's depreciation and the recession, the current account gap declined substantially, but was still at an elevated 4.0% of GDP in 2014. Unemployment grew to 9.0% (ILO definition) on average in that year.¹¹ According to IMF estimates, the general government budget balance slightly declined to 4.6% of GDP,¹² the combined fiscal and quasi-fiscal deficit (including Naftogaz losses), however, expanded to over 10% of GDP in 2014.

The pass-through from the burst of depreciation and increases of administrative prices (including gas tariffs) in 2014 propelled CPI inflation from near zero in January to 12.0% at end-June 2014 (year on year). In order to better manage inflation expectations, the NBU raised its main policy rate by another 300 basis points to 12½% in mid-July. After the hryvnia had since May re-

⁹ A 50% hike of gas tariffs for households in May 2014 constituted a first structural step in bringing the country's heavily subsidized energy prices closer to market levels.

¹⁰ The Donetsk and Luhansk regions (not their entire territory is under control of pro-Russian forces) in 2012–13 together accounted for about 16% of Ukraine's GDP and for around one-quarter of the country's industrial production and exports (for more details see box 1).

¹¹ Although the ILO measure appears more adequate than the lower rate of registered unemployment, it may still underestimate real joblessness, because only people actively seeking employment (if not necessarily claiming jobless benefits) are counted, which excludes those that have given up looking for a job.

¹² This is notwithstanding the imposition of an emergency income surcharge of 1.5% to finance the military.

Table 1

Ukraine: selected macroeconomic indicators

	2009	2010	2011	2012	2013	2014	2015 (IMF forecast) ¹
GDP growth (in real terms, %)	-14.8	4.1	5.2	0.2	0.0	-6.8	-9.0
Industrial production (in real terms, %)	-21.9	11.2	7.3	-0.5	-4.3	-10.7	..
CPI inflation (end of period, %)	12.3	9.1	4.6	-0.2	0.5	24.9	46
Unemployment rate (ILO definition, average %)	8.8	8.1	7.9	7.5	7.2	9.0	11.0
General government balance (% of GDP)	-6.3	-5.8	-1.7	-3.5	-4.8	-4.6	-4.2
Overall balance of public sector ² (% of GDP)	-8.7	-7.4	-4.3	-6.6	-6.7	-10.3	-7.4
Current account balance (% of GDP)	-1.5	-2.2	-6.3	-8.1	-9.2	-4.0	-1.4
Net FDI flows (% of GDP)	4.0	4.2	4.3	3.8	1.8	0.3	1.4
Gross international reserves (end of period, USD billion)	26.5	34.6	31.8	24.5	20.4	7.5	18.3
in months of goods and services imports	5.7	5.7	3.9	2.8	3.3	1.5	3.3
Gross external debt (end of period, % of GDP)	85.8	83.1	80.5	71.9	72.5	102.4	158.4
Goods terms of trade (annual change, %)	-13.8	+0.3	+7.7	-3.1	-1.1	-2.8	0.4
Exchange rate UAH/USD (official, period average)	7.79	7.93	7.97	7.99	7.99	11.89	21.7
Exchange rate UAH/EUR (official, period average)	10.87	10.53	11.09	10.27	10.61	15.72	..

Source: National Bank of Ukraine, IMF, The Vienna Institute for International Economic Studies (wiiw).

¹ IMF (2015a, 2015b, 2015c).

² Including the operational deficit of Naftogaz of Ukraine.

mained largely steady at its depreciated level of around UAH 11.5–12.0/USD, renewed domestic political tensions (see above) and the dragging-on of the armed confrontation in the east with apparently no prospect of ending soon triggered a further slide (of 8%–10%) of the Ukrainian currency in August 2014 to beyond UAH 13/USD (chart 1).¹³ However, as economic policies were generally implemented as agreed in the program, the country in late August received the second tranche (USD 1.4 billion) of the IMF loan, which supported international reserves. The latter came to USD 16.4 billion at end-September 2014.

Given that the NBU had only limited room for foreign exchange market interventions due to the IMF program conditioned on the flexible exchange rate policy, the monetary authority took recourse to increasingly rigid cap-

ital controls (see below). But despite the above-mentioned limitations it soon also resumed selling foreign currency to support the hryvnia. While these instruments contributed to holding the exchange rate around UAH 13/USD until late October 2014 (the time of the parliamentary elections), inflation continued to rise (largely as a result of the previous depreciation). At the same time, as mentioned above, the recession continued to deepen, the current account remained substantially in the red, confidence remained low, and capital outflows did not let up. In early November, the NBU suspended interventions again and, in mid-November, raised its key rate by 1½ percentage points to 14% – a level, however, that had already been overtaken by inflation months ago. The currency further depreciated to about UAH 15.8/USD at end-December 2014 and UAH 16.2/

¹³ As NBU Deputy Governor Rashkovan pointed out in a presentation at the wiiw Spring Seminar at end-March 2015 in Vienna (Rashkovan, 2015), the exchange rate of the hryvnia, capital flows and deposit movements tend to react very sensitively to bouts of escalation and de-escalation of warfare in eastern Ukraine.

Chart 1

Development of official foreign currency reserves and of the hryvnia exchange rate**Official foreign currency assets (incl. gold)****Exchange rate**

Source: National Bank of Ukraine, Thomson Reuters.

USD at end-January 2015. Prices were 28.5% higher at that point than twelve months before.¹⁴

Foreign currency reserves further sharply declined to USD 6.4 billion (only about 1.1 import months)¹⁵ at end-January 2015, mostly due to the renewed interventions and to debt clearance payments of USD 3.1 billion to Gazprom within the framework of an agreement reached on the temporary resumption of gas deliveries. The critically low level of foreign currency reserves, the feeble situation of the country's external accounts and the renewed flaring-up of the conflict in the east compelled the NBU in early February to (once again) stop defending the currency while, at same time, it

raised its key rate by 5.5 percentage points to 19½% (still far below inflation). As this was not sufficient to halt the slide of the hryvnia, the monetary authority further tightened currency controls (including the imposition of additional restrictions on foreign currency purchases, payments and transfers abroad)¹⁶ and in early March yanked up the rate by twice as much – to 30%. As depicted in chart 1, in the wake of some strong volatility, the exchange rate eased to around UAH 22/USD (UAH 24/EUR) in March.¹⁷

The sharp GDP contraction coupled with the substantial slide of the currency contributed to pushing the country's ratio of foreign debt to GDP to above 100%. In December 2014, the

¹⁴ These developments point to the high likelihood that the Ukrainian economy has become affected by an inflation-depreciation spiral.

¹⁵ This corresponds to international reserves' lowest absolute level in a decade.

¹⁶ Moreover, in order to cut import demand and support the hryvnia, the Ministry of Finance introduced import surcharges of 5% for industrial goods and 10% for agricultural products at end-February 2015.

¹⁷ Altogether, the hryvnia lost about three-quarters of its value against the U.S. dollar and two-thirds of its value against the euro since early 2014. The Ukrainian currency's plunge of 2014 and early 2015 was about twice as deep as that of the previous major crisis of 2008–09, when it had depreciated by about one-third.

IMF identified additional funding needs of USD 15 billion for Ukraine through April 2016 on top of the already earmarked USD 27 billion under the April 2014 international support package (Spiegel and Olearchyk, 2014). In January 2015, the Ukrainian authorities requested a new multi-year arrangement with the Fund. After Ukrainian delivery of some painful up-front measures (including a budget revision, pension cuts, and a sizeable increase of domestic energy tariffs), the IMF in mid-March replaced the Stand-By Arrangement (of which a total of USD 4.6 billion had been drawn) with a four-year Extended Fund Facility of USD 17.5 billion. A first tranche of USD 5 billion became available immediately upon the board's approval. Part of it went to replenishing the NBU's foreign currency reserves, which, after having further declined in February, recovered to USD 10.0 billion at end-March, before slightly dropping to USD 9.6 billion a month later (back to approximately their level of end-November 2014 or about 1.6 import months). The IMF program is complemented by pledges of EU macro-financial assistance (EUR 1.8 billion) and U.S. loan guarantees (USD 2.0 billion) as well as by other support. The authorities have also entered into debt restructuring negotiations with holders of Ukrainian public debt (USD 70.6 billion at end-2014) with a view to generating a haircut of USD 15.3 billion (22%) until mid-2015 – one of the IMF program's performance criteria. As of early June, an agreement with creditors has yet to be reached. The exchange rate has remained relatively stable (at the depreciated level of March),

while pass-through effects and further sharp domestic energy tariff adjustments¹⁸ contributed to fueling galloping inflation (45.8% at end-March, 60.9% at end-April).

2 Banking sector development

The structure of Ukraine's bank-based financial system differs from other CESEE countries as Ukraine's banking sector features a lower degree of concentration of business. At end-2014, 162 banks held a banking license, and the five largest credit institutions accounted for about 43% of total sector assets. The Ukrainian sector includes a big number of so-called "pocket banks" or "agent banks," i.e. credit institutions that in fact function as extended financial departments for owners or their firms (comparable to the situation in Russia). Accordingly, pocket banks often engage in connected or related-party lending (Barisitz and Gardo, 2009, p. 94)¹⁹. However, when we look at the regional perspective, concentration is visible. Banking activity is concentrated in the capital city as about half of all deposits and almost 57% of all customer credits are connected to this area. As of end-2014, the Dnipropetrovsk oblast (i.e. region) accounted for almost 9% and the Odessa region for about 5% of all deposits, followed by the Kharkiv and Lviv regions with shares of about 4% each. Around 13% of all credits were provided in the Dnipropetrovsk region, while Odessa accounted for about 4% of all credits, followed by Donetsk (3%). It is important to note that these numbers refer to the stock of credits.

¹⁸ Thus, gas tariffs for households were (further) increased in April by 2.8 times, retail electricity prices were raised by one-third.

¹⁹ A top NBU official has recently likened "oligarch banks" in Ukraine to "vacuum cleaners that suck up deposits in order to finance oligarchs' business undertakings" (Kurier, 2015).

Ukraine's banks have largely run through three phases of development since the global financial crisis of 2008–09 – phases dominated by asset growth and decline, and by credit cycles. A post-crisis restabilization of the sector (late 2009 to late 2012) was followed by a short-lived credit expansion (late 2012 to early 2014), which in turn gave way to a deep crisis-triggered contraction of banking activities (from early 2014).

2.1 Post-crisis recovery (late 2009–late 2012)

Following the extreme pre-crisis real growth of loans (in some years by about 50% annually, or by 10 to 15 percentage points of GDP per year)²⁰, lending dropped sharply in 2009 and 2010, before stabilizing in 2011 and 2012. Once the economy had rebounded, the currency had stabilized and confidence had returned, deposits started to expand dynamically. This was probably supported by the NBU's adoption of a new (depreciated) de facto U.S. dollar peg and by the decline of inflation from crisis levels, which rendered real deposit rates increasingly attractive. The share of foreign currency-denominated accounts, which had increased to almost half of total deposits in 2009, slightly receded again. Thus, while banks generally remained cautious in granting credits, the “loan overhang” – the very high loan-to-deposit ratio – was successively cut back from 216% at end-2009 to 142% at end-2012. Banks' net external liabilities sharply contracted to 4% of total liabilities in 2012. This mostly reflected the substantial shrinkage of cross-border funding,

while assets held abroad were somewhat stocked up.

However, as a legacy of the crisis, nonperforming loans (NPLs) had risen to new heights and largely remained there. Thus, according to the NBU definition, NPLs had quadrupled to about 15%–16% of total loans on average in 2011–12. IMF calculations using a broader and more internationally comparable definition arrive at a nonperforming loan share that is about twice as high.²¹ The share of foreign currency loans (predominantly U.S. dollar, see below) in total loans has traditionally been high in Ukraine. Despite the NBU's ban on foreign currency lending to unhedged borrowers imposed in late 2008, the share of foreign currency loans only came down slowly (table 2). After years of losses linked to provisions for high NPLs, modest profitability was only achieved in 2012. With overall cautious lending, banks tended to invest increasing funds in state securities (government bonds), thus stepping up their role in financing the budget deficit.

The post-crisis recapitalization of state-owned credit institutions (Ukreximbank and Oschadbank), the nationalization and rehabilitation of three troubled domestic privately-owned banks (Rodovid, Ukrgaz, and Kyiv Bank)²², and state-owned banks' (SOBs) proactive credit expansion strategies together raised SOBs' share in total banking assets to 18% at end-2012 (chart 2). Immediately after the crisis, foreign-owned banks' (FOBs) asset share started to decrease and these banks generally kept new lending quite modest. Some FOBs have tended to suffer

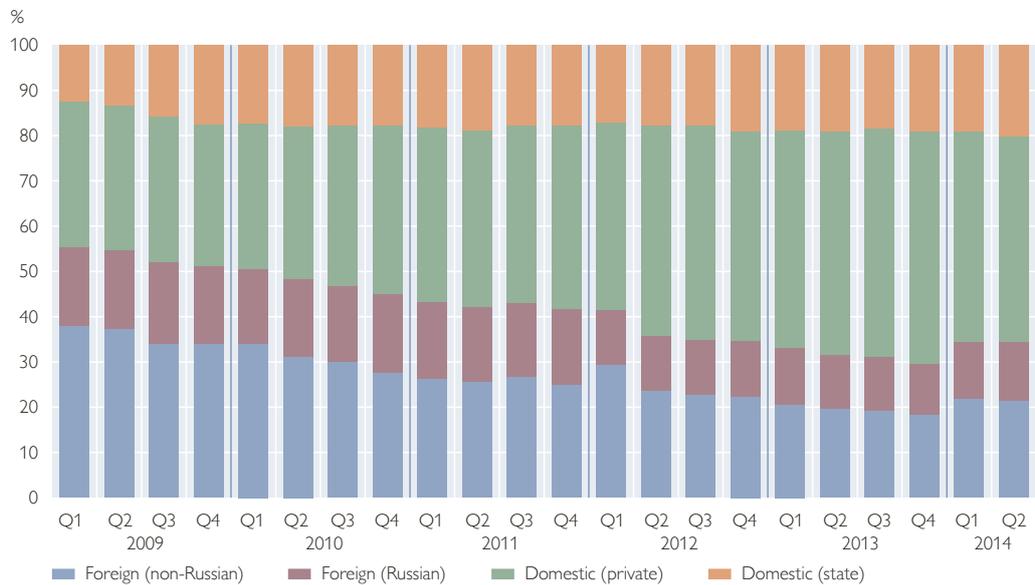
²⁰ For more information on the Ukrainian credit boom, see Barisitz and Lahnsteiner (2009, pp. 71–72).

²¹ In particular, the IMF also includes restructured loans as NPLs, which corresponds to best international practice.

²² Unfortunately, the post-crisis bank restructuring process is reported to have been messy and to have included asset stripping and misreporting (Standard&Poor's, 2011, p. 8; Barisitz and Lahnsteiner, 2012, p. 54).

Chart 2

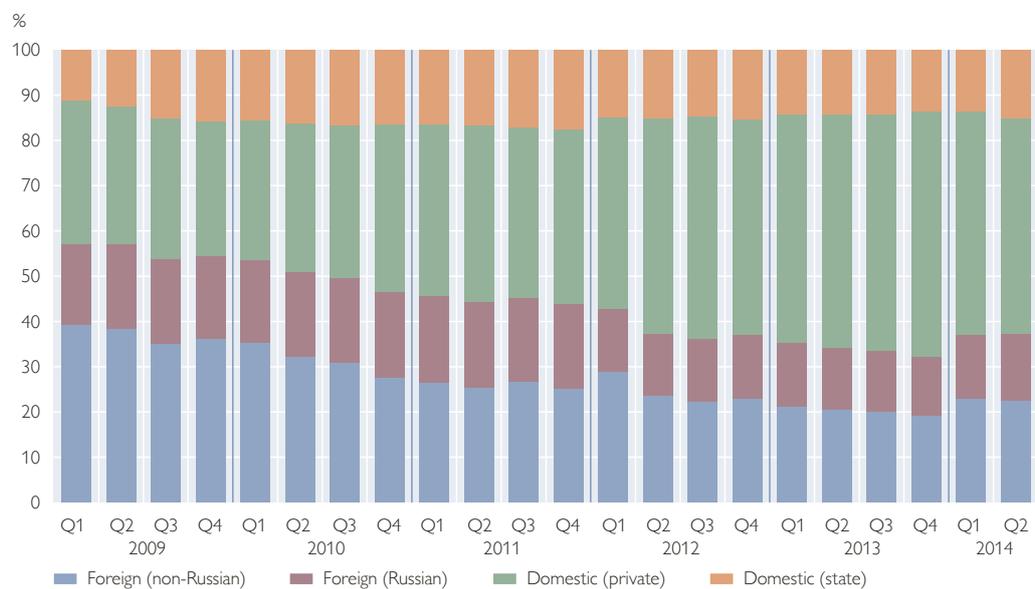
Share of banking sector assets by bank ownership



Source: Authors' calculations based on NBU data and ownership data collected from commercial banks' annual reports.

Chart 3

Share of banking sector loans by bank ownership



Source: Authors' calculations based on NBU data and ownership data collected from commercial banks' annual reports.

from a self-imposed legacy of particularly generous foreign currency lending. Re-emerging financial instability in the euro area coupled with weakening economic growth in western Eu-

rope and the strengthening of regulatory capital requirements for European banks, which were the parents of most FOB subsidiaries in Ukraine, soon contributed to deleveraging and de-risking

activities notwithstanding Ukraine's economic recovery in 2010 and 2011. Foreign-owned subsidiaries repaid parent funds and a number of FOBs exited Ukraine (table 3). In the three years until end-2012, the largest 20 FOBs in the country had lost an aggregate of more than USD 960 million (Alexander, 2014, p. 12).

Yet, in contrast to foreign-owned banks in general, Russian banks in Ukraine kept their market share largely stable. As depicted in chart 2, the asset share of FOBs – excluding Russian banks – sharply declined from almost 40% of total sector assets at end-2009 to above 20% four years later, while the share of Russian banks only decreased slightly. The same goes for lending shares (chart 3).

2.2 Temporary credit spurt (early 2013–early 2014)

Against the backdrop of Ukraine's disappointingly sluggish economic growth in 2012 and of rising political rivalry in connection with the upcoming presidential elections (originally scheduled for early 2015), and given credit institutions' improved liquidity situation, the banking sector – led by large domestic privately-owned banks – stepped up lending in 2013. Lending growth (in real terms and exchange rate-adjusted)²³ increased from 2% at end-2012 to 11% a year later, and still rose 4% by end-March 2014 (year on year). Credit expansion was led by lending to enterprises (which grew 14% by end-2013), but even retail lending growth turned positive (+3% by end-2013).

More precisely, while foreign currency lending to households remained prohibited and the respective outstanding credit volume continued to contract, hryvnia credit gathered momentum and expanded in double digits. Investments in government securities remained popular, as witnessed by the growing share of banks' net claims on the central government in their total assets (up from 6% at end-2012 to 8% in early 2014).

At the same time, foreign-owned banks continued to lend very cautiously and to deleverage. As can be seen in table 3, sales of subsidiaries and exits from the country went on. FOBs' (excluding Russian banks) share in total banking assets fell further to 17% at end-2013, while Russian banks' market share remained more or less stable at about 11%. Domestic privately-owned banks' asset share increased to 50%, which reflected their aggressive growth strategies and some takeovers of former FOB subsidiaries. Many of these domestic private banks are directly connected to politically influential tycoons and financial-industrial groups (Fungáčová and Korhonen, 2014, pp. 7, 10).

Largely because of the acceleration of lending, the NPL ratio (according to the national as well as the IMF definition) decreased slightly, but remained elevated. At the same time, the provision coverage of nonperforming loans fell slightly (from 65% to 62%). Strikingly, the ratio of large exposures to capital markedly expanded to reach 259% at end-March 2014, possibly indicating related-party lending as a driving force of the credit spurt.

²³ In order to simplify calculations, exchange-rate adjustment is here confined to using the U.S. dollar exchange rate as a proxy for all relevant foreign currency exchange rates to the hryvnia. We are aware that this implies an element of imprecision, but we feel that results are still approximate enough, given that the U.S. dollar, e.g. at end-2013, accounted for 86% of foreign currency-denominated loans to enterprises and for 82% of foreign currency-denominated deposits of households in Ukraine. In comparison, the only other two currencies worth mentioning, the euro and the Russian ruble, accounted for 13% and 1.4%, respectively, of foreign currency-denominated loans to enterprises, and for 17% and 0.5%, respectively, of foreign currency-denominated deposits of households.

Table 2

Ukraine: main banking sector stability indicators

	End-2009	End-2010	End-2011	End-2012	End-2013	End-June 14	End-2014	End-Mar. 15
Commercial banks (holding a banking license, number)	182	176	176	175	179	173	162	147
Number of banks not complying with selected banking regulations ¹	49	16	18	17	14	57	..	..
Total assets (liabilities) of banking sector (excl. NBU, ratio to GDP in %)	96.4	87.0	81.0	79.9	87.2	88.0	84.0	89.2
Annual growth (in real terms, %)	..	-1.9	7.0	7.1	12.8	..	-17.5	-24.9
Total deposits (from resident sectors, excl. interbank, ratio to GDP in %)	36.7	38.5	37.8	40.6	45.7	44.3	43.1	46.0 ⁴
Annual growth (in real terms, exchange rate-adjusted, %)	..	14.2	12.8	16.6	16.5	-18.1	-37.6	-44.4
Share of foreign currency deposits in total deposits (%)	48.3	42.5	43.0	44.1	37.0	42.5	45.9	53.4
Deposits of households: real growth (exchange rate-adjusted, %)	..	18.0	7.8	19.2	19.2	-21.8	-43.5	-50.8
Deposit rate, households (period average, %)	..	..	..	12.0	11.3	13.3	16.3	16.7
Total loans (to resident sectors, excl. interbank, ratio to GDP in %)	79.2	67.7	61.6	57.8	62.2	67.1	65.1	73.1 ⁴
Annual growth (in real terms, exchange rate-adjusted, %)	..	-7.0	4.6	1.9	11.2	-10.0	-30.8	-42.5
Share of foreign currency loans in total loans (%)	50.9	46.0	40.3	36.8	33.8	43.1	46.3	55.9
Loans to households: real growth (exchange rate-adjusted, %)	..	-20.2	-8.2	-6.6	2.7	-16.7	-33.2	-43.5
Share of foreign currency loans in loans to households (%)	72.4	69.1	56.9	45.2	35.0	42.1	47.9	56.9
Lending rate, enterprises (period average, %)	..	..	..	14.2	14.4	13.7	14.2	14.1
Nonperforming loans (% of total loans, NBU definition)²	13.7	15.3	14.7	16.5	12.9	14.6	19.0	24.7
Nonperforming loans (% of total loans, IMF calculation)³	37.6	40.3	37.7	26.7	23.5	27.7	32.0	..
Specific provisions (ratio to total loans)	8.9	10.2	10.1	12.7	13.6	13.7	19.1	..
Ratio of large exposures to capital (%)	169.2	161.2	164.5	172.9	172.1	243.6	250.0	651.3
Loan-to-deposit ratio (%)	215.9	175.9	163.0	142.2	135.9	149.3	151.2	158.8
Holdings of securities (other than shares) (% of assets)	4.0	8.5	8.0	8.1	10.4	11.1	12.5	12.9
Banks' net external liabilities (% of total liabilities)	16.9	11.2	8.0	4.0	5.7	9.3	8.1	10.1
Capital adequacy ratio (%)	18.1	20.8	18.9	18.1	18.3	15.9	15.6	8.4
Regulatory tier 1 capital to risk-weighted assets (%)	14.2	15.1	14.0	13.8	13.9	11.7	11.2	5.5
Return on assets (ROA, %)	-4.5	-1.4	-0.6	0.5	0.1	0.0	-4.3	-5.6
Return on equity (ROE, %)	-32.8	-9.8	-4.2	3.2	0.8	0.3	-35.0	-71.8

Source: National Bank of Ukraine, IMF.

¹ Refers to all banks not meeting the capital adequacy requirements for tier 1 capital, prudential regulations and/or reserve regulations.

² National definition; break in 2012: from 2008 until the third quarter of 2012. NPLs included doubtful and loss loans, as recorded in the balance sheets. Since the fourth quarter of 2012, NPLs have been compiled on the basis of banking supervision methodology, i.e. data on NPLs comprise credit transactions attributed to the quality categories IV and V.

³ Includes NPLs that are classified as substandard, doubtful, and loss. From December 2012 onward, as estimated by IMF staff using NPL data published by the NBU according to new methodology, which results in a series break.

⁴ Estimate.

Meanwhile, deposits continued to grow strongly (by 17% in 2013), particularly those of households, supported, as before, by attractive (real) interest rates and a de facto fixed exchange rate, even if the latter was becoming increasingly detached from the real economic environment, given the country's bulging twin deficits (see above). Therefore, the loan-to-deposit ratio further decreased slightly (to 136% at end-2013), but in more and more tenuous conditions. The lending boost did not raise banks' profitability

though, which remained very weak; ROE came to 0.8% at end-2013.

2.3 Drastic crisis-triggered banking contraction (from early 2014)

The strong devaluation (from February 2014), coupled with the sharp increase of inflation and the slide into a deep recession had a substantial impact on depositors, who lost confidence and started to withdraw hryvnia as well as foreign currency-denominated deposits. As table 2 shows, total deposits (in real terms and exchange rate-adjusted)

were, year on year, 4% lower at end-March 2014, 27% lower at end-September 2014, and 44% lower at end-March 2015.²⁴ Foreign currency deposits have been exiting banks at almost the same speed as overall deposits: At end-March 2015, foreign currency-denominated accounts had shrunk 37% year on year. Total household deposits suffered a particularly deep contraction in this period: They more than halved (–51%, in real terms and exchange rate-adjusted), also due to the plummeting of the real household deposit interest

rate (from about 12% at end-2013 to about zero in the summer of 2014 and –20% in March 2015).²⁵ Withdrawals were most pronounced in eastern Ukraine: in Luhansk, household deposits shrank by almost three-quarters in nominal terms in the twelve months until end-March 2015, and, in Donetsk, they decreased by about two-thirds (see also box 1). Russian-owned banks reportedly lost a larger percentage of their deposits than other credit institutions (Standard&Poor's RatingsDirect, 2014a, p. 4; Rashkovan, 2015).

Box 1

Crimean crisis and Donbass conflict – minor versus major impact on Ukrainian banking sector

While the Russian annexation of Crimea so far does not appear to have had a major impact on Ukraine's economy and banking development, the persisting armed confrontation in the Donetsk and Luhansk oblasts (regions) – together called the Donbass – has triggered substantial negative effects across many areas. Crimea accounted for about 3.7% of Ukraine's 2013 GDP, while its 2.4 million inhabitants represented 5.3% of the country's population. As of end-2013, the exposure of the banking sector to the region corresponded to about 3.4% of deposits and 1.8% of loans. In April 2014, the National Bank of Ukraine instructed all Ukrainian commercial banks to wind up their activities in the Autonomous Republic of Crimea and the City of Sevastopol. Practically all domestic credit institutions, including foreign-owned ones, subsequently closed their affiliates on the peninsula and sold their branches or transferred assets and liabilities onto balances of banks in mainland Ukraine. On June 1, 2014, the Russian ruble was introduced as the legal tender in Crimea. Russian banks, initially led by predominantly smaller outfits, quickly expanded on the peninsula. They were soon followed by foreign-owned banks in Russia (Wirtschaftsblatt, 2014).

In eastern Ukraine, the pro-Russian separatists control a territory which hosts a number of large industrial agglomerations (including the cities of Donetsk and Luhansk). This insurgent-controlled area of the Donbass comprises about one-third of each of the two above-mentioned oblasts. About 3.7 million inhabitants lived in this area at end-2013 (8.2% of the population of the country including Crimea). About 8%–10% of Ukraine's GDP (including Crimea) in 2013 was produced in (today's) insurgent-controlled Donbass. About 70% of the country's coal was extracted in insurgent territory (Denysyuk, 2014, p. 57). Apart from this area itself, other (government-controlled) parts of the Donetsk and Luhansk oblasts and territories beyond are affected by repercussions of the conflict (e.g. damaging of infrastructure, disruption of production, interruption of transport connections, tax losses, export declines, postponements or cancellations of investment).

²⁴ Part of the contraction of deposits, of loans and of other elements of banking activity since March 2014 can be traced back to credit institutions' retreat from Crimea (which happened mostly in the second quarter, although in this case some assets were transferred to the mainland and therefore not lost) and to the limitation or impairment of their activities in the oblasts of Donetsk and Luhansk (for more information, see box 1).

²⁵ The acceleration of withdrawals probably also reflects depositors' limited trust in the Ukrainian deposit insurance (for more details, see below).

Together, the entire Donetsk and Luhansk oblasts had accounted for about 14.9% of Ukraine's GDP in 2013, for 25.2% of the country's commodity exports (but only for 7.7% of its commodity imports) in the same year, and for 15.3% of Ukrainian capital investment in the first quarter of 2014 (IMF, 2014a, p. 8). These two regions moreover comprised 11.6% of the country's total bank deposits, 12.6% of its household deposits, and 6.9% of its credit volume at end-2013. In July 2014, local branches of the NBU in Donetsk and Luhansk were shut down, but bank settlement for eastern Ukraine continued in Kiev. In early September 2014, the NBU ordered domestic credit institutions to discontinue operations of their branches in insurgent-controlled territory, while online banking apparently continues to be possible (NBU Resolution no. 466 of September 6, 2014). But also in the parts of the two oblasts controlled by the Ukrainian army, for security reasons, many branches remain closed for the time being (Die Zeit, 2014, p. 32). In a decree signed in mid-November 2014, President Poroshenko ordered the closure of all public authorities and SOEs in insurgent-controlled areas. Payments of public salaries and pensions and even gas supplies have been halted. The speed of deposit outflows from the two oblasts has been substantially higher than on average in the country over the twelve months to end-March 2015: Ukraine: -44% (in real terms, exchange rate-adjusted); accordingly (estimate) Donetsk: -77%, Luhansk: -81%. The comparative contraction of credit activity shows the following results: Ukraine: -43%, Donetsk: -66%, Luhansk: -43%.

Moreover, the substantial depreciation and momentous deposit outflow took place despite the imposition of emergency exchange controls (which indirectly points to the limited effectiveness and, possibly, to the weak institutional quality of the latter): As a first administrative measure to check the outflow, the NBU in late February 2014 limited households' foreign currency withdrawals from their bank accounts to an equivalent of UAH 15,000 per day. A monthly cap was imposed on foreign currency purchases and transfers abroad for individuals, as well as a waiting period of at least six working days established for companies and individuals. Among other measures, the NBU temporarily revoked foreign exchange trading licenses of 22 banks for "excessive speculation against the hryvnia" (IMF, 2014a, p. 8; 2014b, p. 9).

After renewed bouts of instability in the financial and foreign exchange

markets, the NBU lifted the share of mandatory sales of foreign exchange receipts by exporters and recipients of foreign currency transfers (surrender requirement) to 75%. A ban was imposed on foreign currency purchases for the conversion of dividends transferred out of Ukraine, except dividends on shares traded on the country's stock markets. The central bank furthermore stepped up monitoring the "propriety" of entities' foreign exchange operations. All payments still pending for imported goods and services half a year or more after delivery were banned. In September 2014, among other measures, individuals' foreign exchange cash purchases were cut to a maximum of UAH 3,000 (EUR 175 at the time) per day (IER, 2014, p. 9). Unfortunately, these stiff interventions seem to have provided but temporary respite, and downward pressures on the hryvnia and on (foreign currency) deposits have persisted.²⁶

²⁶ Persistent strong retail foreign currency deposit withdrawals may seem surprising at first sight, given that in a situation of substantial hryvnia depreciation pressure, one would probably expect households to convert their Ukrainian currency savings into foreign currency deposits. In this sense, administrative restrictions may have been provoking the opposite of what they were intended to achieve: Households that no longer have unconditional access to their own foreign currency savings may prefer converting these into foreign currency cash – which also points to eroding confidence in credit institutions.

Given the heavy-handedness of the controls, a gray foreign exchange market sprang up, where the hryvnia was up to 15% weaker (Raiffeisen Research, 2014, p. 5). While the inflation-devaluation cycle has continued to induce deposit withdrawals, in the face of plummeting real wages (–24.6% at end-March year on year) and spreading poverty, depositors have increasingly felt the need to dissave in order to finance their day-to-day expenses (Raiffeisen Research, 2015, p. 5). Banks' difficulties in light of withdrawals of the above dimension have been mitigated by NBU liquidity support.²⁷

The reversal of deposit flows pushed the loan-to-deposit ratio back up to 159% at end-March 2015. While loans still expanded, if at a decelerating pace in the first quarter of 2014 (see above), they contracted substantially from the second quarter (year on year in real terms, exchange rate-adjusted). Accordingly, as of end-March 2015, the contraction of total loans had accelerated to 43%, and retail credit had shrunk by 44%.²⁸ The credit crunch was not primarily triggered by reduced liquidity, but by the renewed deterioration of credit quality (because of the fall of the hryvnia and Ukraine's slide into recession) and the worsening over-

all economic outlook. Thus, NPLs increased from 13% (national definition) or 24% (IMF definition) at end-2013 to 19% and 32%, respectively, a year later.²⁹

The depreciation (exchange rate valuation effects) pushed the already high share of foreign currency-denominated loans in total loans from 34% (end-2013) to 56% (end-March 2015). Even for retail loans, the ratio rose back to 57% – a highly problematic level, given many unhedged borrowers in the household sector, particularly with regard to mortgage loans (which make up more than one-third of household loans). In any case, the share of retail credit in total credit declined from about one-quarter at end-2011 to one-fifth three years later. The rise of NPLs and the weakening of lending contributed to a decline of capital adequacy from 18.3% at end-2013 to 14.8% at end-March 2014. After some recapitalization measures, capital adequacy recovered to 16% in late 2014, but then plummeted to 8.4% at end-March 2015.³⁰ Ukrainian banks' aggregate capital adequacy thus no longer complies with the regulatory minimum level of 10% set by the NBU. Although fully up-to-date data are not yet available, the plunge is probably due to a

²⁷ The Ukrainian Deposit Guarantee Fund (DGF), which was established in 1998, also plays a role for upholding financial stability. Bank customers are reimbursed up to a value of UAH 200,000 (as of early June 2015 about EUR 8,600) per individual depositor per credit institution. The DGF is moreover slated as resolution authority for insolvent smaller credit institutions (featuring less than 2% of sector deposits or assets). The DGF receives access to public financing if there is significant risk of a decline of funds below its mandated coverage of 2.5% of insured deposits (IMF, 2014b, p. 14). Such re-capitalization measures as well as provision of liquidity took place in 2014.

²⁸ In late December 2014, NBU governor Gontareva assessed that the Ukrainian banking sector was "currently no longer functioning" (Die Presse, 2014).

²⁹ Another credit quality indicator, the share of overdue loans in total loans, reached 14% at end-2014, which is almost twice as high as it had been at end-2013.

³⁰ The ratio of regulatory tier 1 capital to risk-weighted assets also dropped to a record low of 5.5% at end-March 2015 (table 2).

further dramatic deterioration of credit quality.³¹

The crisis situation caused serious problems especially for small and medium-sized banks and some of them were not able to cope. The number of credit institutions has been decreasing since March 2014 when the NBU started to clean the sector of problem banks, including many pocket banks unable or unwilling to recapitalize themselves (chart 4). Altogether 33 banks were recognized as insolvent in 2014 with UAH 140 billion of assets accounting for about 11% of total banking sector assets. There are UAH 25 billion of insured deposits to be repaid via the Deposit Guarantee Fund in these banks. The depositors are being repaid within several months. In the first six weeks of 2015, another seven banks with assets of UAH 59 billion (about 4% of total assets) and UAH 10 billion of insured deposits were declared insolvent.

More seriously, in early March 2015, Deltabank, the fourth-largest credit institution (accounting for about 5% of total banking assets), owned by a Ukrainian businessman, was declared insolvent (Kravchuk, 2015). The further multiplication of the ratio of large exposures to capital in the first quarter of 2015 to 651% probably mostly reflects better measurement. As mentioned above, with the deepening recession, credit quality and capitalization are bound to weaken further and therefore more bank failures are expected even if there are recapitalization

plans. The above-mentioned developments have also influenced the ownership structure of the banking sector. As depicted in chart 3, the share of state-controlled banks has increased at the expense of the private banks. Russian-owned foreign banks slightly increased their share, which might, however, be the result of revaluation effects (Raiffeisen Research, 2014, p. 6).

In contrast to shrinking lending activities, the share of banks' holdings of securities (other than shares) in total assets increased (to about 13% at end-March 2015); the share of claims on the NBU and the central government together slightly rose (to around 14%).³² At the same time, refinancing or liquidity-enhancing measures probably explain the increase of credit institutions' debt to the NBU from 6% (end-2013) to 8% (end-March 2015) of their total liabilities. As a result of all adverse developments, the banking sector's profitability turned (back) deeply into negative territory. At end-2014, return on assets plunged to -4% and return on equity to -35%; three months later, the respective indicators had further sharply deteriorated. This change occurred primarily on account of the recognition of large losses revealed, inter alia, by diagnostic studies referred to below. Loan-loss provisions rose from 3.2% of total loans at end-2013 to 9.8% a year later.

As part of the IMF program, diagnostic studies and asset quality reviews were undertaken for the 35 largest banks. Based on reported bank data for

³¹ In the framework of the IMF Extended Fund Facility, the NBU reached an agreement with the IMF to allow for some temporary regulatory forbearance. Accordingly, the central bank (in Resolution no. 313 of May 12, 2015) requires credit institutions to reach a capital adequacy level of at least 5% by February 1, 2016, of at least 7% by late 2017, and of at least 10% by late 2018 (Interfax Ukraine, 2015).

³² The NBU and SOBs provide most of the local currency financing of the fiscal deficit. As of mid-2014, the monetary authority held 63% of government hryvnia debt and domestic banks held 29% (Standard&Poor's RatingsDirect, 2014a, p. 4).

Chart 4

Assets and insured deposits of insolvent banks as at mid-February 2015

Source: National Bank of Ukraine.

May 2014,³³ IMF staff stress tests estimated that the NPL ratio (NBU definition) would – under the chosen baseline – increase by about half by end-2016 (i.e. to 21%–22%);³⁴ under an adverse scenario the NPL ratio would almost double (i.e. rise to 27%–28%). Assuming that banks were to sustain a provision ratio of 60% of NPLs, the sector would need to receive fresh capital in the range of 3.5%–5% of GDP to meet a tier 1 capital target of 7% (IMF, 2014b, pp. 12–13). However, with hindsight, the stress-testing methodology was based on relatively mild

macroeconomic assumptions and had not factored in repercussions (including the plunge of the hryvnia) of the persisting hostilities in the east. Unfortunately, it is all but certain that recapitalization and bailout needs for Ukrainian banks will be substantially higher. In its latest assessment of the state of the Ukrainian banking sector on the occasion of the IMF's approval of the Extended Fund Facility in mid-March 2015, IMF staff estimated that the sector was in need of a capital injection of 9%–10% of GDP (IMF, 2015a, p. 20; Donnan, 2015).

³³ As of early June 2015, no updated diagnostic studies have yet been published.

³⁴ As mentioned above, the NPL ratio had already reached 19.0% at end-2014.

Table 3

Foreign banks having left the Ukrainian market (2009–early 2015)¹

Year	Name of bank	Nationality	Action	Buyer information
2009	Home Credit Bank	Czech Republic	100% exit sale to Platinum Bank	Horizon Capital (45%), East Capital (25%), International Financial Corporation (IFC, 5%), FPP Asset Management (4%), bank management (17%)
2009	Dresdner Bank	Germany	Liquidation of representative office	
2010	Renaissance Credit	Russia	Acquisition by SCM (Ukraine)	Rinat Akhmetov (100%)
2010	HSBC	U.K.	Closure of representative office	
2011	Bayerische Landesbank	Germany	Closure of representative office	
2011	Kookmin Bank	South Korea	Closure of representative office	
2011	Conversbank	Russia	Acquisition by Global Financial Management Group (Ukraine)	Ukrainian private investors (100%)
2011	Bank of Georgia	Georgia	80% exit sale to private investors	Ukrainian private investors
2011	Vostok Bank	International (Platinum Bank)	100% exit sale to private investors	Ukrainian private investors
2012	Volksbank	Austria	100% exit sale to Sberbank of Russia	Central Bank of Russia (52.32%), free float (47.68%)
2012	SEB Bank	Sweden	100% exit sale to Fidobank	Consulting firm "Finans Analit Servis," Ukraine (79.9%); Ignace Marketing Limited, Cyprus (20%)
2012	Commerzbank (Bank Forum)	Germany	100% exit sale to "Smart Holding," Ukraine	Cyprus-based Yernamio Consultings Ltd, controlled by Vadim Novitsky (98.68%)
2012	Societe Generale (Profin Bank)	France	100% exit sale to Alfa-Bank, Ukraine	ABH Ukraine Limited, Cyprus (part of Alfa Group, Russia) (80.1%); Alfa-Bank, Russia (19.9%)
2012	Erste Bank	Austria	100% exit sale to Fidobank	Consulting firm "Finans Analit Servis," Ukraine (79.9%); Ignace Marketing Limited, Cyprus (20%)
2013	Swedbank	Sweden	100% exit sale to Delta Bank, Ukraine	Nikolai Lagun, Ukraine (70%); Cargill Financial Services, U.S.A. (30%)
2013	Astra-Bank	Greece	100% exit sale to Delta Bank, Ukraine	Nikolai Lagun, Ukraine (70%), Cargill Financial Services, U.S.A. (30%)

Source: Raiffeisen, various bank websites, Fungáčová and Korhonen (2014).

¹ In 2014 and early 2015, no exits of medium- or large-sized foreign-owned banks from the Ukrainian market were observed.

3 Assessment of current Ukrainian banking risks and shock-absorbing factors

Apart from multiple macroeconomic and structural shortcomings that the authorities are currently tackling, the salient problem affecting Ukraine's economy and banking sector is the country's strong exposure to geopolitical tensions and conflict with Russia. Notwithstanding successful presidential and parliamentary elections in 2014, there is also the danger of a potential

resurfacing of domestic political instability, given the economic hardship that the population is facing. The loss of Crimea, the continuing armed confrontation and hostilities in the east, and recurrent trade disputes and frictions with Ukraine's large northern and eastern neighbor have generated major uncertainty and severely harmed the country's investment climate.³⁵ Apart from preventing insolvency, IMF and multilateral support has not yet decisively changed the economic situation.

³⁵ President Poroshenko recently underlined the key importance of overcoming the crisis in the east for rekindling economic growth: "As long as the war continues, there will be no investment in Ukraine" (Vitkine, 2015, p. 4).

Weak global conditions and sluggish growth in the EU have not helped either. While the NBU has recently made visible progress in cleaning the banking sector of a number of smaller unviable entities, as of June 2015, the two most serious risks facing Ukrainian banks are partly connected and continue to reinforce each other: high credit risk and high exchange rate risk.

3.1 High credit risk

The high credit risk reflects elevated and rising NPLs (depending on the definition, they constituted between 19% and 32% of total loans at end-2014), which are being driven up by the ongoing recession and thus borrowers' worsening business prospects. Another influence comes from the huge devaluation of the hryvnia that primarily affects unhedged debtors – often households. On account of this devaluation, as of end-March 2015, foreign currency loans made up 56% of total loans and 57% of household loans in Ukraine.³⁶

3.2 High exchange rate risk

The high exchange rate risk stems from the already substantial fall (55%–65%) of the Ukrainian currency between February 2014 and March 2015, despite the imposition of cumbersome capital controls, and from continuing downward pressures. The latter are fueled by persisting external disequilibria (current account deficit, gross foreign debt), by the low level of international reserves and by generally weak confidence in the hryvnia. The background

to this fragility includes persistent geopolitical risks weighing on the country, and more generally, Ukraine's feeble financial standing, in that the country currently remains dependent on international (IMF) financial assistance to uphold its solvency. The most recent slide of the hryvnia in February 2015 has put further pressure on asset quality and bank profitability.

3.3 Liquidity risk

Liquidity risk is also sizeable, if so far not as difficult to master as the challenges referred to above. Notwithstanding administrative restrictions to deposit withdrawals, macroeconomic instability and low confidence in banks and deposit insurance have triggered mounting outflows from bank accounts and capital flight. However, despite the strong segmentation of the interbank market, negative effects have hitherto been mitigated by NBU liquidity injections into the sector (exceeding 8% of the banks' total liabilities as of end-2014).

3.4 Low profitability, entrenched related-party lending, and other challenges

Other challenges include chronically low or negative profitability, which has contributed to the exit of numerous foreign banks over the years or their intention to do so if they find buyers. In this connection, there is a risk of disorderly deleveraging.³⁷ Other chronic structural problems and sources of weakness are: substantial lending con-

³⁶ The currency composition of these loans was: total loans: 91.1% U.S. dollar, 7.8% euro, 0.5% Russian ruble; household loans: 95.6% U.S. dollar, 2.0% euro.

³⁷ This option is pointed out in a surprisingly straightforward manner in a recent report of Standard&Poor's, which is essentially repeated in a later report: "In our view, parental support in the form of additional liquidity lines or capital injections remains possible, but not certain, because providing support might ultimately be more costly than letting banks default. However, the parent banks do run reputational risk if support is not forthcoming." (Standard&Poor's RatingsDirect, 2014b, p. 11; 2015, p. 3).

centrations to single borrowers, high related-party lending³⁸, weak rule of law and protection of creditor rights, feeble corporate governance, deeply entrenched corruption and state capture³⁹.

As long as the military stand-off in the east continues, a fair share of the authorities' attention and energy will be absorbed by the conflict, which may at least distract from the in-depth structural and institutional reforms necessary. In the worst case, the conflict could serve as an excuse for putting off or slowing down effective implementation of important but politically delicate adjustments.

3.5 Shock-absorbing factors

After capital cushions have dwindled – the capital adequacy ratio almost halved to 8.4% in the first three months of 2015 –, IMF support and international financial commitment effectively remain the most important shock-absorbing factor for the Ukrainian banking system. Strong downward pressures on credit quality are likely to continue to increase provisioning needs. This will probably make necessary substantial additional capital injections from private bank owners and the state. Where private owners are not able to fill the gap, the government may have to step in and nationalize failing systemic institutions in order to avoid a systemic crisis. However, the government itself is in a very precarious financial situation, as witnessed by its attempts to negoti-

ate a large-scale restructuring of its foreign debt. Given the size of the overall amount that may be necessary to recapitalize banks, domestic sources alone will probably not be able to shoulder the entire burden. Here the most important shock-absorbing factor comes in: the IMF Extended Fund Facility and the unwavering commitment of the international community, particularly Western countries, and Ukraine's creditors, to financially assist the Ukrainian authorities. The question, however, remains if the funds provided by these sources will be sufficient.

4 Outlook

Most forecasts expect no meaningful recovery of the Ukrainian economy before 2016.⁴⁰ Recovery will be strongly dependent on the evolution of political and security factors, notably pertaining to the conflict in the east of the country. Of course, once the base effect of the severe slump of production in the Donbass has passed in the course of 2015, the latter's adverse statistical impact on economic activity will be less pronounced. If stifling capital controls are maintained, this will not have a positive impact on business activity. After having incurred losses in 2014 and notwithstanding the likely bailout of some systemically important institutions, the banking sector will not be able to generate sufficient margins in the second deep recession year of 2015 to buffer the increased credit risks. Hence, the banking sector is very likely

³⁸ *Opaque ownership structures and credit schemes have undermined attempts of the NBU to effectively limit banks' exposures to insiders (IMF, 2015a, p. 19). According to NBU estimates, connected lending comprises 60%–70% of the assets of some banks (Eschbacher, 2015).*

³⁹ *To give an illustration: According to Transparency International's Corruption Perceptions Index 2014, Ukraine is ranked as the least transparent country in Europe, and the fourth-least transparent country of the former Soviet Union (following Turkmenia, Uzbekistan and Tajikistan) (Transparency International, 2014, p. 9).*

⁴⁰ *The latest forecasts of the IMF, the EBRD and the The Vienna Institute for International Economic Studies (wiiw) (April–May–June 2015) for Ukraine's economic growth in 2015 are as follows: –9.0%, –7.5% and –7.0%, respectively. In 2016, the IMF and the EBRD expect the country to return to the growth path (+2.0%, +3.0%), and the wiiw expects stagnation (0.0%).*

to remain in the red, with some banks set to face serious troubles connected with possible closure. Accordingly, further banks may try to exit the market, including foreign banks, if they find a buyer for their assets. These developments might significantly change the Ukrainian banking landscape, with the state most likely to assume a more important role.

A turnaround for the sector can only be expected when the recession bottoms out (probably in 2016) and, more importantly, when geopolitical tensions ease, and therefore investor confidence finally returns. Yet even at that point, based on previous experience, banking activity will likely lag overall economic growth, due to the then probably still high NPLs that are bound to dampen new lending.

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Foreign currency borrowers in Austria – evidence from the Household Finance and Consumption Survey

We analyze the structure and distribution of households with a foreign currency loan on the basis of micro-level information provided by the Eurosystem Household Finance and Consumption Survey (HFCS) for Austria. Almost 4% of the Austrian household population have a foreign currency loan, which in most cases is used to finance real estate. An extensive set of risk indicators that we estimated suggests that these households have a relatively high risk-bearing capacity. However, a dynamic analysis shows that unrealized losses due to recent exchange rate developments have increased: The median exchange rate of households' highest mortgage has decreased by about 32%, from CHF/EUR 1.6 at the time the mortgage was taken out to CHF/EUR 1.1 in January 2015. To evaluate different potential characteristics that may have been important for choosing a foreign currency loan instead of a loan in domestic currency, we set up a two-stage econometric model. We find that one of the most important determinants of currency choice is the interest rate differential between Austria and Switzerland at the time the loan was taken out. An increase of 1 percentage point in this differential increased the probability of having a foreign currency loan by 16 percentage points. In contrast, exchange rate variation did not seem to play a statistically significant role in the loan currency decision.

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JEL classification: D12, D14, F34, F37, G15, G21

Keywords: FX borrowing, mortgages, banking sector, Austria, Swiss francs

After booming for almost two decades, foreign currency (FX) loans to Austrian households have been declining continuously since fall 2008. Between late 2008 and end-2014, the amount of FX loans (measured in euro and adjusted for exchange rate effects) shrank by almost 53%. This was mainly the result of several supervisory measures implemented in recent years to reduce the risks of FX loans and loans linked with repayment vehicle.

In 2003, the Austrian Financial Market Authority (FMA) issued its Minimum Standards for Granting and Managing Foreign Currency Loans and Loans with Repayment Vehicles (“Minimum Standards”), which aimed at improving the FX loan-related risk man-

agement of banks. In 2006, the FMA published an information brochure² for bank customers to raise households' risk awareness in connection with FX loans. Following the financial crisis, the FMA urged banks not to grant FX loans to households and extended its Minimum Standards in March 2010, recommending stronger rules for granting new FX loans. For instance, FX loans should be granted only to customers with high creditworthiness or with income in the currency in which the loan is denominated. Moreover, at the European level in the fall of 2011, the European Systemic Risk Board (ESRB) published a set of seven recommendations to curb lending in FX. Finally, in 2013, the FMA issued new

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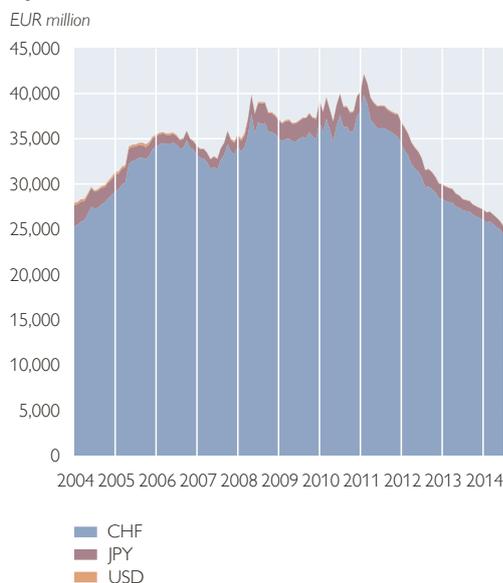
² https://www.fma.gv.at/typo3conf/ext/dam_download/secure.php?u=0&file=5509&t=1425988084&hash=0f66b4f5d75d2cc0c56e6b31b8ca7f85, retrieved on March 9, 2015.

Refereed by:
Sónia Carvalho
Costa,
Banco de Portugal

Chart 1

Loans to households in FX

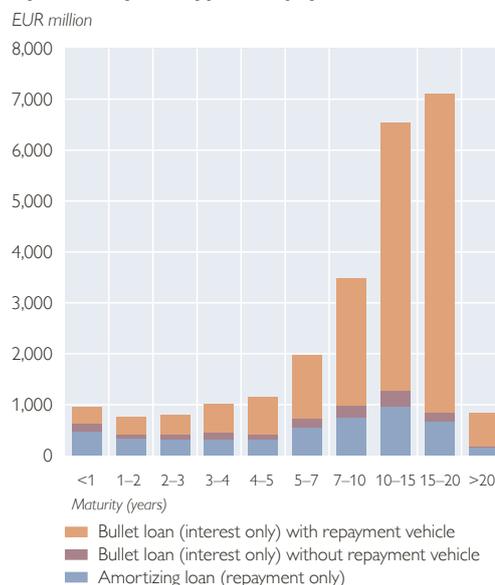
By FX



Source: OeNB.

Note: As at end-December 2014.

By maturity and type of repayment



Minimum Standards,³ taking into account the ESRB recommendations and the supervisory experience gained so far.

However, the real decline in FX lending has been offset by the appreciation of the Swiss franc, both before the Swiss central bank established the exchange rate ceiling in late summer 2011 and also after it removed it on January 15, 2015. This is due to the fact that loans to households in Swiss francs are by far the most common type of FX loans in Austria, accounting for more than 95% of all household loans in FX (see chart 1, left-hand panel). Between 2007 and 2011 (before the introduction of the exchange rate ceiling), the Swiss franc appreciated by 30% and since

January 15, 2015, it has appreciated by a further 11%.⁴

FX loans also carry risks other than exchange rate risks. FX borrowers should additionally take into account interest rate risk, the performance risk of the repayment vehicle in case of a bullet loan, and, finally, the risk of “unplanned costs” (e.g. the potential burden of hedging against unfavorable interest or exchange rate developments, the cost of switching the loan currency made necessary by repayment problems or the need for higher collateralization in case of unfavorable exchange rate developments).⁵

As can be seen in chart 1, by the end of 2014, Austrian households held more than EUR 25 billion outstanding

³ https://www.fma.gv.at/typo3conf/ext/dam_download/secure.php?u=0&file=8939&t=1425987697&hash=d48e3ff32bf97f0c363e633958e21859 (retrieved on March 9, 2015).

⁴ As on March 8, 2015.

⁵ For further information about the functioning of FX lending in Austria, see Waschiczek (2002), Tzanninis (2005) or Beer et al. (2010).

loans in FX. This is almost 20% of the total amount of loans made to households in Austria, and – as can be seen in the right-hand panel of chart 1 – many of them will mature over the next 7 to 10 years.

In this paper we exploit the detailed micro-level information provided by the Eurosystem Household Finance and Consumption Survey (HFCS) 2010 for Austria to give an in-depth analysis of the structure of FX borrowing in Austria on the household level.⁶ The analysis focuses in particular on the following questions: What are the structure and distribution of FX loans in comparison to euro-denominated debt? What is the risk-bearing capacity of FX loan holders? And what are the reasons why households chose a FX loan over a euro-denominated loan?

The paper is structured as follows: Section 1 presents the data we use. In section 2, the distribution, the components and the household structure of FX debt are discussed. In section 3, we analyze the risk-bearing capacity of FX borrowers. In section 4, the determinants for holding FX debt and their marginal effects are presented and discussed, and section 5 concludes.

1 Data

The data for this analysis are taken from the first wave of the HFCS in Austria, which was conducted in 2010 and 2011. The HFCS is a euro area-wide project coordinated by the European Central Bank (ECB).⁷ The OeNB is responsible for conducting the survey in Austria. HFCS data provide detailed informa-

tion on the whole balance sheet as well as several socioeconomic and sociodemographic characteristics of households in the euro area.⁸ In this study, we additionally use some specific variables for Austria which are not publicly available. In particular, the information on FX loans is not part of the core variables of the HFCS but is additionally collected in Austria due to the high prevalence and thus importance of this type of credit.

The results reported in the present paper apply to households in Austria only. Unless otherwise noted, all estimates are calculated using the final household weights and the survey's multiple imputations provided by the data producer (see Albacete et al., 2012b, for a detailed description of the survey methodology in Austria).⁹

We define a household's debt stock as the sum of the outstanding balance of mortgage debt and the outstanding balance of nonmortgage debt. Nonmortgage debt includes all liabilities that are not collateralized with real estate, i.e. consumer loans, credit lines/overdrafts, and credit card debt above the monthly repayment, but does not include leasing contracts. The data provide information about the currency of mortgages and consumer loans but no information about the denomination of other nonmortgage debt; however, we find it reasonable to assume in the present analysis that this share of nonmortgage debt, which concerns only sight accounts and credit cards, is held in euro. Gross wealth is defined as the sum of total real assets (main residence, other real estate property, vehicles,

⁶ A general analysis of household debt and vulnerability based on the HFCS in Austria can be found in Albacete and Lindner (2013).

⁷ The HFCS is envisaged to be conducted about every three years. The HFCS in Austria has no panel component.

⁸ In the first wave of the HFCS, 15 out of the 17 euro area countries at the time of the field period collected the data. Estonia and Ireland will be included in the second wave, together with the new euro area country Latvia.

⁹ An extensive methodological documentation of the euro area HFCS can also be found in ECB (2013).

valuables, and self-employment businesses) and total financial assets (deposits, mutual fund shares, bonds, non-self-employment private businesses, publicly traded shares, managed accounts, money owed to households, voluntary pension/whole life insurance contracts and other financial assets).

There are 2,380 households in the net sample of the HFCS in Austria. Of these 2,380 households, 803 hold debt. 77 of this share have debt in FX whereas 726 have debt only in euro. These figures underline the necessity of using a relatively large survey sample in order to be able to analyze the group of FX loan holders in Austria. The sample size of the first wave of the HFCS in Austria and hence the number of observations restricts the estimation of subpopulations of FX loan holders. In the tables, cells with fewer than 15 observations are suppressed.¹⁰

2 Foreign currency debt

This section first examines the structure and distribution of FX debt of

Austrian households and its components, i.e. FX mortgages and FX non-mortgage debt. We then explore the relationship between some of households' most important socioeconomic characteristics and their debt in FX. To highlight the specifics of FX debt, we compare the latter to debt held in euro.

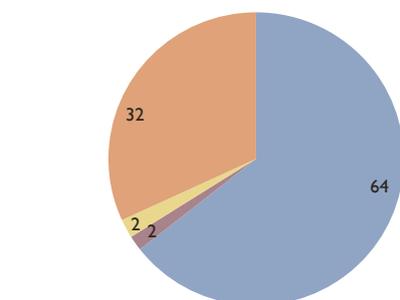
2.1 Distribution of foreign currency debt

The left-hand panel of chart 2 breaks down all households into four groups by their debt status (no debt, debt only in FX, debt in FX and euro, debt only in euro) and shows the percentages of households in the respective groups. Almost 4% of the Austrian household population have FX loans, which are around 150,000 households. Half of them also hold debt in euro, the other half has only debt in FX. Households holding debt only in euro are a larger group, accounting for around 32% of Austrian households. The remaining 64% of households do not have debt, representing the largest group by far.

Chart 2

Distribution of households and their debt

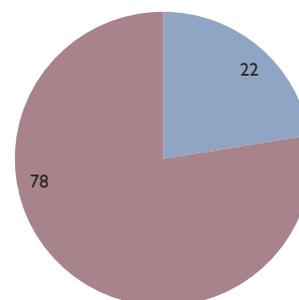
Households
%



■ No debt
■ Debt only in FX
■ Debt in euro and FX
■ Debt only in euro

Source: HFCS Austria 2010, OeNB.

Debt
%



■ FX debt
■ Euro debt

¹⁰ Some potentially interesting classifications were not discussed due to our relatively small sample.

The right-hand panel of chart 2 breaks down the aggregate debt of all households by currency. At 78%, euro debt accounts for the largest share in total household debt. However, foreign currency debt makes up the remaining 22% of total household debt, which is relatively high compared to the proportion of households holding these liabilities. This figure compares to national accounts data, according to which about 20% of aggregate debt is held in FX. We may therefore assume that HFCS data capture the relation reasonably well.

In order to investigate the distribution of FX debt, we estimate nine conditional percentiles which divide all the households with FX loans into ten identically large groups (i.e. deciles) sorted in ascending order according to their FX debt level. We proceed analogously for households with euro-denominated debt. Accordingly, chart 3 breaks down the Austrian household population with FX (euro) loans into deciles of around 15,000 (128,000) households each. One-tenth of Austrian households with FX debt have FX debt of less than EUR 14,000, and one-half have FX debt of less than some EUR 70,000. By contrast, about one-fifth of households

with FX debt have FX debt of more than EUR 140,000, and one-tenth have FX debt of more than some EUR 240,000. The mean of Austrian households' FX debt is around EUR 100,000 and hence is in the seventh decile. This implies that more than three-fifths of households have less FX debt than the average. The finding illustrates the slightly positively skewed distribution of FX debt.

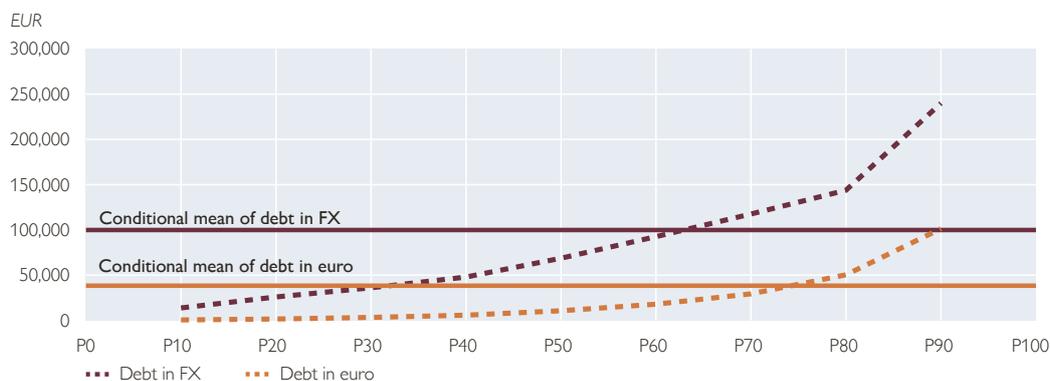
All FX debt values are relatively high compared with euro debt values, as illustrated by the fact that all percentiles of FX debt are above the respective figures of euro-denominated debt. When interpreting this result, it must be borne in mind that FX loans, in contrast to euro loans, are usually bullet loans, in which the principal is repaid at the end of maturity. The finding that FX debt is generally higher is also linked to the structure of FX loans, which are almost exclusively mortgage loans (see also below). We also see that FX debt is more dispersed than euro debt.

2.2 Components of foreign currency debt

Household FX debt is the sum of two components: FX mortgage debt and FX

Chart 3

Households with debt in FX versus euro-denominated debt: percentiles and mean



Source: HFCS Austria 2010, OeNB.

Table 1

Types of debt in FX vs euro-denominated debt

	Participation conditional on having FX debt	Debt in FX		Participation conditional on having debt in euro	Debt in euro	
		Median	Mean		Median	Mean
		EUR	EUR		EUR	EUR
Mortgage loans	97.0	71,296	101,730	46.9	29,680	64,894
Nonmortgage debt	3.0	. ¹	. ¹	62.7	3,016	12,533

Source: HFCS Austria 2010, OeNB.

¹ „..“ indicates that the estimation result had to be suppressed due to an estimation sample of fewer than 15 observations.

nonmortgage debt. FX debt can be analyzed in more detail at the level of these two components. We perform this analysis in two steps: First we determine household participation in a specific FX component, i.e. how many FX borrowers have this component of FX debt. Second, we compute the median and the mean for the households with this debt component.

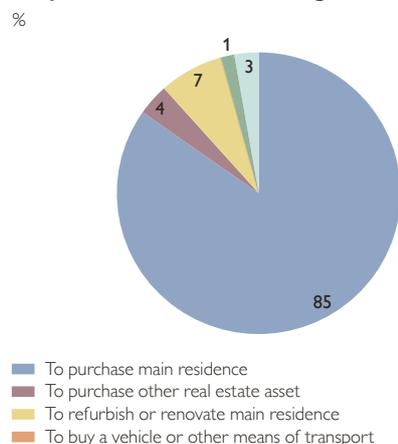
Mortgage loans are by far the most common component of FX debt among Austrian households (see table 1). Almost 97% of FX borrowers have at least

one FX mortgage loan. The average value of these loans is about EUR 102,000 (i.e. very close to the overall mean of FX debt). Only 3% of FX borrowers have FX nonmortgage debt, whose average value is much lower than that of mortgage loans. This suggests that FX loans are almost exclusively used to finance real estate. Nonmortgage debt is much more common in euro-denominated borrowing. While 63% of euro debt holders have euro nonmortgage debt, only 47% have euro mortgage loans.

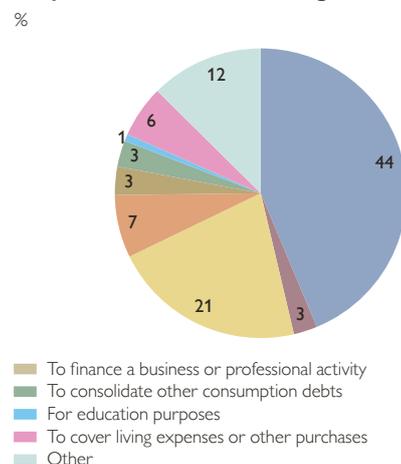
Chart 4

Distribution of households by main loan purpose – FX versus euro loans

Purpose of the household's highest loan in FX



Purpose of the household's highest loan in euro



Source: HFCS Austria 2010, OeNB.

In mortgage loans, real estate is used as collateral; importantly, over the past few years, the prices of real estate have not decreased. This fact, and a median loan-to-value (LTV) ratio for FX loans of significantly less than 100% (see section 3) suggest that FX borrowers have sufficient resources to cover the potential costs of the additional risks of a FX loan.

In the left-hand panel of chart 4 we break down households with loans in FX by the main purpose of their highest FX loan into several classes and show the percentages of the households in the respective classes. The right-hand panel shows the same information for households with loans in euro. Clearly, the majority of FX borrowers (85%) used their FX loans to purchase their main residence.

Another 7% took out a FX loan to refurbish or renovate their home, and only a very small fraction of 4% of FX loan holders used this form of credit to consolidate consumption debt or cover other expenses. This is in stark contrast to euro borrowers, among whom only 44% used their highest euro loan to purchase their home. 21% used it to refurbish or renovate their home, 7% to buy a vehicle, and 6% to cover living expenses.

2.3 Household structure of foreign currency debt

In addition to loan-level information on households' FX debt, the HFCS also compiles economic and socio-demographic household information, which allows us to investigate the distribution of household characteristics among FX borrowers. Table 2 shows a breakdown of household FX debt by household characteristics.¹¹

The data for the gross income percentile and the gross wealth percentile in table 2 show that around 83% of FX loan holders receive above-median income and that almost all FX loans are held by households with above-median wealth. This suggests that in general, most FX loan holders are affluent households. We can also see that FX debt levels rise with household size. While one-person households – at 18%, the smallest group of households with FX debt in Austria – have median FX debt of around EUR 54,000; this value rises to about EUR 71,000 for two-person households. One reason for this gap is that two-person households are more likely to have higher resources or collateral to afford higher debt. The breakdown by age shows that FX debt tends to be lower for households with an older reference person. Both the median and mean values rise from the youngest age group up to the 40- to 49-years age group and are markedly lower for households with an older reference person.¹² The fewest FX loan holders are in the oldest age group. These results may be indicative of changes in borrowing constraints or demand over the life cycle. The breakdown of FX debt by the reference person's education level shows that there are only marginal education-specific differences in the average value of FX debt; median FX debt, however, is about EUR 69,000 for households with a reference person without a tertiary degree and only EUR 59,000 for those with a tertiary degree. Most (about 80%) of FX borrowers own their main residence. These households also hold larger FX debt than those who do not own their homes: both the median and the mean are about EUR 20,000 higher

¹¹ As was already mentioned above, some cells have to be suppressed due to a low number of observations.

¹² The households's reference person is defined as the household member with the highest income.

Table 2

Debt in FX vs euro by household characteristics

	Debt in FX			Debt in euro		
	Share in households with debt in FX	Median	Mean	Share in households with debt in euro	Median	Mean
	%	EUR	EUR	%	EUR	EUR
Gross income percentile						
1–50	16.9	.. ¹	.. ¹	39.3	4,270	20,811
51–100	83.1	65,119	102,421	60.7	18,000	49,642
Gross wealth percentile						
1–50	3.1	.. ¹	.. ¹	42.2	3,080	10,702
51–100	96.9	72,178	101,916	57.8	23,014	58,476
Household size						
1 hh member	18.0	.. ¹	.. ¹	29.8	3,558	18,631
2 hh members	29.1	71,046	102,697	29.7	11,253	31,861
3+ hh members	52.9	76,992	109,256	40.5	22,579	57,589
Age of reference person						
16–39	38.5	82,565	100,475	31.6	10,846	45,778
40–49	38.5	85,506	117,527	28.6	19,756	44,007
50+	23.0	43,200	71,171	39.8	8,340	28,368
Education of reference person						
No tertiary degree	74.7	68,614	99,199	86.0	9,588	36,788
Tertiary degree	25.3	58,965	101,971	14.0	20,605	47,826
Ownership of main residence						
No	19.4	.. ¹	.. ¹	44.2	3,323	12,575
Yes	80.6	72,089	104,077	55.8	23,823	58,742
Region						
Eastern Austria	32.4	74,311	119,159	43.5	9,220	30,714
Southern Austria	32.4	60,351	80,765	20.8	9,473	36,505
Western Austria	35.2	65,643	99,453	35.7	14,884	48,694

Source: HFCS Austria 2010. OeNB.

¹ „..“ indicates that the estimation result had to be suppressed due to an estimation sample of fewer than 15 observations.

Note: The regions in Austria are based on the NUTS-1-level codes. Eastern Austria: Burgenland, Lower Austria and Vienna; southern Austria: Carinthia and Styria; western Austria: Upper Austria, Salzburg, Tyrol and Vorarlberg. The household's reference person is defined as the household member with the highest income.

for homeowners. Finally, the breakdown by region shows that FX debt is lowest among households living in southern Austria, with an average FX debt of about EUR 81,000, and highest among households living in eastern Austria, with around EUR 120,000, probably partially reflecting the higher housing prices in Vienna.

Comparing the structure of FX debt with that of euro debt shows great similarities across most household characteristics. The main difference is a regional one: households living in eastern Austria have relatively low euro debt compared to households in western Austria. This may be explained by the

fact that average income and wealth are lower in eastern Austria. Comparing the shares we can see that the proportion of households with a reference person with a tertiary degree is higher among households with FX loans than among households with euro debt. About one-fourth of households with a FX loan have a reference person with a tertiary degree while the respective figure for households with euro-denominated loans is only 14%.

3 Risk-bearing capacity of FX borrowers

The empirical literature using household-level data about FX loans can be

divided into (1) studies analyzing the determinants of the decision to take out a FX loan (which we discuss in section 4) and (2) studies analyzing the effects of holding FX loans on households' financial vulnerability.

Albacete et al. (2012a) study the effects of FX loans on households' financial vulnerability in Austria, and Beckmann et al. (2012) look at the same topic for Central and Eastern European countries (CEECs). Albacete et al. (2012) use data from the Household Survey on Housing Wealth 2008 to estimate conditional counterfactual distributions in order to calculate the differences in terms of risk buffers between Austrian FX borrowers and their domestic currency counterparts, and they find that FX borrowers have substantially higher risk buffers measured in terms of household real estate wealth, household income and potential rental income.

Beckmann et al. (2012) find a non-negligible impact of FX loans on financial vulnerability (i.e. loan arrears) in CEECs. However, higher loan delinquency rates in depreciation countries can only partly be explained by FX borrowing; in particular, income shocks were found to exert a stronger impact.

This section presents a large set of risk indicators obtained from the HFCS in order to assess the risk-bearing capacity¹³ of FX borrowers. The set can be divided into four groups: household characteristics, properties of a household's highest loan, subjective risk measures and debt ratios.

The first group includes variables describing general socioeconomic characteristics of households, such as income, wealth, negative net wealth, unemployed reference person or risk aversion.¹⁴ The second group includes the properties of a household's highest loan that are relevant for a risk assessment of the household, such as the interest rate, adjustable or fixed interest rate, total maturity of the loan or its remaining maturity. The third group of risk indicators consists of the household's self-assessment, e.g. whether expenses were above income in the last 12 months, whether expenses were higher than average in the last 12 months, or whether the household would be able to get EUR 5,000 from friends. The last group also includes objective risk measures, such as the initial LTV ratio at the time the mortgage was taken out, the current LTV ratio, the debt-to-assets ratio, the debt-to-gross income ratio, or the debt service¹⁵-to-gross income ratio.

Table 3 shows the means or medians of these indicators for households with debt in FX and compares them with those of households with exclusively euro-denominated debt. For the convenience of the reader, column 3 shows the differences between the two subpopulations. FX borrowers have considerably higher median gross income and net wealth than non-FX borrowers. Also, the top 5% wealth class is more often represented among FX borrowers. Furthermore, there are substantially fewer households with nega-

¹³ Further information on the risk-bearing capacity of households in Austria can also be found in Albacete and Linder (2013) and Albacete et al. (2014).

¹⁴ We measure risk aversion with the following question: "Which of the following statements comes closest to describing the amount of financial risk that you (and your husband/wife/partner) are willing to take when you save or make investments?" We classify a household as risk averse if its answer was "Not willing to take any financial risk", and we classify it as not risk averse in all other cases.

¹⁵ Payments into the repayment vehicle linked to a FX loan are not defined as part of the debt service of FX loans, since these loans are repaid at the end of maturity.

Table 3

Risk indicators for households with FX debt and households with euro debt

	Households with debt in FX	Households with debt only in euro	Difference
Household characteristics			
Gross income (EUR, median)	63,102	38,633	24,469
Net wealth (EUR, median)	212,794	87,234	125,559
Part of top 5% wealth class	6.8	6.0	0.9
Has negative net wealth	7.8	15.7	-7.8
Unemployed household reference person ¹	5.6	5.7	-0.1
Risk averse household	50.4	57.7	-7.3
Properties of highest loan			
Interest rate (median)	2.274	2.900	-0.626
Proportion with adjustable interest rate	76.2	66.4	9.8
Total maturity (median)	20	19	1
Remaining maturity (median)	16	12	4
Subjective risk measures			
Households whose expenses exceed income	11.7	19.8	-8.1
Households with above-average expenses	34.2	35.8	-1.6
Households able to get EUR 5,000 from friends	68.0	52.4	15.5
Debt ratios			
Initial LTV ratio for main residence (median)	0.776	0.517	0.259
LTV ratio for main residence (median)	0.379	0.138	0.240
Debt-to-assets ratio (median)	0.252	0.148	0.104
Debt-to-gross income ratio (median)	1.411	0.281	1.130
Debt service-to-gross income ratio (median)	0.113	0.090	0.023
Number of households	77	726	

Source: HFCS Austria 2010, OeNB.

¹ The reference person is defined as the household member with the highest income.

Note: Households whose highest loan was not a mortgage are excluded from the computation of interest rate and remaining maturity. Households without loans but with other nonmortgage debt are excluded from the computation of the proportion with adjustable interest rates and total maturity.

tive net wealth among FX loan holders, fewer households whose expenses are above income or above average, more households that are able to get money from friends, fewer unemployed households, and mortgages in this group have a lower median interest rate and longer median maturities. All in all, these results point toward a relatively high risk-bearing capacity of FX borrowers compared to euro-only borrowers (see also Albacete et al., 2012).

However, we also find that all debt ratio measures point toward a higher indebtedness of FX borrowers relative to their income or assets (see bottom panel of table 3). As a case in point, the debt-to-assets ratio is by 24 percentage points higher for FX loan holders than for euro debt holders. This indicator

clearly mirrors the relatively high share of mortgage loans in FX loans (see table 1). Moreover, the proportion of households whose highest mortgage has an adjustable interest rate is also higher among FX borrowers than among non-FX borrowers. In general, FX loan holders are less risk averse than other indebted households.

As mentioned in the introduction, FX loans carry particular risks, like exchange rate risk, the risk of the interest rate differential and the performance risk of the repayment vehicle. As FX loans in Austria are usually bullet loans (see chart 1, right-hand panel), these risks can only materialize at the end of maturity. In order to assess how these risks have “virtually” changed for each FX borrower since they took out their

Table 4

Market price developments relevant for households with FX debt

	At the time the highest FX loan was taken out (household level)		January 2015 (macro level)	Difference	
	Median	Mean		Median	Mean
CHF/EUR ¹ exchange rate	1.550	1.583	1.094	-0.456	-0.489
3m EURIBOR ² – 3m LIBOR (CHF)	1.569	1.595	0.512	-1.057	-1.083
Austrian 10y bonds	4.267	4.454	0.550	-3.717	-3.904
ATX index	1,977	2,293	2,172	195	-121
Eurostoxx	3,252	3,308	3,204	-48	-104

Source: HFCS Austria 2010, OeNB, Thomson Reuters.

¹ Up to end-1998: ATS.

² Up to end-1998: VIBOR.

Note: Households whose highest loan was not a mortgage are excluded from the computation.

highest FX loan, it is necessary to perform a more dynamic analysis than the one done in table 3. Table 4 shows the CHF/EUR exchange rate as well as the interest rate differential between Austria and Switzerland, and three measures of capital market performance, both at the time when the highest FX loan was taken out and at the present time (January 2015).¹⁶

It can be seen that all three types of risk have increased both at the mean and at the median level (except the ATX index). In particular, the median exchange rate relevant for households with FX loans has virtually decreased by about 32% from CHF/EUR 1.6 at the time the corresponding household took out its highest FX loan to CHF/EUR 1.1 in January 2015. Obviously, as long as this loan has a remaining maturity, these losses are unrealized losses that do not necessarily materialize;¹⁷ in this case, households are only affected by higher interest payments. Indeed, in table 3 we see that the median remain-

ing maturity of FX loans is 16 years, compared to 12 years of remaining maturity of non-FX loans. In other words, the risks to financial stability emanating from FX holders depends on the future development of the exchange rate of the loan currency as well as the performance of the repayment vehicle. Therefore, these risks are difficult to predict and will have to be monitored until (at least a substantial part of) the FX loans currently outstanding will have been repaid.

4 Determinants of FX borrowing in Austria

4.1 Background literature

To our knowledge, the only empirical study analyzing the determinants of households' decision to take out a FX loan in Austria is Beer et al. (2010). They find that independent financial advisors appear to have played an important role in arranging some of the contracts. Also, factors such as risk appetite, affluence, financial literacy, and

¹⁶ For the sake of simplicity, the following analysis assumes that all FX loans are in Swiss francs and that all FX loans are bullet loans.

¹⁷ Some FX loan contracts in Austria include a so-called stop loss clause; in this case, losses may indeed have materialized, especially since the Swiss central bank removed the exchange rate ceiling. However, the FMA recommends in these cases to renegotiate the loan contract in order to find alternative solutions.

marriage play a role when taking out a housing loan in FX.

Several other papers exist that study the determinants of FX borrowing in CEECs where these kinds of loans are very popular. Fidrmuc et al. (2013) use a Heckman selection probit model in order to control for sample selectivity. They find that FX loans are driven by households' lack of trust in the stability of the local currency and in domestic financial institutions. Moreover, remittances and expectations of euro adoption play an important role. Beckmann and Stix (2015) use a similar model to specifically study the effect of financial literacy on the demand for FX loans in CEECs, and they find that knowledge about exchange rate risks reduces demand for FX loans.

In this section we perform a similar regression analysis to study the socio-demographic and economic determinants of FX borrowing in Austria.

4.2 Methodology

Our analysis differs from the one of Beer et al. (2010) in two important ways. On the one hand, the HFCS data provide detailed information about households' whole balance sheets, including the year when loans were taken out. This allows us to take into account interest and exchange rate differences to explain the decision to borrow in FX. On the other hand, we employ the Heckman selection model used by Fidrmuc et al. (2013) and Beckmann and Stix (2015) in order to control for sample selectivity in Austria. Besides extending the approach of Beer et al. (2010), we are able to update the results by using the more recent information from the HFCS.

Sample selectivity could arise due to the fact that demand for FX debt is observed only if a household actually holds debt (either in euro or in FX). Di-

rectly modeling the probability that a respondent has FX debt, hence neglecting sample selectivity, could result in biased estimates. Therefore, we estimate the probability to hold debt and the probability to hold FX debt jointly. In particular, in the first stage, the selection equation defines probability L that a household has debt

$$P(L=1) = \Phi_L(X_L\beta_L + u_L). \quad (1)$$

In the second stage, we estimate a probit equation that an indebted household has FX debt

$$P(F=1|L=1) = \Phi_F(X_F\beta_F + u_F), \quad (2)$$

where the error terms are normally distributed, $u_L \sim N(0,1)$, $u_F \sim N(0,1)$, and correlated, $\text{corr}(u_L, u_F) = \rho$. Our results confirm that the correlation of both error terms is high and significant. This result shows the necessity to model the borrowing decision before modeling the decision about the currency of this loan.

The selection equation contains similar variables for identification as used in Fidrmuc (2013). In particular, we take three employment categories: student, retired and unemployed. They are assumed to be correlated with access to debt, but not with the decision about the currency of debt.

In the second stage our empirical strategy is to employ three different specifications for the set of independent variables X_F . The first specification contains the basic explanatory variables. The second specification additionally contains the interest rate differential between Austria and Switzerland in the year the household's highest loan was taken out, interacted with a dummy indicating whether the year of the highest loan is not missing. Finally, the third specification contains the first specification plus the CHF/EUR exchange rate in the year the household's highest

loan was taken out, interacted with a dummy indicating whether the year of the highest loan is not missing. The exchange rate level in the year the highest loan was taken out is used as a proxy for the expected exchange rate development since we assume a correlation between these two indicators in that the lower the exchange rate level in the year the highest loan was taken out (i.e. the currency is potentially undervalued at this time), the higher the expected exchange rate level in the future; and on the other hand, the higher the exchange rate level (i.e. the currency is potentially overvalued at this time), the lower the expected exchange rate level in the future. The interaction in the second and third specifications is necessary as information about the time at which the highest loan was taken out is not collected in the HFCS if a household's highest loan is a consumer loan or if a household does not have a loan but just other nonmortgage debt. As table 1 shows, this is the case only for a few households with FX loans.¹⁸

The definition of all explanatory variables is described in the annex (see table A1). Note that some of the household characteristics may have changed since debt was incurred. But loan decisions are to some extent reversible or loans are convertible so that current household attributes should also matter.

4.3 Results

The results of the probit estimation of equation (1) will not be discussed here but can be found in table A2 in the annex. We concentrate on the discussion of the FX decision equation (2), which is also estimated by a probit regression model. The dependent variable is a dummy that is 1 if a household has FX

debt. Table 5 shows the average marginal effects from the estimation of the second stage.

Specification (1) in table 5 shows that gross income has a positive significant effect on the probability of having FX debt. In contrast, the effect of gross wealth is not statistically significant. Furthermore, a conditional increase by one unit in the number of adults in the household decreases the probability of having FX debt by 8 percentage points. We do not find evidence of a statistically significant effect of the reference person having a tertiary degree or of being risk averse. However, like Beer et al. (2010), we do find a statistically significant effect of the household's geographical distance to the Swiss border: the larger the distance, the lower the probability of having FX debt. Households living close to the border may have income in Swiss francs (the dominant currency of FX loans in Austria), which makes a loan in Swiss francs a more natural decision.

The second specification in table 5 shows that having FX debt also depends on the interest rate differential between Austria and Switzerland in the year when the highest loan was taken out. This result is both statistically and economically significant. An increase by 1 percentage point in the difference between the (higher) Austrian and the (lower) Swiss interest rates measured in terms of 3-month interbank rates increases the probability of having FX debt by 16 percentage points. In contrast, exchange rate expectations do not seem to play a statistically significant role in the debt currency decision (see third specification in table 5).

The correlation of both error terms ρ is negative; this indicates that unob-

¹⁸ However, a sizeable proportion of households with consumer loans or other nonmortgage debt denominated in euro are taken into account in this interaction.

Table 5

Determinants of household FX borrowing

Variables	(1)	(2)	(3)
IHS (gross income)	0.0931* (0.0524)	0.0695 (0.0425)	0.0810* (0.0437)
IHS (gross wealth)	0.00276 (0.0203)	0.00521 (0.0163)	0.00260 (0.0186)
Reference person is female	-0.0468 (0.0467)	-0.0307 (0.0428)	-0.0393 (0.0423)
Age of reference person	-0.00361 (0.00375)	-0.00138 (0.00317)	-0.00264 (0.00283)
Reference person has tertiary degree	-0.0299 (0.0546)	-0.0219 (0.0548)	-0.0267 (0.0490)
Household is risk averse	0.00769 (0.0400)	0.0161 (0.0382)	0.00933 (0.0379)
Reference person lives with partner	0.0306 (0.0495)	0.0339 (0.0457)	0.0299 (0.0444)
Number of adults in household	-0.0837*** (0.0299)	-0.0789*** (0.0290)	-0.0746** (0.0295)
Number of children in household	-0.0457 (0.0369)	-0.0704* (0.0411)	-0.0462 (0.0420)
Household owns main residence	-0.350*** (0.0668)	-0.335*** (0.0983)	-0.326*** (0.125)
Distance to Swiss border	-0.0404** (0.0164)	-0.0380** (0.0159)	-0.0368** (0.0154)
Year of highest loan not missing	0.599*** (0.138)	0.283** (0.132)	0.698*** (0.267)
Year of highest loan not missing*interest rate differential Austria vs Switzerland		0.156*** (0.0583)	
Year of highest loan not missing*exchange rate CHF/EUR			-0.101 (0.149)
Rho	-0.743 (0.3183)	-0.889 (0.1627)	-0.774 (0.2821)
Total number of observations	2,339	2,281	2,339
Uncensored number of observations	787	727	783

Source: HFCS Austria 2010, OeNB.

Note: The dependent variable is the probability that a household holds a FX loan. Only the outcome equation is reported. Coefficients report the average marginal probability effects. Rho denotes the correlation of first- and second-stage errors. Standard errors are in parentheses. All estimates are calculated using multiple imputations, but not household weights.

*** Significance at 1% level. ** Significance at 5% level. * Significance at 10% level.

servables increasing the probability of having debt are associated with a lower probability of having FX debt. Thus, if e.g. impatience is an unobservable and it is positively related to having debt (selection equation) then it is negatively related to having debt in FX (outcome equation).

5 Summary

This study provides an overview of the structure and distribution of Austrian households holding FX debt on the basis of information from the Eurosystem

HFCS in Austria. The Austrian HFCS covers households' FX debt and euro debt, real and financial assets as well as a broad range of socio-economic characteristics, thereby providing for the first time data to calculate Austrian households' debt in FX jointly with their total wealth and household characteristics. This is relevant for a wide range of financial stability issues, for instance for analyzing households' risk of default.

The main results of this analysis are as follows: Almost 4% of the Austrian

household population – around 150,000 households – had a FX loan at end-2010. Mortgage loans are by far the most common type of FX loans among Austrian households and they are almost exclusively used to finance real estate. Almost 97% of FX borrowers have at least one FX mortgage loan. The average value of these loans is about EUR 102,000. Only 3% of FX borrowers have FX nonmortgage debt. A household's FX debt tends to increase with age, household size and homeownership.

A static risk analysis shows that FX borrowers have considerably higher median income or net wealth than non-FX borrowers. Our risk measures point toward a relatively high risk-bearing capacity of FX loan holders. However, these households also use a higher proportion of their income and wealth for debt service and debt holding. Furthermore, a dynamic analysis shows that the median exchange rate of households' highest mortgage has decreased by about 32%, from CHF/EUR 1.6 at the time the mortgage was taken out to CHF/EUR 1.1 in January 2015. At present, these losses are unrealized losses because most FX loans are bullet loans and also have longer maturities than euro loans; actual losses finally will depend on future exchange rates, interest rate developments as well as the performance of the respective repayment vehicle. Even though FX loans

can be a substantial burden for the households affected, a recent microsimulation exercise published in this issue of the Financial Stability Report (see page 30) suggests that they do not pose a risk to the stability of the Austrian banking sector.

We find that one of the most important determinants of choosing FX loans over euro debt was the interest rate differential between Austria and Switzerland at the time the loan was taken out. An increase by 1 percentage point in this difference measured in terms of 3-month interbank rates increased the probability of having FX debt by 16 percentage points. Quite surprisingly, exchange rate expectations were not found to play a statistically significant role in the loan currency decision.

Comprehensive information on FX borrowers in Austria is crucial, especially because in the coming years, many FX loans will mature. Therefore, new questions regarding FX loans were included in the second wave of the HFCS, such as whether households with debt in FX have income in a matching currency or about the motives for the decision to take out a FX loan. Furthermore, the sample size of the second wave of the HFCS will be larger, which will allow a more precise and also more disaggregated analysis of FX debt.

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Annex

Table A1

Definition of explanatory variables

Variable name	Variable definition	Subject
IHS(gross income)	Inverse hyperbolic sine transformation of gross income in euro	Household
IHS(gross wealth)	Inverse hyperbolic sine transformation of gross wealth in euro	Household
Reference person is female	1=female; 0=male	Reference person
Age of reference person	Age in years	Reference person
Reference person has tertiary degree	1=ISCED code equals 5 or 6; 0=ISCED code equals 1,2,3,or 4	Reference person
Household is risk averse	1=my partner and me are not willing to take any financial risk; 0=we are willing to take at least average financial risks	Financially knowledgeable person and partner
Reference person lives with partner	1=married or consensual union on a legal basis; 0=single, widowed, or divorced	Reference person
Number of adults in household	Number of household members aged 18+	Household
Number of children in household	Number of children in household (0-13)	Household
Household owns main residence	Household owns or partly owns main residence	Household
Distance to Swiss border	1=Vorarlberg; 2=Tyrol; 3=Salzburg, Carinthia; 4=Upper Austria, Styria; 5=Lower Austria, Vienna, Burgenland	Household
Reference person is student	1=student or other; 0=employed, self-employed, unemployed, or retired	Reference person
Reference person is retired	1=retired; 0=employed, self-employed, unemployed, or other	Reference person
Reference person is unemployed	1=unemployed; 0=employed, self-employed, retired, or other	Reference person
Year of highest loan not missing	1=household's highest loan is a mortgage loan; 0=other	Household
Interest rate differential	Average 3M EURIBOR minus average 3M LIBOR CHF in the year the household's highest loan was taken out	Household
Exchange rate	Average CHF/EUR exchange rate in the year the household's highest loan was taken out	Household

Source: HFCS Austria 2010, OeNB.

Note: The household's reference person is defined as the household member with the highest income.

Table A2

Determinants of household debt holding

Variables	(1)	(2)	(3)
IHS(gross income)	0.0981** (0.0454)	0.0967** (0.0447)	0.0980** (0.0456)
IHS(gross wealth)	-0.0594*** (0.0193)	-0.0573*** (0.0189)	-0.0593*** (0.0193)
Reference person is female	0.0430 (0.0692)	0.0204 (0.0696)	0.0432 (0.0693)
Age of reference person	-0.00946*** (0.00302)	-0.0103*** (0.00302)	-0.00950*** (0.00304)
Reference person has tertiary degree	-0.0272 (0.0890)	-0.0596 (0.0942)	-0.0264 (0.0889)
Household is risk averse	-0.0940 (0.0606)	-0.0784 (0.0618)	-0.0942 (0.0606)
Reference person lives with partner	0.0584 (0.0785)	0.0173 (0.0800)	0.0588 (0.0786)
Number of adults in household	0.0423 (0.0449)	0.0465 (0.0468)	0.0419 (0.0448)
Number of children in household	0.297*** (0.0486)	0.328*** (0.0486)	0.298*** (0.0487)
Household owns main residence	0.591*** (0.0828)	0.511*** (0.0836)	0.590*** (0.0827)
Distance to Swiss border	0.0285 (0.0251)	0.0292 (0.0258)	0.0284 (0.0251)
Reference person is student	-0.389* (0.221)	-0.403* (0.221)	-0.388* (0.221)
Reference person is retired	-0.444*** (0.107)	-0.438*** (0.107)	-0.443*** (0.108)
Reference person is unemployed	0.280* (0.145)	0.258* (0.141)	0.282** (0.144)
Constant	-0.751 (0.475)	-0.719 (0.467)	-0.750 (0.476)
Total number of observations	2,339	2,281	2,339

Source: HFCS Austria 2010.

Note: The dependent variable is the probability that a household holds debt. Only the selection equation is reported. Coefficients do not report marginal effects. Standard errors are in parentheses. All estimates are calculated using multiple imputations, but not household weights.

*** Significance at 1% level, ** significance at 5% level, * significance at 10% level.

When Austrian banks cross borders

Esther Segalla¹

Cross-border banking fulfills an important function in financial resource allocation. International financial integration can have great benefits, such as risk diversification and increased competition, but may at the same time result in financial imbalances that in turn contribute to the build-up of financial stability risks. The first part of this article outlines some stylized facts about recent cross-border activities of Austrian banks. In the second part, I reflect on four basic aspects of cross-border banking flows with a potential impact on financial stability: first, the cyclical nature of cross-border flows; second, banks' reliance on different types of funding sources; third, borrowing and lending in a foreign currency; and fourth, the geographical distribution of banking counterparties.

JEL classification: G21, E58, F34

Keywords: Cross-border banking, international credit flows, financial stability

In 2012 a group of researchers from Austria, Germany, the United Kingdom and the U.S.A. established the International Banking Research Network (IBRN) with the aim of bringing together central bank researchers from around the world to analyze issues pertaining to global banks. The IBRN saw a need for joint analysis of key questions, such as the role of cross-border banking in the transmission of financial shocks and the benefits of each participating central bank having access to bank-, time- and country-level data. The network enables researchers at the participating central banks to use the manifold micro data that commercial banks are required to report to their central banks. Usually those data sources are not predominantly used for research purposes. The goal was to define common data standards for each country team, which would allow the comparison of estimations across countries without exchanging individual confidential data sets. So far, 26 institutions² have joined the IBRN. Its co-directors are Linda Goldberg, Vice

President of the Financial Intermediation Function of the Federal Reserve Bank of New York, and Claudia Buch, Deputy President of the Deutsche Bundesbank. The IBRN's first research project (2013) explores how funding shocks affecting parent banks are transmitted to foreign countries through these banks' cross-border activities. One study presents an overview of the analysis and findings, with eleven country studies reporting the country-specific findings produced with individual central bank data applying a common econometric methodology. All articles are currently under revision in the IMF Economic Review. Under the IBRN's second research topic (2014) participants explore the changing scale, type, and location of banking activity stemming from shifts in micro- and macro-prudential regulatory policy. For this purpose, Cerrutti et al. (2015) provide new data and measures of quarterly changes in prudential instruments for 57 countries for the years from 2000 to 2014.

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² Reserve Bank of Australia, Oesterreichische Nationalbank, Banco Central do Brasil, Bank of Canada, Central Bank of Chile, Banque de France, Deutsche Bundesbank, European Systemic Risk Board, Hong Kong Monetary Authority, Central Bank of India, Central Bank of Ireland, Banca d'Italia, Bank of Korea, Banco de Mexico, De Nederlandsche Bank, National Bank of Poland, Banco de Portugal, Banka Slovenije, Banco de España, Sveriges Riksbank, Swiss National Bank, Central Bank of the Republic of Turkey, Bank of England, U.S. Federal Reserve System, Bank for International Settlements and International Monetary Fund.

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Working with micro banking data yields enormous benefits. In particular, it allows combining information on different units like banks, firms, households and recipient countries to evaluate behavior within financial systems. An international bank decides on credit provision in one country relative to its credit provision in another country. Conditions in one country (e.g. less regulation or easier access to wholesale funding) will impact the bank's overall lending strategy. The aim of IBRN studies is to account for bank specificities within a (potentially causal) framework that links bank shocks to various transmission channels. This should not be understood as an argument in favor of collecting more and more detailed data or singling out one particular bank and its lending behavior. Central banks already accommodate comprehensive micro-level data, which are collected for various purposes. Looking at these data from a microeconomic perspective will help to gain improved insights relevant to financial stability. Yet micro data analysis also involves specific challenges to economists. Not only do we need to agree on common methodologies and data terminologies. But the granularity of the data implies that more tedious and elaborate data processing is necessary compared to macroeconomic analysis. In general, central banks host many high-quality micro-level databases. Central banks report a selection of commercial banks' balance sheet positions in aggregated format to the Bank for International Settlements (BIS). The data sets are harmonized and, most importantly, accessible without confidentiality restrictions. Unfortunately, the BIS consoli-

dated and locational statistics offer only a limited perspective of the funding side of banking. Efforts are currently underway to achieve a more detailed reporting of liability breakdowns in future.³

Austrian banks are much smaller in terms of cross-border banking volumes than German or U.S. global banks. However, one distinguishing feature of Austrian banks is their unparalleled exposure to Eastern Europe. Key cross-border statistics of large internationally active Austrian, German and U.S. banks show that the cross-border banking activities of Austrian banks in terms of GDP are substantial and therefore important for systemic risk monitoring. The Austrian participation in and active contribution to the network yields insights both for the international and national policy discussion, but also contributes to improved analysis at the Austrian central bank. On the basis of a range of supervisory data (which commercial banks are required to report to the Oesterreichische Nationalbank), a complex data set covering the period from 2005 to 2012 has been produced. This article aims to demonstrate different aspects and broad trends of cross-border banking from an Austrian perspective. For a more recent and current policy debate on cross-border banking covering 2013 and 2014 selected references have been provided.

1 Key figures of the Austrian banking sector

To shed some light on the dimensions of cross-border banking, I provide some key figures for Austria. We observe around 800 incorporated financial institutions, with approximately half of the institutions representing

³ Another major limitation of country aggregate banking statistics is that they do not facilitate the in-depth analysis of banking channels and incidences on home and host markets. For such an analysis we need to work with bank- and country-level information.

95% of the sector's total assets. The majority of these banks have no foreign affiliates (395) and only 42 own foreign affiliates. Among the banks with total assets of more than EUR 500 million, 150 banks have no foreign affiliates, and 36 do have foreign affiliates. Foreign affiliates take the form of branches or subsidiaries. The majority of Austrian parent banks that own foreign affiliates operate them in up to 3 countries (27 Austrian parent banks), and 9 Austrian parent banks have affiliates in 4 or more countries, of which 4 parent banks have affiliates in 14 or more countries. Broadly speaking, we observe three channels through which Austrian globally operating banks provide credit to counterparties outside Austria.⁴ First, Austrian parent banks engage in direct cross-border activities, i.e. they lend to and take deposits from foreign counterparties. Second, Austrian parent banks serve their affiliates. Third, subsidiaries outside Austria provide credit to local counterparties and engage in cross-border banking activities.

To put the lending definitions into perspective, I present some relative magnitudes for the fourth quarter of 2012. At the unconsolidated level, direct cross-border total claims are equivalent to approximately 75% of Austrian GDP (EUR 231 billion). About half of this amount (36% of GDP or EUR 113 billion) are cross-border claims on nonaffiliated banks. Loans to affiliated banks amount to 18% of GDP (EUR 57 billion). Claims of Austrian banks' foreign subsidiaries (local

claims) are approximately 95% of GDP (EUR 288 billion). At the consolidated level, Austrian banks' total claims amount to an equivalent of 163% of Austrian GDP (EUR 503 billion).

Why is it important to distinguish between unconsolidated and consolidated data? In Austria, individual bank entities report unconsolidated cross-border banking statistics in great detail. Cross-border activities of Austrian banks' foreign subsidiaries are reported separately, and intra-group flows between Austrian parent institutions and foreign subsidiaries are not reported in balance sheet statistics and therefore have to be approximated.⁵ Consolidated (at the level of headquarters of sometimes multi-tiered ownership structures) figures are usually coarser data; here, different reporting thresholds apply. These data are useful to assess overall exposure incorporating ownership and accounting practices. Unconsolidated data have the advantage of very rich details; the other data source is suited for tracking overall exposure and changes over time. Neither data source can give us the complete picture by itself, but ultimately, all data sources need to complement each other to provide an overall pattern. Therefore I suggest approaching all available data sources as two sides of the same coin.⁶

Chart 1 shows the volumes of unconsolidated and consolidated claims over time for the sample of banks representing 95% of the sector's total assets.⁷

⁴ Two concepts of global liquidity flows are usually distinguished. First, official liquidity provided by central banks. Second, private sector liquidity provided by global banks engaging in cross-border operations (directly or through affiliates).

⁵ Credit (including interbank credit) above EUR 350,000 has to be reported to the Central Credit Register (CCR). As the reporting formats of bank balance sheet data sources and CCR differ, the latter has not been used for the statistics presented here.

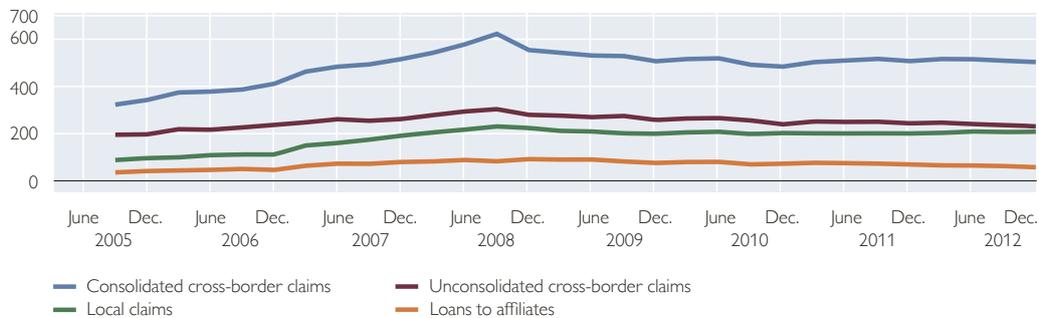
⁶ For an overview of data sources at the international level regarding cross-border banking issues, see Lane (2014).

⁷ I consider all banks that hold an Austrian banking license, not differentiating between domestic (Austrian) and foreign passive ownership, with all figures being gross figures.

Chart 1

Consolidated and unconsolidated claims of Austrian parent banks

EUR billion



Source: Author's calculations using OeNB supervisory data.

Note: Claims include loans, securities and shares. Cross-border claims are Austrian banks' claims on their foreign counterparties. Local claims are foreign subsidiaries' claims. Loans to affiliates are loans by Austrian banks to foreign branches or subsidiaries.

Complementing the picture of the three lending channels, table 1 lists the countries in which Austrian banks are active, including their share in the total amount of claims. The recipient countries are ranked in descending order by the amount of direct cross-border lending by the Austrian parent bank.

It is commonly known that Eastern Europe, and in particular the Czech Republic, is an important market for Austrian banks. Germany also hosts many branches and accounts for a substantial amount of loans from Austrian banks. In other Western European countries (e. g. the United Kingdom, Switzerland and the U.S.A.) interbank activities dominate. The largest amounts of intra-bank flows (that means loans by the Austrian parent bank to its affiliate) go to Croatia, Romania, Hungary and Russia. Intra-bank flows mirror the importance of the countries as credit providers to the respective local markets through foreign subsidiaries. Turkey as a recipient market is gaining in importance for Austrian banks, though the supervisory data capture this business trend only partially, as

Austrian banks do not own subsidiaries in Turkey.⁸

In the following, I will analyze basic cross-border banking developments, emphasizing the Austrian perspective and with a focus on the provision of credit to the nonbank sector. The idea is to analyze scenarios under which cross-border banking activities might contribute to the build-up of financial stability risks. In this context I present four features of a structural trend in global banking, in particular in the context of cross-border private credit provision: first, the cyclicity of cross-border credit that may have contributed to exacerbating the effects of the recent financial and economic crisis; second, wholesale funding as a source for cross-border credit expansion prior to the crisis; third, maturity and exchange rate developments that created mainly short-term balance sheet mismatches of both currency and maturity and therefore contributed to financial vulnerabilities; and fourth, the different importance of banking activities in recipient countries and the resulting challenges for micro- and macroprudential regulatory policies.

⁸ For instance, Austrian banks hold equity interests in joint ventures in Turkey, see Wittenberger et al. (2014).

Table 1

Countries in which Austrian banks are active by claims volumes

Unconsolidated					Unconsolidated			Unconsolidated		Consolidated	
Direct cross-border channel					Affiliate channel			Subsidiary channel		Channel	
Country	Rank	Banks	Claims (EUR billion)	Loans (% of claims)	Banks	Claims (EUR billion)	Loans (% of claims)	Banks	Claims (EUR billion)	Rank	Claims (EUR billion)
Germany	1	358	47.42	0.84	91	2.78	0.81	<4	3.86	2	44.38
United Kingdom	2	326	17.63	0.79	<4	1.14	1.00	<4		10	17.83
Italy	3	315	12.53	0.29	<4	3.02	0.82	<4	3.01	8	20.62
Poland	4	245	11.34	0.56	<4	0.21	0.12	<4	0.11	9	20.55
France	5	287	11.28	0.59	<4	0.27	0.20	<4	0.27	12	11.95
Croatia	6	220	9.98	0.94	9	8.74	0.64	9	24.18	3	38.80
Switzerland	7	342	9.54	0.92	4	0.78	0.97	<4	0.05	19	9.47
Turkey	8	118	9.47	0.70						18	9.69
Netherlands	9	305	9.01	0.46						17	9.75
U.S.A.	10	334	8.27	0.36	<4	0.02	1.00			13	11.29
Romania	11	185	7.82	0.89	5	6.92	0.95	4	18.59	5	34.51
Czech Republic	12	284	7.78	0.84	25	1.75	0.39	5	40.28	1	62.34
Slovenia	13	195	6.72	0.93	11	3.43	0.84	5	6.87	11	14.34
Hungary	14	304	6.24	0.71	14	5.27	0.88	8	18.73	7	29.03
Russia	15	191	5.06	0.92	4	5.49	0.55	4	30.46	4	35.68
Slovakia	16	260	4.73	0.57	12	1.14	0.53	5	18.03	6	31.22
Luxembourg	17	186	4.19	0.34						22	4.53
Cayman Islands	18	55	3.40	0.64						24	4.25
Cyprus	19	102	3.04	0.98						25	3.34
Spain	20	238	2.91	0.42						26	3.24
Bulgaria	21	133	2.26	0.88	<4	2.34	0.38	<4	7.36	14	10.76
Belgium	22	214	2.20	0.58						27	2.20
Ukraine	23	117	2.08	0.66	4	3.26	0.63	4	6.47	15	10.41
Serbia	24	153	1.97	0.87	7	1.63	0.59	7	6.31	20	9.16
Singapore	25	92	1.95	1.00	<4	1.81	1.00			40	1.23
Sweden	26	260	1.76	0.27	<4	0.00				33	1.75
Ireland	27	152	1.69	0.18						32	1.92
Denmark	28	165	1.34	0.40						38	1.38
Bosnia and Herzegovina	29	160	1.24	0.93	9	1.24	0.52	9	6.37	21	6.97

Source: Author's calculations based on research for the IBRN project 2013, using individual bank-level information (for each bank i , quarter q , country j), Segalla (2014).

Note: This table reports selected figures for three different credit channels by recipient country for Q4 2012. It shows volumes of banking activities (in EUR billion), the share of loans in total claims (%), the importance of the recipient country (rank) and the number of banks engaged in the respective banking activities. "Claims" refer to the broad asset category including loans, securities and shares. Columns 1 to 5: direct cross-border credit by Austrian parent banks to foreign counterparties on the basis of unconsolidated data. Columns 6 to 8: Austrian parent banks' claims on their foreign affiliates (intra-bank lending) on the basis of unconsolidated data. Columns 9 to 10: foreign subsidiaries claims on local and foreign counterparties on the basis of unconsolidated data. If a country does not host affiliates of Austrian parent banks, no entry is shown for affiliates and subsidiary claims. For countries that host fewer than 4 affiliates, no exact count is shown due to data confidentiality requirements. Columns 11 to 13: claims on the basis of consolidated data for each recipient country.

2 Has cross-border lending been more cyclical than domestic lending?

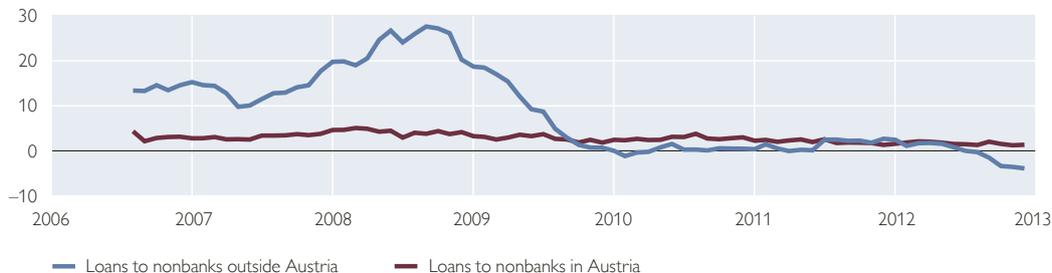
Nonbank lending is usually less volatile than the interbank market. Since 2006, lending to nonbanks by domestic banks has been very stable compared to lending across borders. In terms of volatility, we observe the following ranking: cross-border interbank lending is more volatile than domestic interbank lending,

followed by cross-border lending to nonbanks and finally domestic lending to nonbanks. We observe this well-documented pattern not only at the international but also at the national level. Chart 2 shows domestic (red line) and direct cross-border lending (blue line) by Austrian banks. Domestic lending is credit provided by Austrian banks to the private sector in Austria. Cross-border lending is credit provided

Chart 2

Growth of Austrian banks' loans to nonbanks

Percentage change on the previous year (monthly data)



Source: Author's calculations using OeNB supervisory data.

Note: The figures do not include local positions of Austrian banks' foreign subsidiaries. All loans are reported in euro; the exchange rate at the time of reporting is applied. The nonbank sector includes the household, government, financial and nonfinancial sectors.

to the private sector outside Austria by a foreign branch or by an Austrian parent institution.⁹ Chart 3 shows credit growth from the perspective of foreign subsidiaries of Austrian banks. For example, it includes data on Bulgarian subsidiaries of Austrian parent banks, which provide local credit within Bulgaria but also engage in cross-border lending activities in Romania. We again observe a higher cyclicality for cross-border lending than for local lending. The de-

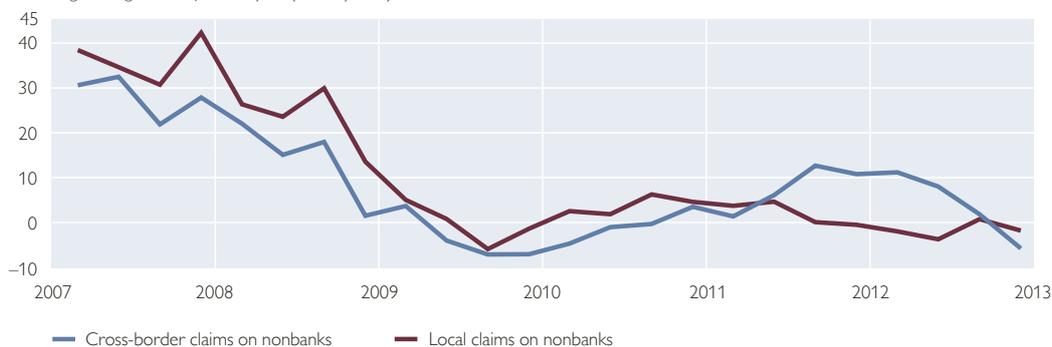
cline in cross-border credit growth after 2008 has been offset only partially by the growth of credit provided by foreign subsidiaries. It is important to note that this picture of credit growth conceals substantial heterogeneity at the country level. A point we will discuss later in the article.

The data patterns presented here end with 2012 and therefore do not reflect developments of the most recent two years. Recent policy measures that

Chart 3

Growth of Austrian banks' foreign subsidiaries' claims on nonbanks

Percentage change on the previous year (monthly data)



Source: Author's calculations using OeNB supervisory data.

Note: Cross-border claims exclude claims on Austrian counterparties and claims on the government; they include the household, financial and nonfinancial sectors. Cross-border claims exclude Serbian and Cypriot subsidiaries' claims. All claims are reported in euro; the exchange rate at the time of reporting is applied. The nonbank sector includes the household, government, financial and nonfinancial sectors. Local claims mean that the foreign subsidiary provides credit to counterparties from the same country. Cross-border claims mean that the foreign subsidiary provides credit to counterparties from a different country.

⁹ The figure using consolidated data shows a similar pattern, though the peak in 2008 is a bit lower.

may have contributed to cushioning the deleveraging tendencies associated with cross-border flows and their cyclicity included, importantly, the Vienna Initiative 1.0,¹⁰ the sustainability package¹¹ and measures to reduce the risks emanating from foreign currency loans.¹²

3 How much lending has been funded by wholesale sources?

Besides the volatility of cross-border lending before the crisis, international discussions have also concentrated on how global banks funded their (cross-border) credit expansion. The growing lending activities of global banks are claimed to have been financed heavily by wholesale funding flows. The dependence on wholesale funds seems to be determined by bank size. Small European banks resort to wholesale funding much less than medium-sized and large European banks.¹³ Furthermore, data on wholesale liabilities are rarely broken down by liabilities from domestic operations and from cross-border operations. Hills and Hogarth (2013) combine two pieces of international evidence to validate the argument that wholesale funding fueled credit expansion before the recent crisis. First, they show that cross-border liabilities grew more rapidly than domestic liabilities in the pre-crisis period (in 2008 the percentage changes on the previous year were around 30%). Second, they look at two key funding ratios: the ratio of banks' domestic loans to deposits and the ratio of whole-

sale funding to total liabilities. In 2008, the loan-to-deposit ratio rose to 110% and the wholesale-to-liabilities ratio rose to 45% for European global banks.

Turning to Austrian banks, we observe that their cross-border deposits increased more than domestic deposits (chart 4) between 2005 and 2012. In particular, domestic interbank deposits increased dramatically during the crisis. The wholesale-to-total liabilities ratio of Austrian banks had increased to 35% prior to 2008, remaining 10 percentage points below the comparable international figure. This suggests that Austrian banks' asset growth continued to be funded predominantly through deposits rather than through wholesale funds.

Although these two key funding ratios are commonly used measures to demonstrate the importance of wholesale funding, they involve some measurement problems. Due to the multi-tiered structure of the decentralized banking sectors in Austria, the ratios include intra-sector deposits and are therefore biased upward. According to adjusted calculations presented in the OeNB's Financial Stability Report (2012), short-term wholesale funding (including cross-border transactions) accounted for approximately 15% of Austrian banks' consolidated total assets at the end of 2011 (compared to 19% on an unadjusted basis).

In line with international calculations and taking into account that the evidence is suggestive, the figures presented here are indicative of two developments over time: The share of banks'

¹⁰ http://vienna-initiative.com/wp-content/uploads/2015/01/DCM-note-Q3-2014_Jan2015final.pdf (accessed on June 8, 2015).

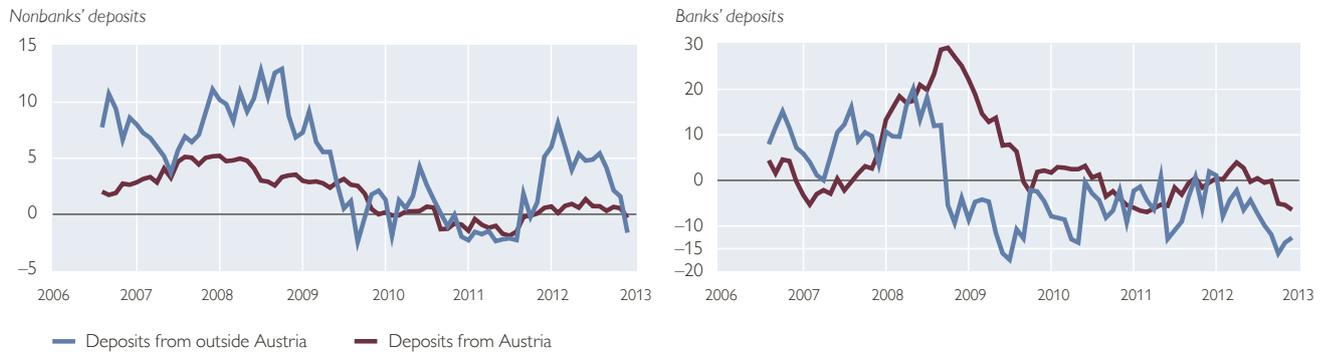
¹¹ <http://www.oenb.at/en/Financial-Stability/Systemic-Risk-Analysis/Sustainability-of-Large-Austrian-Banks--Business-Models.html> (accessed on June 8, 2015).

¹² <http://www.oenb.at/en/Financial-Stability/Systemic-Risk-Analysis/Foreign-Currency-Loans-and-Repayment-Vehicle-Loans.html> (accessed on June 8, 2015).

¹³ Van Rixtel and Gasperini (2013) provide an overview of bank funding trends in the euro area after the financial crisis.

Chart 4

Nonbanks' and banks' deposits at Austrian banks between 2005 and 2012

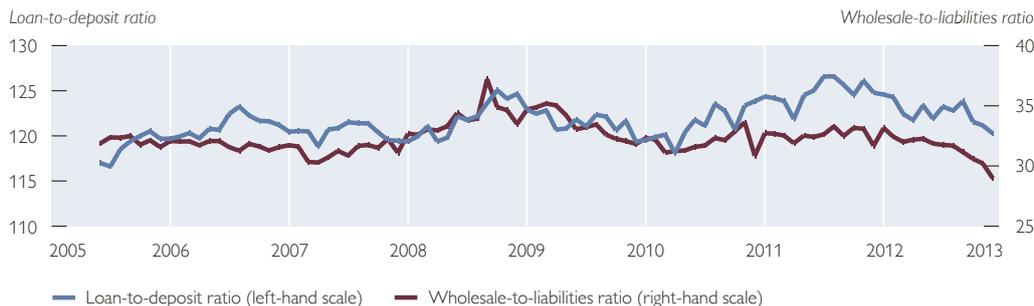


Source: Author's calculations using OeNB supervisory data.

Note: The figures do not include local positions of Austrian banks' foreign subsidiaries. All deposits are reported in euro; the exchange rate at the time of reporting is applied. Nonbanks include the household, government, financial and nonfinancial sectors.

Chart 5

Key funding ratios of the Austrian banking system



Source: Author's calculations using OeNB supervisory data.

Note: The figures do not include local positions of Austrian banks' foreign subsidiaries. The loan-to-deposit ratio is loans by banks to the private sector divided by customer deposits. The wholesale-to-liabilities ratio is bank liabilities (excluding equity, affiliates' deposits and central bank deposits) minus customer deposits divided by total liabilities.

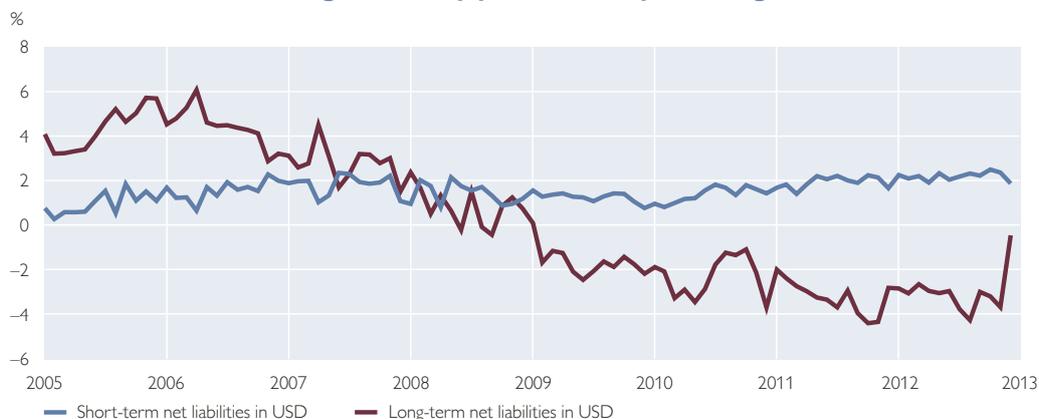
total liabilities that are nondomestic and wholesale rose before 2008 and fell afterward, but the pattern is less pronounced for Austrian banks than for other European banks.

So far we have analyzed cross-border banking ignoring currency issues. The next section will deal with the role of foreign currency positions in cross-border banking.

4 How have maturity and currency mismatches evolved?

International data for cross-border banking flows suggests that part of the

balance sheet expansion of European banks before 2008 was financed through branches located in the U.S.A. According to Hills and Hoggarth (2013) "European banks raised wholesale funds from their affiliates in the United States. Via their head offices and/or financial centers, they lend funds back to non-banks [...] either directly or by funding local banks." These banking practices add the risk of currency mismatches to the general risk of maturity mismatches. Researchers usually compare net lending to non-banks (to proxy long-term positions) in

Austrian banks' net foreign currency position as a percentage of Austrian GDP

Source: Author's calculations using OeNB supervisory data.

Note: Foreign subsidiaries' positions are not included. Short-term net liabilities are overnight deposits minus overnight loans. Long-term net liabilities are [deposits (excluding overnight) plus bond issuance] minus [loans (excluding overnight) plus securities].

U.S. dollars, on the one hand, and net borrowing from banks (to proxy short-term positions) in U.S. dollars, on the other. Using BIS data, Hills and Hoggarth (2013) show that the divergence between short-term and long-term positions was growing before the crisis and that on average the sum of short-term and long-term net positions as a percentage of GDP after 2008 is around -4% for European resident banks. During the crisis many European banks faced a large U.S. dollar shortage. A temporary swap facility between the ECB and the U.S. Federal Reserve alleviated access to U.S. dollar funding at the time.

For Austria, we benefit from precise (unconsolidated) data on currency positions and the corresponding maturity positions to estimate the currency-maturity composition as a percentage of Austrian GDP. Foreign currency

loans extended by Austrian banks are mainly made up of Swiss franc-denominated loans (Q4 2012: CHF 67.26 billion) and U.S. dollar-denominated loans (Q4 2012: USD 38 billion). I focus on the latter because Austrian banks' U.S. dollar positions are almost entirely cross-border positions.¹⁴ In 2012, Russia (13%), the United Kingdom (8.7%), Ukraine (8.2%), Turkey (7.6%), the U.S.A. (7.6%) and some offshore financial centers (21.2%) were the main recipient countries of U.S. dollar-denominated loans. In the next chart, I compare short-term net liabilities (overnight deposits minus overnight loans in U.S. dollars) to long-term net liabilities (deposits plus issued bonds minus loans and securities) in U.S. dollars. It shows that on average the sum of short-term and long-term net positions as a percentage of GDP after 2008 is -1.8% .

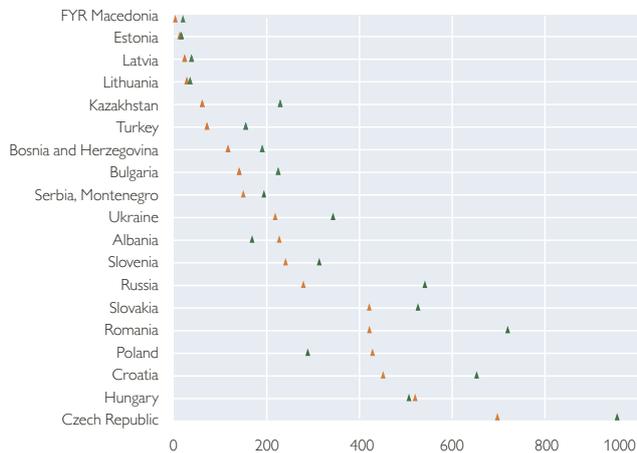
¹⁴ Unlike Swiss franc positions, of which 80% (in Q4 2012: EUR 51.82 billion) are loans to the Austrian nonbank sector and less than 15% are loans to nonbanks in Switzerland, Hungary, Germany and Croatia. The long-term net liabilities in Swiss francs are approximately -16% of GDP, with short-term net liabilities in Swiss francs being close to zero and therefore negligible. If we exclude Swiss franc claims of Austrian residents, the long-term net liabilities ratio in Swiss francs is around -4% of GDP. For more information, see Auer et al. (2012).

Chart 7

Austrian banks' average claims on nonbanks by region

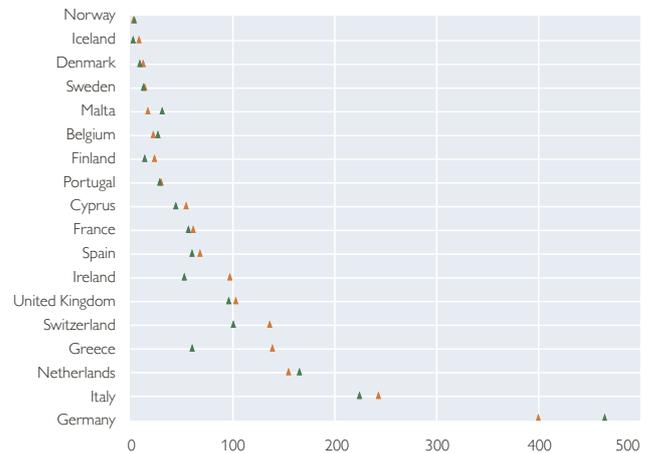
Eastern Europe

EUR million



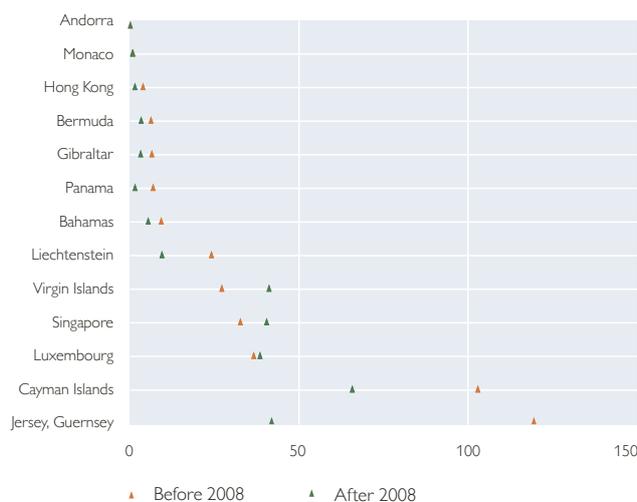
Western Europe

EUR million



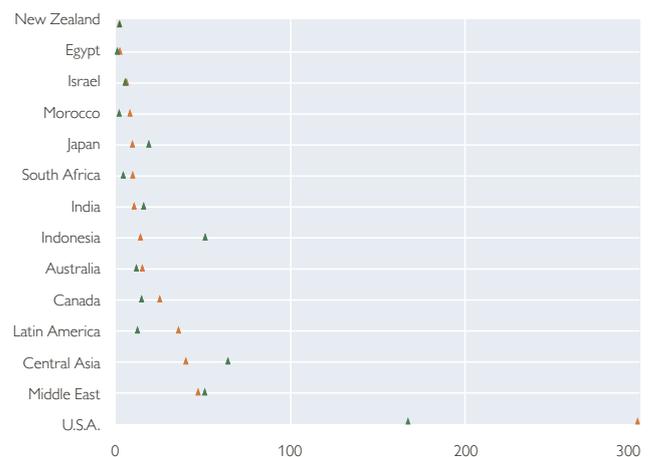
Offshore financial centers

EUR million



Outside Europe

EUR million



▲ Before 2008 ▲ After 2008

Source: Author's calculations using supervisory data.

Note: The chart is based on consolidated locational statistics. The pre-crisis period includes quarterly data from the first quarter of 2005 to the fourth quarter of 2008, the post-crisis period includes quarterly data from the first quarter of 2009 to the fourth quarter of 2012. Claims include loans, securities and shares.

I find evidence for a currency-maturity mismatch for Austrian banks, though on a smaller scale than for the total of European resident banks. After 2008, long-term net deposits in U.S. dollars were around -3% of Austrian GDP, whereas short-term net deposits in U.S. dollars accounted for about $+2\%$. We observe a growing divergence not prior to the Lehman crisis, but rather afterward. Prior to Lehman,

Austrian banks were holding a surplus of U.S. dollar funding. It is important to note that these data account for neither off-balance sheet items (such as derivatives) nor positions held by foreign subsidiaries. It is likely that Austrian banks close the currency-maturity gap in U.S. dollars through the use of derivatives to hedge currency risk. Still, for Austrian banks continued access to U.S. dollar funding seems to

be important, though very few have direct affiliates in U.S. dollar-denominated locations.¹⁵ This leads me back to the importance of counterparty locations and, therefore, the importance of recipient countries of lending flows.

5 Which lending recipient countries are important for Austria?

The approach I follow here is to quantify cross-border financial linkages before and after the crisis. Where did cross-border credit provided by Austrian banks go to and how differently were countries affected by the crisis? Chart 7 illustrates the average amount of Austrian banks' claims on nonbanks by country within four regions: Eastern Europe, Western Europe, offshore financial centers and non-European countries.¹⁶ The precrisis period includes quarterly data from the first quarter of 2005 to the fourth quarter of 2008, the postcrisis period includes quarterly data from the first quarter of 2009 to the fourth quarter of 2012. Almost all Eastern European countries (with the exception of Albania, Hungary and Poland) recorded more cross-border credit after the crisis. The amount of claims on the countries of the other three regions decreased after the crisis (with the exception of the amount of claims on Malta, Germany, Virgin Islands and some countries in Asia). To investigate the heterogeneity of recipient countries and banks' adjustments to their lending behavior more in-depth, we need to explore the effects of country-specific regulatory environments on global banking activity.

How Austrian banks adjust their credit provision to a particular country

depends not only on their overall credit provision capacities but also on the regulatory environment in the recipient country. In a multi-country project conducted by the IBRN 2014 we aim to map the effect of regulatory policies on the activities of global banks. For this purpose Cerrutti et al. (2015) provide new data and measures of quarterly changes in prudential instruments for 57 countries for the years 2000 to 2014.

6 Summary

Cross-border flows potentially have a strong impact on financial stability at the global level. On the one hand, international financial integration can have great benefits such as risk diversification and increased competition. On the other hand, it can lead to financial imbalances that in turn contribute to the build-up of financial stability risks. Under the International Banking Research Network (IBRN), researchers at 26 central banks are working to enrich the analysis of global banking themes with insights gained from confidential micro banking data. The first part of this article outlines some stylized facts about recent cross-border banking activities of Austrian banks. Austrian multinational banks are small compared to their German or U.S. counterparts in terms of their cross-border claims volumes; when measured as a percentage of GDP, however, Austrian banks' cross-border claims are substantially larger than those of their international peers.

In the second part of this study I reflect on four basic aspects of cross-border banking flows with a

¹⁵ For more general information on U.S. dollar funding see: https://www.esrb.europa.eu/pub/pdf/recommendations/2011/ESRB_2011_2.en.pdf?893058c770aff5809f955f3931baac8c (accessed on June 8, 2015).

¹⁶ Unfortunately, for this time period consolidated banking data for the liability side by country split is not available.

potential impact on financial stability. We see that first, cross-border credit is more volatile than domestic credit. Second, multinational banks rely on different types of funding sources (deposit versus wholesale funding) to finance credit expansion. Third, borrowing short and lending long in a foreign currency creates a currency-maturity mismatch that requires continued monitoring. Finally, the geographical distribution of banking counterparties matters. Not surprisingly,

capital flows are quite heterogeneous across recipient countries. The question that the IBRN (2014) aims to highlight is whether multinational banks have been taking advantage of regulatory arbitrage or not. The policies implemented at national levels to reduce risk may in fact increase risk in other countries. Therefore, in-depth research into the relative effects of changes in the regulatory environment in recipient countries is warranted.

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Cutoff date for data: June 15, 2015

Conventions used in the tables:

× = No data can be indicated for technical reasons

.. = Data not available at the reporting date

Revisions of data published in earlier volumes are not indicated.

Discrepancies may arise from rounding.

International financial market indicators

Table A1

Short-term interest rates¹

	2007	2008	2009	2010	2011	2012	2013	2014
<i>Three-month rates, period average, %</i>								
Euro area	4.28	4.63	1.23	0.81	1.39	0.57	0.22	0.21
U.S.A.	5.30	2.91	0.69	0.34	0.34	0.43	0.27	0.23
Japan	0.73	0.85	0.59	0.39	0.34	0.33	0.24	0.21
United Kingdom	5.95	5.49	1.23	0.74	0.88	0.86	0.50	0.50
Switzerland	2.55	2.58	0.38	0.19	0.12	0.07	0.02	0.01
Czech Republic	3.10	4.04	2.19	1.31	1.19	1.00	0.46	0.36
Hungary	7.75	8.87	8.64	5.51	6.19	6.98	4.31	2.41
Poland	4.74	6.36	4.42	3.92	4.54	4.91	3.02	2.52

Source: Bloomberg, Eurostat, Thomson Reuters.

¹ Average rate at which a prime bank is willing to lend funds to another prime bank for three months.

Table A2

Long-term interest rates¹

	2007	2008	2009	2010	2011	2012	2013	2014
<i>Ten-year rates, period average, %</i>								
Euro area	4.32	4.31	3.82	3.62	4.39	3.89	2.99	2.04
U.S.A.	4.63	3.65	3.24	3.20	2.77	1.79	2.34	2.53
Japan	1.67	1.49	1.34	1.17	1.12	0.85	0.71	0.55
United Kingdom	5.06	4.50	3.36	3.36	2.87	1.74	2.03	2.14
Switzerland	2.93	2.90	2.20	1.63	1.47	0.65	0.95	0.69
Austria	4.30	4.36	3.94	3.23	3.32	2.37	2.01	1.49
Czech Republic	4.30	4.63	4.84	3.88	3.71	2.78	2.11	1.58
Hungary	6.74	8.24	9.12	7.28	7.64	7.89	5.92	4.81
Poland	5.48	6.07	6.12	5.78	5.96	5.00	4.03	3.52

Source: ECB, Eurostat, Thomson Reuters, national sources.

¹ Yields of long-term government bonds.

Table A3

Stock indices

	2007	2008	2009	2010	2011	2012	2013	2014
<i>Annual change in %, period average</i>								
Euro area: EURO STOXX	16.54	-24.68	-25.29	13.38	-3.60	-6.36	17.53	13.07
U.S.A.: S&P 500	12.67	-17.33	-22.35	20.24	11.27	8.74	19.14	17.58
Japan: Nikkei 225	5.34	-28.45	-23.07	7.22	-5.94	-3.37	48.80	14.22
United Kingdom: FTSE 100	8.14	-16.20	-14.86	19.76	3.90	0.96	12.75	3.24
Switzerland: SMI	11.37	-22.88	-18.15	14.27	-6.96	4.88	24.14	9.26
Austria: ATX	17.30	-27.28	-36.45	19.85	-3.69	-14.79	16.94	-2.36
Czech Republic: PX 50	20.0	-23.5	-29.2	21.7	-5.1	-14.6	2.5	1.62
Hungary: BUX	15.8	-24.3	-18.7	40.1	-8.7	-12.0	3.3	-3.89
Poland: WIG	36.9	-31.0	-21.3	33.6	4.4	-6.7	16.1	8.06

Source: Thomson Reuters.

Table A4

Corporate bond spreads¹

	2007	2008	2009	2010	2011	2012	2013	2014
<i>Percentage points, period average</i>								
Euro area								
AA	0.72	2.04	2.17	1.33	1.90	1.47	0.89	0.61
BBB	1.34	3.84	5.23	2.95	3.75	3.56	2.25	1.73
U.S.A.								
AA	0.95	3.03	2.57	1.32	1.68	1.50	1.12	0.88
BBB	1.50	4.16	4.51	2.21	2.34	2.59	2.17	1.76

Source: Thomson Reuters.

¹ Spreads of seven- to ten-year corporate bonds against ten-year government bonds (euro area: German government bonds).

Financial indicators of the Austrian corporate and household sectors

Table A5

Financial investment of households¹

	2007	2008	2009	2010	2011	2012	2013	2014
<i>EUR billion, four-quarter moving sum</i>								
Currency	0.6	0.7	0.9	1.0	1.1	0.6	1.2	0.8
Deposits	10.5	11.6	7.6	1.6	4.6	3.8	1.9	3.3
Debt securities ²	4.6	4.8	-0.4	1.5	1.8	0.2	-1.8	-4.4
Shares and other equity ³	2.3	1.6	1.7	1.7	0.8	1.1	-0.1	2.3
Mutual fund shares	-0.4	-4.0	0.9	2.4	-1.4	0.9	2.7	3.5
Insurance technical reserves	4.0	3.7	4.6	3.7	2.1	2.7	2.4	2.0
Other accounts receivable	1.2	1.3	0.2	0.7	1.0	1.5	1.2	2.2
Total financial investment	22.8	19.7	15.5	12.6	10.0	10.8	7.5	9.7

Source: OeNB (financial accounts).

¹ Including nonprofit institutions serving households.

² Including financial derivatives.

³ Other than mutual fund shares.

Table A6

Household¹ income and savings

	2007	2008	2009	2010	2011	2012	2013	2014
<i>EUR billion, four-quarter moving sum</i>								
Net disposable income	166.8	171.6	171.9	174.1	178.0	185.7	185.8	189.9
Savings	20.3	20.7	19.5	16.6	14.1	16.9	13.6	14.4
Saving ratio in % ²	12.1	11.9	11.3	9.4	7.8	9.0	7.3	7.5

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

¹ Including nonprofit institutions serving households.

² Saving ratio = savings / (disposable income + increase in accrued occupational pension benefits).

Table A7

Financing of nonfinancial corporations

	2007	2008	2009	2010	2011	2012	2013	2014
<i>EUR billion, four-quarter moving sum</i>								
Debt securities ¹	3.4	1.8	4.3	1.4	4.2	2.8	1.7	-0.5
Loans	21.8	12.0	-10.1	5.8	6.4	4.5	1.0	4.1
Shares and other equity	15.5	8.0	2.9	0.4	9.6	2.0	5.7	4.2
Other accounts payable	1.9	-0.2	-5.8	5.9	3.4	1.6	3.6	1.2
Total external financing	42.6	21.6	-8.7	13.5	23.6	10.9	12.0	9.0

Source: OeNB (financial accounts).

¹ Including financial derivatives.

Table A8

Insolvency indicators

	2007	2008	2009	2010	2011	2012	2013	2014
Default liabilities (EUR million)	2,441	2,969	4,035	4,700	2,775	3,206	6,255	2,899
Defaults (number)	3,023	3,270	3,741	3,522	3,260	3,505	3,266	3,275

Source: Kreditschutzverband von 1870.

Note: Default liabilities for 2013 include one large insolvency.

Table A9

Housing market indicators

	2007	2008	2009	2010	2011	2012	2013	2014
<i>2000=100</i>								
Residential Property Price Index								
Vienna	119.2	125.5	133.5	143.9	156.1	180.7	196.3	204.6
Austria	114.1	115.4	119.8	127.3	132.7	149.1	156.0	161.4
Austria excluding Vienna	112.3	111.6	114.8	121.1	124.0	137.4	141.1	145.4
<i>2000=100</i>								
Rent prices¹								
Vienna: apartments	114.9	116.8	116.3	117.7	121.0	126.3	129.5	134.9
Austria excluding Vienna: apartments	115.9	122.7	144.7	145.9	148.2	144.1	162.5	158.9
Austria excluding Vienna: single-family houses	108.5	112.9	101.5	101.7	97.1	94.6	95.5	97.4
Rents of apartments excl. utilities, according to CPI	91.2	92.4	96.7	100.0	103.3	107.8	111.2	115.6
OeNB Fundamental Residential Property Price Indicator²								
Vienna	-5.9	-2.5	-4.9	-0.8	5.5	14.6	19.0	20.6
Austria	-7.4	-6.9	-12.7	-9.0	-5.5	0.0	-1.3	-0.7

Source: OeNB, Vienna University of Technology.

¹ Free and regulated rents.

² Deviation from fundamental price in %.

Austrian financial intermediaries¹

Table A10

Total assets and off-balance sheet operations

	2007	2008	2009	2010	2011	2012	2013	2014
<i>End of period, EUR million</i>								
Total assets on an unconsolidated basis	899,542	1,069,100	1,029,043	978,559	1,014,278	982,114	927,973	896,424
of which: total domestic assets	626,203	799,453	691,466	659,561	693,394	678,500	645,275	611,541
Total assets on a consolidated basis	1,073,258	1,175,646	1,139,961	1,130,853	1,166,313	1,163,595	1,089,713	1,079,000
Total assets of CESEE subsidiaries ¹	231,742	267,484	254,356	263,810	270,052	276,352	264,998	285,675
Leverage ratio (consolidated, %) ²	4.6	4.5	5.2	5.8	5.8	6.1	6.5	5.7

Source: OeNB.

¹ Including Yapı ve Kredi Bankası (not fully consolidated by parent bank UniCredit Bank Austria) since 2014.

² Definition up to 2013: Tier 1 capital after deduction in % of total assets. Definition as of 2014 according to Basel III.

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

Table A11

Sectoral distribution of domestic loans

	2007	2008	2009	2010	2011	2012	2013	2014
<i>End of period, EUR million</i>								
All currencies combined								
Banks	137,607	226,103	195,737	169,596	184,789	169,364	147,537	123,732
Nonbanks	287,542	308,672	311,510	321,340	329,886	330,209	326,594	328,249
of which: nonfinancial corporations	121,992	133,608	132,346	135,427	138,930	140,383	140,291	137,328
households ¹	117,601	124,221	128,178	135,215	138,355	139,048	139,052	140,988
general government	26,303	25,073	24,923	26,374	29,015	27,972	26,007	27,626
other financial intermediaries	21,646	25,770	26,063	24,324	23,586	22,806	21,244	22,307
Foreign currency								
Banks	24,717	55,697	42,780	25,851	25,288	19,422	16,013	14,939
Nonbanks	46,696	52,073	53,539	58,742	57,298	47,647	40,104	93,889
of which: nonfinancial corporations	9,884	12,134	11,473	12,550	12,181	9,155	6,985	64,000
households ¹	32,279	34,758	37,064	40,040	38,718	32,904	28,385	25,376
general government	1,603	1,652	1,628	2,627	3,266	2,827	2,477	2,774
other financial intermediaries	2,930	3,529	3,374	3,525	3,133	2,761	2,257	1,739

Source: OeNB.

¹ Including nonprofit institutions serving households.

Note: Figures are based on monetary statistics.

¹ Since 2007, the International Monetary Fund (IMF) has published Financial Soundness Indicators (FSIs) for Austria (see also www.imf.org). In contrast to some FSIs that take only domestically-owned banks into account, the OeNB's Financial Stability Report takes into account all banks operating in Austria. For this reason, some of the figures presented here may deviate from the figures published by the IMF.

Table A12

Loan quality

	2007	2008	2009	2010	2011	2012	2013	2014
<i>End of period, % of claims on nonbanks</i>								
Specific loan loss provisions for loans to nonbanks (unconsolidated)	2.4	2.2	2.8	3.2	3.2	3.4	3.5	3.3
Specific loan loss provisions for loans to nonbanks (consolidated) ¹	2.4	2.4	3.5	4.1	4.3	4.6	4.8	4.5
Specific loan loss provisions for loans to nonbanks (Austrian banks' subsidiaries in CESEE)	2.7	2.9	5.3	6.5	7.3	7.6	8.0	7.3
Nonperforming loan ratio (unconsolidated) ²	x	3.0	4.2	4.7	4.5	4.7	4.1	4.4
Nonperforming loan ratio (consolidated) ²	x	x	6.7	8.0	8.3	8.7	8.6	7.0
Nonperforming loan ratio (Austrian banks' subsidiaries in CESEE)	x	x	9.6	13.4	15.0	14.7	14.9	11.8

Source: OeNB.

¹ Estimate.² Estimate for loans to corporates and households (introduced in Financial Stability Report 24 to better indicate the loan quality in retail business; not comparable to former ratios).

Table A13

Exposure to CESEE

	2007	2008	2009	2010	2011	2012	2013	2014
<i>End of period, EUR million</i>								
Total exposure according to BIS	190,775	199,493	203,975	209,352	216,086	209,818	201,768	184,768
Total indirect lending to nonbanks ¹	146,654	170,566	160,248	168,710	171,311	171,117	161,439	177,389
Total direct lending ²	x	49,724	50,665	49,460	52,010	51,539	52,926	43,144
Foreign currency loans of Austrian banks' subsidiaries in CESEE	40,197	54,249	47,323	49,110	51,531	52,406	48,253	42,980

Source: OeNB.

¹ Lending (net lending after risk provisions) to nonbanks by all fully consolidated subsidiaries in CESEE.² Direct lending to nonbanks and nonfinancial institutions in CESEE according to monetary statistics.

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

Table A14

Profitability on an unconsolidated basis

	2007	2008	2009	2010	2011	2012	2013	2014
<i>End of period, EUR million</i>								
Operating income	17,512	20,557	17,850	19,705	19,227	19,115	18,967	19,963
of which: net interest income	7,399	8,248	8,769	9,123	9,622	8,813	8,814	9,317
securities and investment earnings	3,521	7,193	3,328	4,026	3,662	3,670	3,018	3,550
fees and commission income	4,710	4,218	3,605	3,950	3,835	3,848	4,073	4,260
trading income	290	-812	486	664	325	631	495	368
other operating income	1,592	1,710	1,662	1,942	1,784	2,153	2,567	2,468
Operating expenses	10,849	11,416	11,080	11,547	11,714	12,193	12,835	13,904
of which: staff costs	5,468	5,776	5,697	5,802	5,998	6,243	6,507	7,383
other administrative expenses	3,703	3,952	3,766	3,940	4,028	4,124	4,301	4,459
other operating expenses	1,678	1,688	1,617	1,805	1,688	1,827	2,027	2,062
Operating profit/loss	6,663	9,141	6,770	8,159	7,513	6,922	6,132	6,038
Net profit after taxes	4,787	1,891	43	4,207	1,211	3,214	-935	-6,691
Return on assets (%) ^{1,2}	0.6	0.2	0	0.4	0.1	0.3	-0.1	-0.7
Return on equity (% tier 1 capital) ^{1,2}	9.6	3.0	0.1	5.8	1.6	4.3	-1.2	-9.9
Interest income to gross income (%)	42	40	49	46	50	46	46	47
Cost-to-income ratio (%)	62	56	62	59	61	64	68	70

Source: OeNB.

¹ Annual surplus in % of total assets and tier 1 capital, respectively.² Retrospectively modified due to a change of calculation.

Table A15

Profitability of Austrian subsidiaries¹ in CESEE

	2007	2008	2009	2010	2011	2012	2013	2014
<i>End of period, EUR million</i>								
Operating income	10,178	14,102	13,396	13,436	13,622	13,268	13,307	12,160
of which: net interest income	6,748	9,231	8,693	9,333	9,402	8,781	8,414	9,069
securities and investment earnings	x	103	50	47	70	61	63	27
fee and commission income	2,847	3,432	2,916	2,954	3,092	2,992	3,164	3,475
trading income	x	46	1,238	368	426	790	749	-139
other income	583	1,291	498	735	631	643	917	-272
Operating expenses	5,495	6,961	6,355	6,779	6,893	7,034	7,054	6,413
of which: staff costs	x	3,200	2,739	2,870	2,997	2,992	2,922	2,979
other administrative expenses	x	3,761	3,529	3,809	3,817	3,958	4,087	1,912
Operating profit/loss	4,683	7,141	7,129	6,757	6,809	6,317	6,298	5,747
Net profit after taxes	3,104	4,219	1,775	2,063	1,757	2,093	2,216	747
Return on assets (%) ²	1.6	1.8	0.7	0.8	0.7	0.8	0.8	0.3
Return on equity (% tier 1 capital) ²	x	x	8.2	9.2	7.2	8.2	8.4	..
Interest income to gross income (%)	66	65	65	69	69	66	63	75
Cost-to-income ratio (%)	54	49	47	50	50	52	53	40

Source: OeNB.

¹ Since the first quarter of 2014, pro rata data of Yapi ve Kredi Bankasi, a joint venture of UniCredit Bank Austria in Turkey, has been included.² End-of-period result expected for the full year after tax as a percentage of average total assets.

Note: Due to changes in reporting, the comparability of values as from 2008 with earlier values is limited. Furthermore, some positions have been available in detail only since 2008. Since end-2014 other income has been netted with other expenses.

Table A16

Profitability on a consolidated basis

	2007	2008	2009	2010	2011	2012	2013	2014
<i>End of period, EUR million</i>								
Operating income	28,118	33,642	37,850	37,508	37,207	37,673	35,271	28,656
of which: net interest income	17,961	19,308	19,451	20,390	20,426	19,259	18,598	19,325
net fee-based income	8,202	8,469	7,160	7,678	7,592	7,260	7,590	7,740
net profit/loss on financial operations	932	-2,135	2,560	997	845	1,137	670	462
other operating income	1,023	8,000	8,679	8,443	8,344	10,016	8,413	1,129
Operating expenses ¹	17,041	25,788	22,230	24,030	26,839	25,582	27,318	19,367
of which: staff costs	9,145	10,166	9,522	9,941	10,279	10,391	10,378	9,545
other administrative expenses	5,849	6,364	5,979	6,262	6,316	6,410	6,628	6,630
other operating expenses	2,047	9,258	6,729	7,827	10,244	8,781	10,311	3,191
Operating profit/loss	11,072	7,855	15,620	13,478	10,369	12,090	7,953	9,289
Net profit after taxes	6,829	586	1,530	4,577	711	2,966	-1,035	1,423
Return on assets (%) ^{2,5}	0.79	0.10	0.18	0.46	0.10	0.31	-0.04	0.12
Return on equity (% tier 1 capital) ^{2,5}	18.2	2.1	3.59	8.19	1.71	5.14	-0.68	1.78
Interest income to gross income (%) ³	64	69	59	64	66	61	63	67
Cost-to-income ratio (%) ⁴	61	72	53	58	66	62	73	68

Source: OeNB.

¹ As from 2008, operating expenses refer to staff costs and other administrative expenses only.² End-of-period result expected for the full year before minority interests as a percentage of average total assets and average tier 1 capital, respectively.³ All figures represent the ratio of net interest income to total operating income less other operating expenses.⁴ All figures represent the ratio of total operating expenses less other operating expenses to total operating income less other operating expenses.⁵ Retrospectively modified due to a change of calculation.

Note: Due to changes in reporting, the comparability of consolidated values as from 2008 with earlier values is limited. Since end-2014 other income has been netted with other expenses.

Table A17

Solvency

	2007	2008	2009	2010	2011	2012	2013	2014
<i>End of period, EUR million</i>								
Own funds	69,559	74,707	80,574	86,228	88,071	88,204	88,994	87,801
Own funds requirements	599,418	678,166	633,313	653,313	649,613	621,925	578,425	563,197
<i>End of period, eligible capital and tier 1 capital, respectively, as a percentage of risk-weighted assets</i>								
Consolidated total capital adequacy ratio	11.6	11.0	12.8	13.2	13.6	14.2	15.4	15.6
Consolidated tier 1 capital ratio	8.1	7.7	9.3	10.0	10.3	11.0	11.9	11.8
Consolidated core tier 1 capital ratio (core equity tier 1 as from 2014)	x	6.9	8.5	9.4	9.8	10.7	11.6	11.8

Source: OeNB.

Note: As from 2014, figures are calculated according to CRD IV requirements. Therefore, comparability with previous figures is limited.

Table A18

Liquidity risk

	2007	2008	2009	2010	2011	2012	2013	2014
	<i>End of period, %</i>							
Short-term loans to short-term liabilities	64.0	67.0	72.5	64.2	65.9	66.0	59.0	61.7
Short-term loans and other liquid assets to short-term liabilities	109.9	109.0	124.8	118.9	118.1	120.6	109.0	116.5
Liquid resources of the first degree: 5% quantile of the ratio between available and required liquidity of degree 1 ¹	140.0	149.4	139.9	145.1	152.4	295.4	278.2	x
Liquid resources of the second degree: 5% quantile of the ratio between available and required liquidity of degree 2	110.2	113.5	110.8	111.3	110.9	112.1	110.1	x

Source: OeNB.

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

Table A19

Market risk¹

	2007	2008	2009	2010	2011	2012	2013	2014
	<i>End of period, EUR million and %</i>							
Interest rate risk								
Basel ratio for interest rate risk, % ²	4.5	3.9	3.7	3.9	5	4.0	3.8	5.2
Capital requirement for the position risk of interest rate instruments in the trading book	1082.6	953.3	780.9	618.3	625	441.9	324.2	x
Exchange rate risk								
Capital requirement for open foreign exchange positions	74.1	110.3	75.2	81.1	92.3	70.8	61.7	x
Equity price risk								
Capital requirement for the position risk of equities in the trading book	180.6	186.9	176.9	197.1	191.3	151.5	107.1	x

Source: OeNB.

¹ Based on unconsolidated data. The calculation of capital requirements for market risk combines the standardized approach and internal value-at-risk (VaR) calculations. The latter use previous day 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.

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

Table A20

Market indicators of selected Austrian financial instruments

	2007	2008	2009	2010	2011	2012	2013	2014
<i>% of mid-2005 prices</i>								
Share prices								
Erste Group Bank	116.4	91.2	66.4	91.7	35.8	61.2	64.9	49.3
Raiffeisen Bank International	198.6	148.2	75.7	82.5	40.3	60.3	49.1	25.1
EURO STOXX – Banks	130.2	87.2	70.3	52.4	32.8	35.9	45.2	43
Uniq	129.3	108.7	80.3	90.2	57.8	61.2	60	50.3
Vienna Insurance Group	123.7	90.7	81	88.6	71.7	90.8	81.4	83.4
EURO STOXX – Insurance	130.8	96.6	75	71	58.8	76.4	101.8	105.6
<i>Price-to-book value ratio</i>								
Relative valuation								
Erste Group Bank	1.74	1.36	0.80	1.30	0.48	0.88	0.93	0.71
Raiffeisen Bank International	2.84	2.12	1.12	1.15	0.53	0.83	0.92	0.47
EURO STOXX – Banks	1.75	1.10	0.94	0.64	0.36	0.60	0.96	0.72
Uniq	2.18	1.83	1.41	2.25	1.18	1.05	0.93	0.78
Vienna Insurance Group	1.79	1.31	1.03	1.21	0.90	1.21	1.07	1.09
EURO STOXX – Insurance	1.68	1.23	1.03	0.94	0.69	0.81	0.93	1.15

Source: Thomson Reuters, Bloomberg.

Table A21

Key indicators of Austrian insurance companies

	2007	2008	2009	2010	2011	2012	2013	2014
<i>End of period, EUR million</i>								
Business and profitability								
Premiums	15,739	16,180	16,381	16,652	16,537	16,341	16,608	17,077
Expenses for claims and insurance benefits	10,797	11,608	12,348	11,882	12,826	12,973	13,150	14,157
Underwriting results	301	-119	132	373	295	455	592	477
Profit from investments	4,168	2,370	2,729	3,203	2,964	3,391	3,354	3,211
Profit from ordinary activities	1,773	411	744	1,101	1,162	1,395	1,524	1,421
Acquisition and administrative expenses	x	x	3,241	3,382	3,541	3,499	3,528	3,573
Total assets	86,951	93,911	99,227	105,099	105,945	108,374	110,391	113,662
Investments								
Total investments	81,036	87,698	92,260	98,300	99,776	103,272	105,496	107,442
of which: debt securities	32,989	35,209	36,397	38,223	37,813	37,614	39,560	41,667
stocks and other equity securities ¹	11,452	12,531	12,811	12,559	12,363	12,505	12,464	12,619
real estate	4,818	5,138	5,246	5,703	5,236	5,371	5,689	5,858
Investments for unit-linked and index-linked life insurance	8,894	9,319	12,822	15,325	15,870	18,330	19,127	20,179
Claims on domestic banks	14,854	17,423	17,168	16,458	16,405	16,872	16,687	15,800
Reinsurance receivables	x	1,272	1,218	1,229	1,733	1,933	824	918
Risk capacity (solvency ratio), %	261	340	300	356	332	350	368	380

Source: FMA, OeNB.

¹ Contains shares, share certificates (listed and not listed) and all equity instruments held by mutual funds.

Table A22

Assets held by Austrian mutual funds

	2007	2008	2009	2010	2011	2012	2013	2014
<i>End of period, EUR million</i>								
Domestic securities	58,920	48,777	48,765	51,001	50,046	50,963	49,757	52,116
of which: debt securities	14,938	14,601	16,013	15,884	16,683	17,527	16,203	15,467
stocks and other equity securities	3,812	1,473	2,863	3,696	2,991	3,637	3,610	3,345
Foreign securities	106,726	78,655	89,845	96,684	87,458	96,854	99,647	110,397
of which: debt securities	66,473	57,598	61,961	61,744	58,695	63,661	62,972	69,642
stocks and other equity securities	23,723	8,899	12,663	15,540	12,097	14,208	16,278	17,910
Net asset value	165,646	127,432	138,610	147,684	137,504	147,817	149,404	162,513
of which: retail funds	117,864	82,804	85,537	88,313	78,299	84,158	83,238	89,163
institutional funds	47,782	44,628	53,073	59,372	59,205	63,659	66,167	73,350
Consolidated net asset value	137,092	105,620	115,337	123,794	116,747	126,831	128,444	138,642

Source: OeNB.

Table A23

Structure and profitability of Austrian fund management companies

	2007	2008	2009	2010	2011	2012	2013	2014
<i>End of period, EUR million</i>								
Total assets	544	504	642	699	661	644	670	725
Operating profit	62	9	106	142	125	111	131	158
Net commissions and fees earned	155	100	258	302	284	283	310	368
Administrative expenses ¹	103	100	185	199	195	205	219	246
Number of fund management companies	28	29	30	29	29	29	29	29
Number of reported funds	2,329	2,308	2,182	2,203	2,171	2,168	2,161	2,118

Source: OeNB.

¹ Administrative expenses are calculated as the sum of staff and material expenses.

Table A24

Assets held by Austrian pension funds

	2007	2008	2009	2010	2011	2012	2013	2014
<i>End of period, EUR million</i>								
Total assets	12,917	11,936	13,734	14,976	14,798	16,335	17,385	19,011
of which: direct investment	x	x	1,239	968	1,139	1,139	1,640	1,065
mutual funds	12,297	11,625	11,235	13,944	13,626	15,278	15,745	17,946
foreign currency (without derivatives)	x	x	x	x	x	5,714	5,964	7,578
stocks	x	x	x	x	x	4,805	5,472	6,250
debt	x	x	x	x	x	8,464	7,650	9,163
real estate	x	x	x	x	x	567	583	576
cash and deposits	x	x	x	1,181	1,624	1,488	2,033	1,598

Source: OeNB, FMA.

Table A25

Assets held by Austrian severance funds

	2007	2008	2009	2010	2011	2012	2013	2014
<i>End of period, EUR million</i>								
Total direct investment	598.3	1,062.2	884	1,004	1,393	1,442	1,528	1,415
of which: euro-denominated	579.6	1,043.4	866	985	1,363	1,415	1,507	1,299
foreign currency-denominated	x	x	17	19	30	27	21	x
Accrued income claims from direct investment	8.6	16.5	15	16	19	22	21	15
Total indirect investment	1,023.8	1,076.4	1,946	2,569	2,891	3,834	4,701	5,912
of which: total of euro-denominated investment in mutual fund shares	963.8	1,038.7	1,858	2,379	2,741	3,540	4,220	5,190
total of foreign currency-denominated investment in mutual fund shares	60.0	37.7	88	190	151	294	481	722
Total assets assigned to investment groups	1,622.1	2,138.6	2,830	3,573	4,284	5,254	6,218	7,306

Source: OeNB.

Note: Due to special balance sheet operations, total assets assigned to investment groups deviate from the sum of total indirect investments.

Table A26

Transactions and system disturbances in payment and securities settlement systems

	2007	2008	2009	2010	2011	2012	2013	2014
<i>Number of transactions in million, value of transactions in EUR billion</i>								
HOAM.AT								
Number	x	1	1	1	1	1	1	1
Value	x	4,364	9,305	9,447	7,667	9,974	5,906	7,438
System disturbances	x	4	5	4	1	1	3	0
Securities settlement systems								
Number	1	1	2	2	2	2	2	2
Value	270	247	365	398	439	418	369	377
System disturbances	..	0	0	0	0	1	5	2
Retail payment systems								
Number	254	273	574	617	665	688	1,005	x
Value	19	22	46	49	50	55	72	x
System disturbances	17	16	19	25	4	4	2	x
Participation in international payment systems								
Number	11	13	31	31	36	41	53	113
Value	1,078	998	1,225	1,164	1,306	1,820	1,643	2,463
System disturbances	0	0	0	0	0	0	0	0

Source: OeNB.

Note: Annual data refer to the respective 12-month period, semiannual data refer to the respective six-month period.

Notes

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German | irregularly
English | irregularly

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