

The Priorities of Deleveraging in the Euro Area and Austria and Its Implications for CESEE

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Bank deleveraging is often used synonymously for a reduction in the supply of credit to the real economy, which hampers economic growth. In this paper, we investigate this hypothesis empirically. We define deleveraging as the increasing ratio of capital to total assets and aim at identifying the priorities of recent deleveraging in the euro area and Austria and its implications for Central, Eastern and Southeastern Europe (CESEE). The data analysis utilizes ECB balance sheet data for monetary financial institutions (MFIs) for the euro area and Austria; reporting data of Austrian banks at the consolidated level and BIS locational statistics are employed to study the impact of deleveraging on credit to the real economy in CESEE. We focus on the crisis and postcrisis period from October 2008 to February 2014 (latest available data). In addition, we study developments in the precrisis period from June 2003 to October 2008.

The data reveal that banks in the euro area and Austria did in fact deleverage. In the crisis and postcrisis period, the priorities of deleveraging are similar in the euro area and in Austria. The process was predominantly driven by the numerator (capital), which contributed 88% to deleveraging in the euro area and 73% in Austria.

The denominator of leverage (total assets) contributed the remaining shares. In both samples, the decrease in total assets was driven by reductions in interbank lending and external assets. Funding for the real economy increased in the euro area and in Austria.

As external asset reductions play a major role in deleveraging in both the euro area and Austria, we analyze the relevant developments in CESEE in detail. The priorities of Austrian banks' deleveraging in CESEE are similar to those of banks in the euro area and Austria: They were driven by capital increases (99%). The small reduction of total assets in the sample was due to reductions of interbank lending, cash and central bank reserves; funding for households and nonfinancial corporations slightly increased. In line with developments in the euro area and in Austria, banks' sovereign exposure in CESEE increased, too. However, at the disaggregate level, Austrian banks reduced their activities in some countries during the past five years. But these reductions did not translate into decreasing funding for households and nonfinancial corporations in these countries.

We conclude that from a macroprudential perspective, euro area and Austrian banks as well as their subsidiaries in CESEE have set the right priorities in deleveraging since October 2008.

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Popular perception holds that bank deleveraging implies a reduction of loans to the real economy (households and nonfinancial corporations).² Many commentators fear that deleveraging would restrict economic growth in the euro area, Austria and CESEE: The paralysis of the euro area unsecured

interbank market and higher capital and liquidity requirements have caused a reduction of outstanding loans to small and medium-sized enterprises (SMEs) (e.g. Infelise, 2014), which is believed to hamper economic growth. While larger corporations can directly access capital markets as alternative financing

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² See, inter alia, IMF (2010, pp. 18), Cohen-Setton and Vallée (2011) and Cœuré (2013).

sources, SMEs are assumed to be particularly hard hit by deleveraging in the euro area. They have limited access to capital markets and are more dependent on bank loans.

In this article we aim at taking a differentiated approach to analyzing deleveraging by focusing on the empirics of postcrisis balance sheet developments. Although the term deleveraging is widely used, it is rarely carefully defined. Similar to Pühr et al. (2012), we define deleveraging as the reduction of leverage, i.e. the increase in the ratio of bank capital to total assets. Based on empirical evidence for the euro area and Austria, we derive the priorities of deleveraging. We then study the impact of these findings on CESEE.

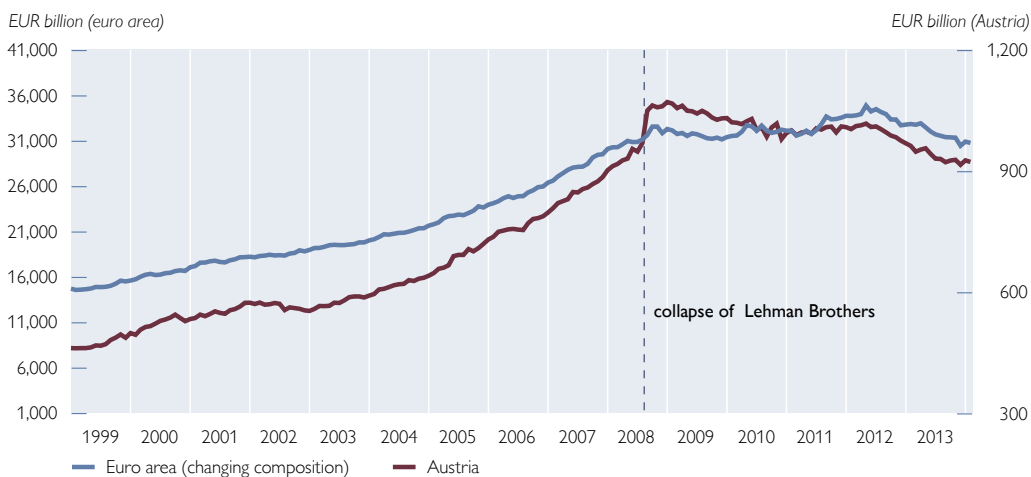
Chart 1 provides a bird's-eye view of MFI³ balance sheet developments in the euro area and Austria since 1999. It shows very strong MFI balance sheet growth in the euro area and in Austria prior to the collapse of Lehman brothers in September 2008.

Euro area total assets (unconsolidated) first peaked in November 2008 at EUR 32.5 trillion.⁴ But the euro area balance sheet total has not been constantly decreasing since then. Rather, after contracting until end-2009, total assets started to rise again in 2010, reaching another peak in May 2012 (EUR 32.9 trillion). However, since then, euro area aggregate MFI total assets have been shrinking, reaching EUR 30.7 trillion in February 2014. Despite this decrease, aggregate total assets still are three times euro area GDP, illustrating the significant size of the banking sector in the euro area.

Although we focus on euro area aggregates, some country-specific developments are noteworthy. For example, Greek banks' balance sheet grew by more than 220% between mid-1999 and mid-2010, when the sovereign debt crisis started. However, Greek MFI total assets decreased by 26% – much more strongly than the euro area average – from June 2010 to February 2014,

Chart 1

Bank Balance Sheet Developments in the Euro Area and in Austria



Source: ECB, OeNB.

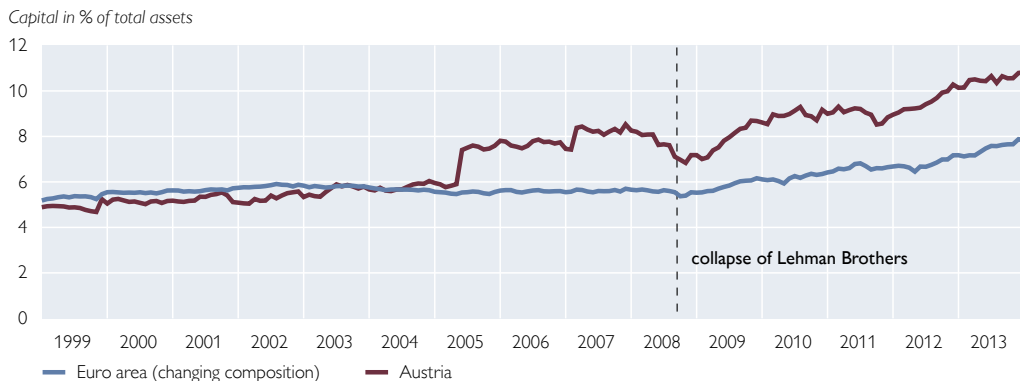
Note: Correcting for the changing composition of the euro area aggregate does not materially affect the shown development.

³ In the following MFIs (monetary financial institutions) and banks are used synonymously.

⁴ Aggregate total assets in the euro area stood at EUR 31.1 trillion by the end of 2009.

Chart 2

MFI Leverage Ratios in the Euro Area and in Austria



Source: ECB.

when it stood at the level of March 2008. Banks' balance sheet size in Spain almost tripled between 1999 and early 2012, when it reached its peak. During the last two years, total assets fell by around 16% in Spain to the level of April 2008. Even in these two countries, the reductions of total assets are small compared to their excessive pre-crisis growth.

The Austrian balance sheet total (unconsolidated⁵) reached its highest level in January 2009 (EUR 1.1 trillion). Since then, a downward trend has been observed; at the end of February 2014, total assets stood at EUR 922.4 billion (–14%).

Chart 2 provides an overview of the leveraging and deleveraging process that accompanied changes in (unconsolidated) total assets⁶ in the euro area and in Austria.

In the precrisis period, the leverage ratio (capital in percent of total assets) of euro area banks remained quite stable. After an increase from 5.2% in January 1999 to 5.9% in August 2002, it decreased again to 5.3% immediately

after the Lehmann collapse (chart 2). In the postcrisis period, the leverage ratio rose quite steadily to 8%.

The leverage ratio of Austrian banks started from a slightly lower level – 4.9% – in January 1999 and had caught up to the euro area level by July 2003. It then increased to almost 7.4% in June 2005 and subsequently reached a trough in November 2008 at 6.8%. In the postcrisis period, it has steadily increased to 10.8%.

What has driven the deleveraging process? In both the euro area and in Austria, the numerator (capital) has contributed the lion's share to the process. In the euro area, 88% of deleveraging has been due to capital increases, in Austria the comparable share is 73%.

Although the reduction of total assets has played a relatively minor role in deleveraging, we investigate its main drivers. The paper is structured along the following lines: In section 1 we analyze the numerator of the leverage for euro area MFIs in more detail; in section 2 we conduct the same exercise

⁵ MFI data are collected on an unconsolidated basis. To capture relevant developments in CESEE we will analyze a different data source in section 2.2.

⁶ MFI data do not contain off-balance sheet items; but they do contain data on on-balance sheet derivatives.

for Austrian data. Based thereon, we investigate the implications of our findings for (de-)leveraging in CESEE. Section 3 provides an assessment of our findings from the perspective of macroprudential supervision. Section 4 concludes.

1 Deleveraging in the Euro Area

Chart 3 illustrates the pre- and postcrisis path of different asset and liability categories based on aggregate balance sheet data of euro area MFIs.

Between June 2003 and October 2008,⁷ both capital and total assets expanded strongly (chart 3, upper panel). The former grew by 55% (from EUR 1.1 trillion to EUR 1.7 trillion), the latter by 67% (from EUR 19.5 trillion to EUR 32.5 trillion). About one-third of total asset growth was due to an increase in loans to non-MFI corporates and households (30%). Interbank loans and external assets each represent around 20% of this balance sheet growth. An increase in all asset categories, except for government securities, is observed for this period of around five years. The developments on the liability side are similar (chart 3, lower panel). Deposits of non-MFI corporates and households represent the largest share of the liability increase, followed by interbank deposits and external liabilities.

Between October 2008 and February 2014, the size of euro area aggregate bank balance sheets shrank by 6% to EUR 30.7 trillion; nevertheless, the volume of aggregate total assets is still higher than at the beginning of 2008. We focus on the relative contributions of various asset classes to the net reduction of total assets (chart 3, upper panel). As some asset classes have been expanding since the onset of the crisis, while others have been shrinking, the gross contributions add up to –100%:

- The reduction of interbank loans contributed –75% (–EUR 1.3 trillion) to the change in total assets.⁸
- External assets⁹ accounted for the second highest contribution (–71%, –EUR 1.3 trillion).
- Shares and other equities as well as money market mutual fund shares contributed another –3.8% (–EUR 67 billion).
- These negative contributions were partly offset by increased funding for governments (+38%, +EUR 692 billion)¹⁰ and remaining assets¹¹ (+35%, +EUR 635 billion).
- Also, the contribution of credit exposures to the real economy (bonds of non-MFI corporates +3.5% (+EUR 63 billion) and loans to households and non-MFI corporates +1.2% (+EUR 22 billion)¹² was positive at 4.7%.

⁷ October 2008 was selected as the reference point because it provides a snapshot of the situation around the Lehman bankruptcy in September 2008, when aggregate balance sheets were still growing. To have the same post- and precrisis period length of 5 years and 4 months, June 2003 was chosen as the starting point for the comparison.

⁸ As interbank transactions mainly take place within the euro area, the change in interbank assets is similar to the change in interbank liabilities in absolute terms.

⁹ External assets are holdings of cash in currencies other than euro, holdings of securities issued by nonresidents of the euro area, loans to nonresidents of the euro area (including banks), and gold and receivables from the IMF (including special drawing rights (SDRs)). They represent claims on nonresidents of the euro area (ECB Manual of MFI balance sheet statistics).

¹⁰ Funding for governments consists of holdings of government securities (+32%, +EUR 581 billion) and loans to general government (+6%, +EUR 111 billion).

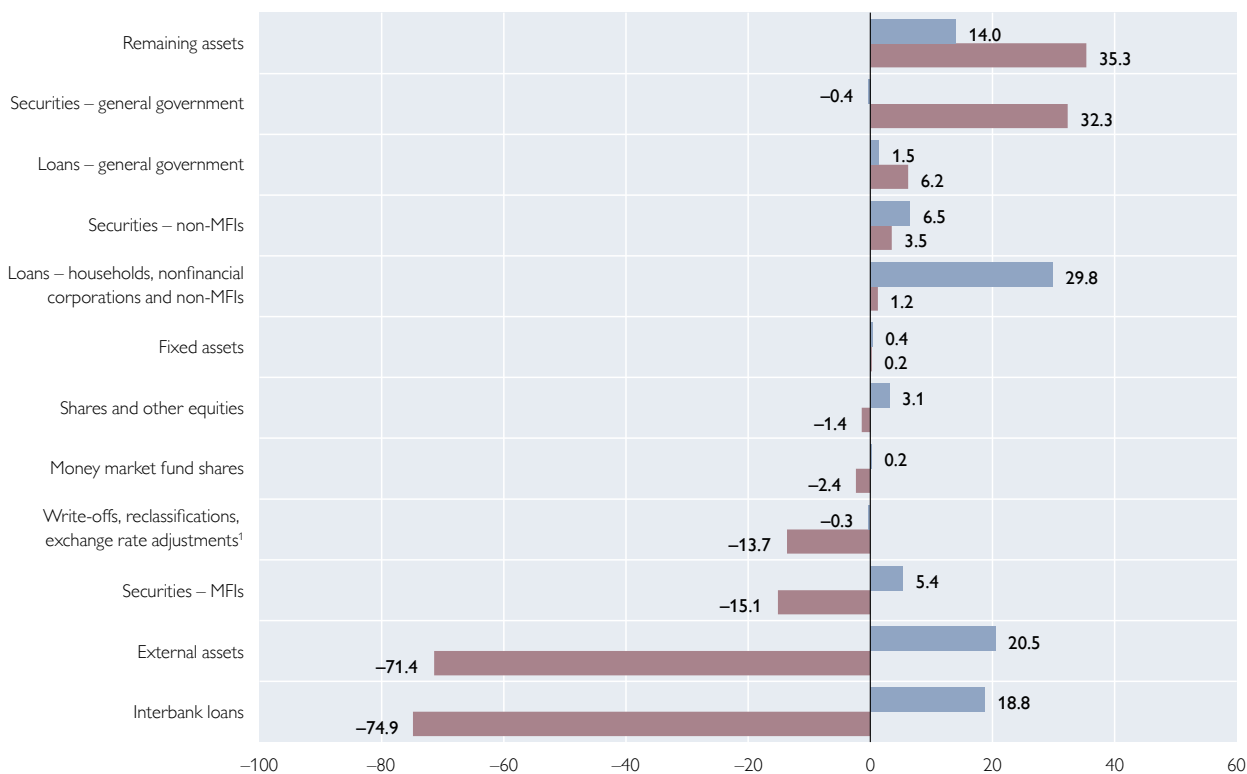
¹¹ Remaining assets consist of, inter alia, derivatives with a positive gross market value, interim account receivables and other assets not accounted for in the other eleven asset categories.

¹² In public discourse, funding for the real economy does not include funding for governments. For consistency reasons we stick to this convention, although funding for governments includes funding of real activities like government services, public investments, and transfers which increase private consumption.

Chart 3

Euro Area Banks: Contribution of Asset and Liability Categories to Changes in the Balance Sheet before and after October 2008

% of total balance sheet increase/decrease



% of total balance sheet increase/decrease



Source: ECB and authors' calculations.

Note: For example, interbank loans accounted for about 19% of total balance sheet growth in the precrisis period (June 2003 to October 2008). From October 2008 to February 2014, around 75% of the balance sheet decline were caused by reduced interbank lending. The contributions of asset categories to the change of the total balance sheet shown in the chart add up to 100%.

¹ Adjustments of loans to non-MFIs.

Chart 3 (lower panel) also provides details regarding the contribution of various liability classes to the reduction of total assets. The data reveal the following contributions from October 2008 to February 2014 (as some liability classes have been expanding since the onset of the crisis, while others have been shrinking, the gross contributions add up to –100%):

- The largest contribution to the reduction of total liabilities stemmed from external liabilities (–91%, –EUR 1.6 trillion).
- Interbank liabilities made a similar contribution (–91%).
- Debt securities issued and money market mutual funds added another –29% (–EUR 513 billion) and –19% (–EUR 345 billion), respectively.
- Deposit liabilities to general governments made a neutral contribution ($\pm 0\%$).
- The strong reduction of external and interbank liabilities was partly counterbalanced by increases in remaining liabilities (+14%, +EUR 257 billion).
- Deposit liabilities of non-MFIs and capital added +78% (+EUR 1.4 trillion) and 38% (+EUR 684 billion), respectively.

The data show that capital increases rank highest in the priorities of deleveraging, followed by the reduction of interbank and external assets. Contrary to popular opinion, bank funding for the real economy has actually increased after the crisis, despite substantial recapitalizations. To find out how this deviation from popular perception can be explained, we first correct loan data for write-offs, reclassifications and exchange rate adjustments, which cause substantial deviations of changes in loan stocks from loan flows in the data set and are often not adjusted for. Second, we focus on bank funding to the real economy rather than loans; in this way,

we can capture banks' role in large nonfinancial corporations' increasing reliance on market funding. Overall, we find that since the outbreak of the crisis (1) funding for governments by euro area banks has increased strongly and (2) funding for the real economy has risen somewhat. Given the overall reduction of total assets, this implies that euro area banks' asset mix has shifted toward funding for governments and the real economy at the expense of external assets and interbank assets. Total funding for the real economy (bank loans plus nonfinancial corporations' bond holdings) has increased by about 5% of the October 2008 stock.

The funding mix of euro area banks has also undergone substantial changes since October 2008; deposit liabilities and capital have increased at the expense of external and interbank liabilities. Two additional observations are noteworthy: First, external liabilities are mainly denominated in U.S. dollars. Euro area banks witnessed a wholesale run on their U.S. dollar liabilities, which was particularly disruptive in the early phase of the crisis (as evidenced by high demand for U.S. dollar funding from the Eurosystem via the U.S. dollar swap facility) and in the second half of 2011 (as evidenced by the data on the largest U.S. money market fund exposures). These funding shocks led to the reduction of external U.S. dollar assets. Second, euro area banks' substantial reduction of debt issued suggests that, in aggregate, euro area banks are not funding constrained.

2 Deleveraging in Austria

At Austrian banks, the contribution of the reduction of total assets to deleveraging (27%) has been higher than at their euro area peers (12%). In addition, Austrian banks have been key players in CESEE for more than 20 years, with

almost 70% of their total international exposure being located in the region.¹³ Hence, they have often been in the midst of the European deleveraging debate. The European Banking Coordination (“Vienna”) Initiative was founded because there were fears that foreign banks in CESEE in general, and Austrian banks in particular, would reduce their financing of the real economy in the region. In the following sections we study the priorities of deleveraging for Austrian banks (2.1.) and their impact on loans to the real economy in CESEE (2.2.).

2.1 Austria: Small Balance Sheet Decline Relative to Precrisis Growth

The structure of the aggregate balance sheet of Austrian banks at the unconsolidated level largely resembles the one of euro area banks, although lending to the nonfinancial private sector in Austria is substantially higher, accounting for one-third of total assets.¹⁴ Interbank loans are the second largest asset category, accounting for 20% of total assets, followed by external assets with a share of 17% in total assets in February 2014.

In the precrisis period, these asset categories were the main drivers of Austrian banks’ balance sheet growth, which increased by 85% from mid-2003 to its peak at the beginning of the financial crisis in October 2008. In particular, interbank lending was a major driver, accounting for one-third of precrisis balance sheet growth, followed by external assets (26%) and loans to households and nonfinancial corporations (22%), as shown in chart 4 (upper panel). Government securities and loans as well as money market

fund shares and fixed assets hardly contributed to the increase in total assets to about EUR 1 trillion in October 2008.

In the postcrisis period, the aggregate balance sheet dropped to EUR 922 billion (about –8%) until February 2014, which corresponds to the precrisis level of the first quarter of 2008.

Which asset categories contributed to the decline of total assets? To find out, we focus again on the relative contributions of various asset classes to the net reduction of total assets (chart 4, upper panel). As some asset classes have been expanding since the onset of the crisis, while others have been shrinking, the gross contributions add up to –100%:

- The reduction of interbank loans contributed –68% (–EUR 94 billion) to the reduction of total assets.
- External assets accounted for the second highest contribution (–45%, –EUR 63 billion).
- Securities of MFIs added –15% (–EUR 21 billion) and remaining assets –3% (–EUR 4.5 billion).
- These negative contributions were partly offset by funding for governments (+14%, +EUR 19 billion) and shares and other equity (+4%, +EUR 6 billion).
- Also, the contribution of credit exposure to the real economy, which includes bonds of non-MFIs (–0.9%, –EUR 1.2 billion) and loans to households as well as loans to the real economy (+10%, +EUR 20 billion), was positive at 9.1%.

The relative contributions of various liability categories to the reduction of total liabilities are also depicted in chart 4 (lower panel):

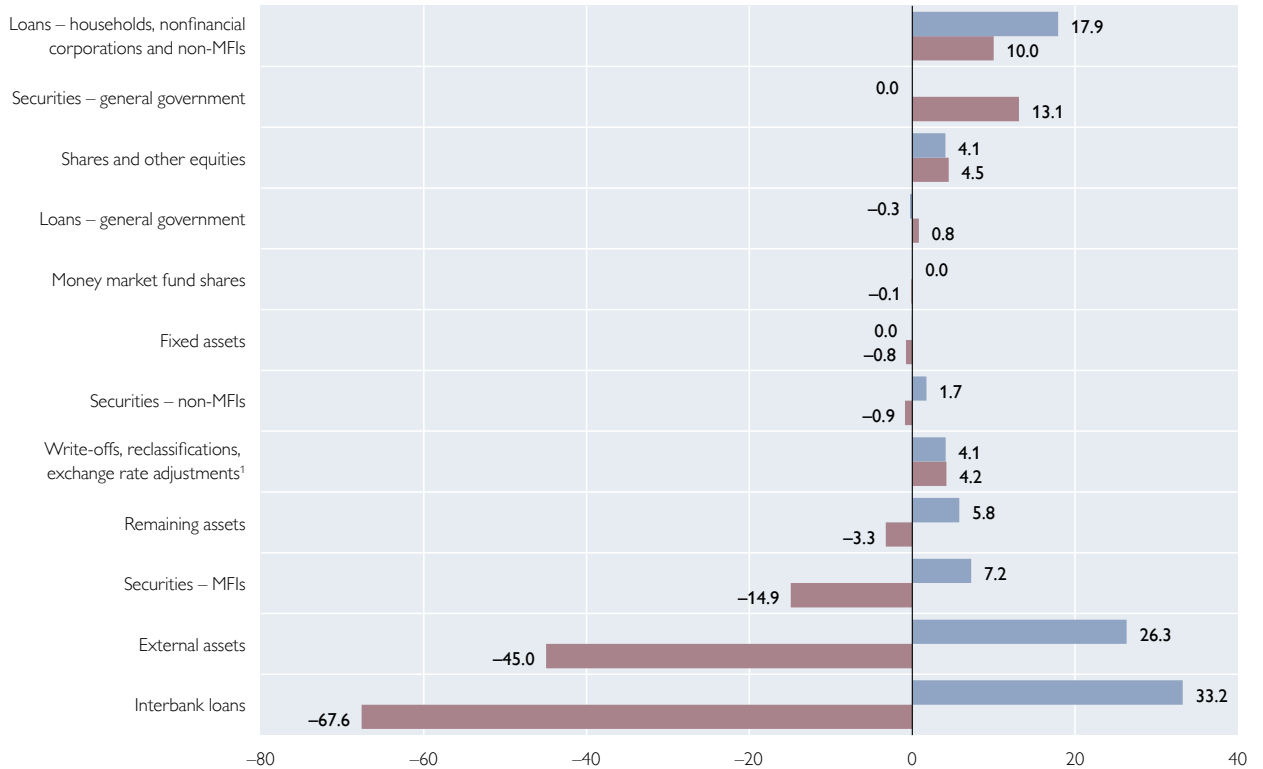
¹³ In absolute terms, the exposure of Austrian banks to CESEE amounted to about EUR 202 billion at end-2013.

¹⁴ When not only loans to non-MFIs but also loans to the general government as well as securities of non-MFIs and the general government are taken into account, the share rises to 42% of total assets.

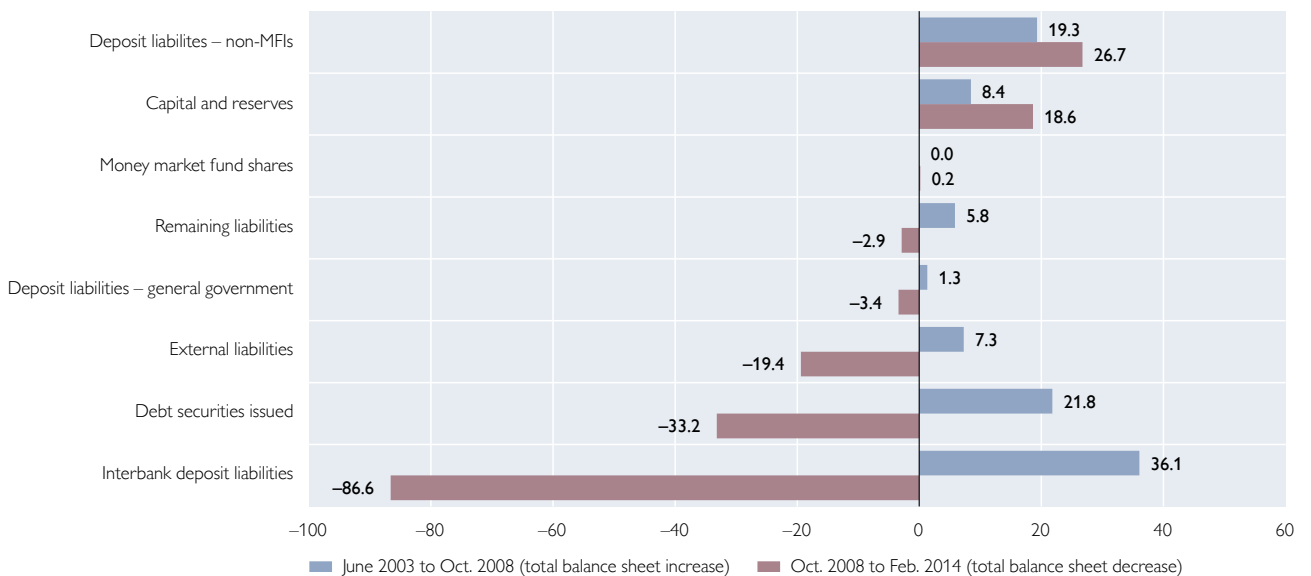
Chart 4

Austrian Banks: Contribution of Asset and Liability Categories to Changes in the Balance Sheet before and after October 2008

% of total balance sheet increase/decrease



% of total balance sheet increase/decrease



Source: ECB, OeNB and authors' calculations.

Note: For example, interbank loans accounted for one-third of total balance sheet growth in the precrisis period (June 2003 to October 2008). After October 2008, two-thirds of the balance sheet decline were caused by declining interbank lending. The contributions of asset categories to the change of the total balance sheet shown in the chart add up to 100%.

¹ Adjustment to loans non-MFIs.

- The largest contribution to the reduction of total liabilities stemmed from interbank deposits (–87%, –EUR 121 billion).
- Debt securities issued constituted the second largest contribution (–33%, –EUR 46 billion).
- External liabilities accounted for –19% (–EUR 27 billion), general government deposits accounted for –3.4% (–EUR 5 billion) and remaining liabilities for –3% (–EUR 4 billion).
- Money market mutual funds remained neutral (± 0 %).
- Deposit liabilities of non-MFIs and capital added +27% (+EUR 37 billion) and +19% (+EUR 26 billion), respectively.

The priorities of deleveraging in Austria are very similar to those in the euro area: Capital increases rank highest, followed by decreases in interbank loans and external assets. Banks' exposure shifted toward funding for governments and the real economy, which actually increased. The latter (bank loans plus holdings of nonfinancial corporations' bonds) has increased by 9.1% since October 2008.

2.2 CESEE: Shift in the Funding Structure Supports Sustainable Lending

At the beginning of the financial and economic crisis in 2008, concerns about widespread deleveraging in the CESEE region¹⁵ emerged. There were fears that

Austrian banks' exposure to CESEE would feature prominently in the priorities of deleveraging. In section 2.1 we find that external assets have indeed contributed substantially to the reduction of total assets. In line with developments in the euro area and in Austria, Austrian banks' subsidiaries operating in CESEE increased their leverage ratio at the aggregated sub-consolidated level from 9.5% at the end of 2008 to 12.4% at end-2013.¹⁶ Two questions arise: (1) Have Austrian banks reduced funding for their CESEE subsidiaries? (2) What are the priorities of deleveraging of Austrian banks' subsidiaries in CESEE?

To answer these questions, we first investigate Austrian parent banks' exposure vis-à-vis their CESEE subsidiaries based on the locational statistics provided by the BIS.¹⁷ These data point to a decline of aggregate cross-border capital flows from Austrian banks¹⁸ to CESEE by about 25% from end-2008 to end-2013. On the one hand, this was due to the supervisory measures to limit the risk arising from foreign currency loans.¹⁹ The foreign currency loan business model had been based on parent banks' market access to foreign currency funding (predominantly in euro, Swiss francs and U.S. dollars). The Austrian parent would channel the funds to CESEE subsidiaries to refinance local foreign currency loans, which at the end of 2008 amounted to more than

¹⁵ FMA (2010).

¹⁶ Source: Reporting data of Austrian banks. The data are adjusted for the sale of UniCredit Bank Austria's operations in Kazakhstan and Erste Bank's subsidiary in Ukraine as well as the purchase of Polbank by Raiffeisen Bank International in April 2012 (equal to total assets of EUR 6 billion). The change in ownership from ÖVAG to Sberbank is included in the data as Sberbank continues to report the subsidiaries' data because the CESEE headquarters is located in Austria.

¹⁷ We subsume 28 countries under the acronym CESEE, including the country groups CIS, Southeastern Europe and the Central and Eastern European countries that joined the EU in 2004 and 2007, respectively.

¹⁸ The locational BIS statistics measure aggregate international claims and liabilities vis-à-vis nonresidents of banks' offices located in Austria at the unconsolidated level.

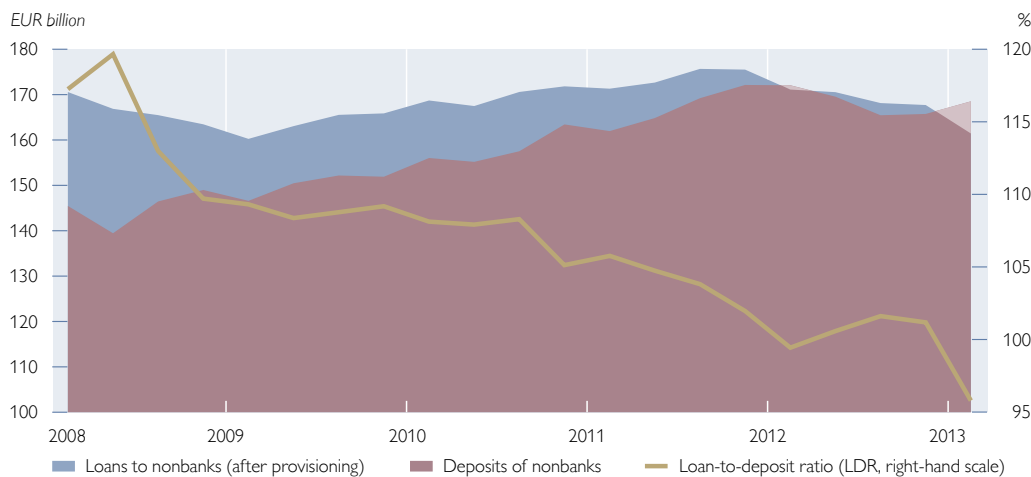
¹⁹ See, inter alia, FMA (2010) and ESRB (2011).

51% of the stock of total lending to the private sector in CESEE. In the course of the crisis, many CESEE currencies depreciated and foreign currency loan obligations and debt servicing costs increased. In addition, supervisory authorities in Austria and CESEE introduced measures to restrict further foreign currency lending. From end-2008 to end-2013, foreign currency loans in CESEE declined by about 16% (adjusted for foreign currency effects) to about EUR 74 billion.²⁰ As a consequence, cross-border liquidity provision by Austrian parent banks required to fund these loans dropped as well. Liquidity transfers from Austrian parent banks to CESEE subsidiaries declined by EUR 12 billion (34%) from end-2008 to end-2013 according to the Austrian central credit register. At the same time, the

funding structure of Austrian banks' CESEE subsidiaries shifted toward local funding. Chart 5 shows that deposits of nonbanks at Austrian subsidiaries in CESEE increased by about 16% from end-2008 to end-2013. This rebalancing constituted an explicit objective of the Austrian "sustainability package"²¹ aimed at improving the funding mix of "exposed" subsidiaries (with loan-to-local stable funding ratios (LLSFR) of more than 110%) and at increasing their capital buffers.²² Chart 5 also displays the decline of the loan-to-deposit ratio (LDR) of Austrian banks in CESEE from the beginning of 2009 to end-2013 in line with the policy objective. On the other hand, the reduction of cross-border liquidity transfers to CESEE subsidiaries also reflects a reduction of current account

Chart 5

Loans, Deposits and Loan-to-Deposit Ratio of Austrian Banks' Subsidiaries in CESEE



Source: OeNB.

Note: The data shown in this chart include all Austrian banks' subsidiaries.

²⁰ The reported figure is based on the additional data request, a biannual survey among Austrian banks on their operations in CESEE.

²¹ The Austrian "sustainability package" is a set of measures implemented by the OeNB and the FMA. For details, see FMA and OeNB (2012).

²² The latest available results of the sustainability monitoring are described in the Reports section of this Financial Stability Report.

deficits of CESEE countries²³ in the course of the crisis. Before the crisis, these current account deficits had been funded to a large extent via short-term interbank funding. In the postcrisis period, they declined substantially – by about EUR 8 billion – from end-2008 to –0.6 billion at end-2013.

Second, we study changes in the composition of the balance sheets of Austrian banks' subsidiaries. Again, we focus on lending to the real economy. In a first step, we observe that the leverage ratio (capital to total assets) increased from 9.5% to 12.4% (end-2008 to end-2013). The increase has almost entirely been driven by the rise in capital, contributing 99% to the change in the ratio. Although the reduction of total assets has played a minor role, we investigate its main drivers.

Overall, the size of the aggregate balance sheet of Austrian banks' subsidiaries in CESEE at the sub-consolidated level has decreased by about 2.6% since October 2008. However, these figures also include asset disposals, which were substantial in the region.²⁴ Accounting for these asset disposals allows to uncover organic changes and shows that the aggregate balance sheet at the sub-consolidated level decreased by 0.3% (EUR 0.8 billion) from end-2008

to end-2013.²⁵ The major categories in total assets are loans to the real economy (60% of total assets), followed by debt securities to nonfinancial corporations, non-MFIs and MFIs (18%) at end-2013. Again, we focus on the relative contributions of the major asset classes to the net decrease in total assets. As some asset classes have been expanding since the onset of the crisis, while others have been shrinking, the gross contributions add up to –100%:²⁶

- The reduction of interbank loans (–542% or –EUR 4.2 billion) and cash and cash reserves with central banks (–533%, –EUR 4.1 billion) contributed most to the reduction of total assets. Also, the contribution of the loan exposure to the real economy (households, nonfinancial corporations and non-MFIs) was negative (–432%, –EUR 3.3 billion). This decline was driven by financing for non-MFIs, which decreased by –14% (–EUR 4.2 billion). By contrast, loans to households and nonfinancial corporations increased slightly by 1% (+EUR 0.8 billion). Taking into account foreign currency effects, lending to households and nonfinancial corporations even increased by 5% from end-2008 to end-2013.²⁷

²³ The current account data are based on the following sample of CESEE countries where Austrian banks are active: CESEE EU Member States (Czech Republic, Slovakia, Slovenia, Croatia, Hungary, Poland, Bulgaria and Romania) as well as the following Southeastern European countries: Albania, Bosnia and Herzegovina, Montenegro, former Yugoslav Republic of Macedonia, Serbia and Kosovo.

²⁴ These asset disposals include the sale of most of ÖVAG's CESEE subsidiaries in 2011 (equal to total assets of about EUR 9.4 billion), the sale of UniCredit Bank Austria's operations in Kazakhstan (total assets of about EUR 5 billion) at end-2012, and the sale of Erste Bank's subsidiary in Ukraine (total assets of about EUR 600 million) in April 2013.

²⁵ The data are adjusted for the sale of UniCredit Bank Austria's operations in Kazakhstan and Erste Bank's subsidiary in Ukraine as well as the purchase of Polbank by Raiffeisen Bank International in April 2012 (equal to total assets of EUR 6 billion). The change in ownership from ÖVAG to Sberbank is included in the data as Sberbank continues to report the subsidiaries' data because the CESEE headquarters is located in Austria.

²⁶ The following list includes a selection of the most important asset categories in terms of their contribution to the change in the total balance sheet. As the change in the total balance sheet is relatively small, the contributions of the respective balance sheet positions are relatively big in terms of percentages.

²⁷ The reported figure is based on the additional data request, a biannual survey among Austrian banks on their operations in CESEE and is adjusted as outlined in footnote 25.

- These negative contributions were mostly offset by holdings of securities of nonfinancial corporations, non-MFIs and MFIs, which contributed most to the balance sheet increase (+2,000%, +EUR 15.4 billion).
- Also the sovereign exposure via loans to the central government and public debt instruments added +308% (+EUR 2.4 billion).

These priorities of deleveraging refute common claims of decreasing funding for the real economy: Lending to the real economy has remained broadly stable when adjusted for loan loss provisioning. The decline in loans to non-banks shown in chart 5 has been mainly driven by loans to non-MFIs as well as the surge in loan loss provisioning (+190%) and foreign currency effects.

Yet, Austrian banks have reduced their total exposure (adjusted for foreign currency effects) to some countries – in particular, to Hungary (–31%), Ukraine (–32%) and Slovenia (–19%) – during the past five years. These strategic portfolio adjustments show that credit demand and economic conditions differ across CESEE and that Austrian banks have somewhat shifted their regional focus; but overall, their funding for households and nonfinancial corporations in CESEE has remained broadly stable.

3 Interpretation of Our Findings from a Macroprudential Perspective

The dominant role of capital increases in the priorities of deleveraging in the euro area, in Austria and at CESEE subsidiaries of Austrian banks is very welcome from a macroprudential perspective. Also, the composition of the relatively small contribution of the

reduction of total asset/liabilities can be considered positive.

The reduction of banks' reliance on short-term unsecured interbank funding for long-term illiquid assets in the euro area, in Austria and in CESEE is in line with macroprudential objectives.

First, it contributes to a reduction of interconnectivity and, consequently, a decrease in potential contagion and the propagation of shocks within the banking systems of the euro area, Austria and CESEE.

Second, before the crisis, excessive loan growth in some euro area and CESEE countries had been funded by short-term unsecured interbank deposits. This had led to excessive maturity transformation. Macroprudential supervision aims at preventing both developments. The shift of the funding mix from interbank loans toward deposits contributes to financial stability.²⁸

Third, the decline in interbank flows reflects macroeconomic rebalancing in the euro area and in CESEE. Countries that have experienced liquidity shocks after 2008 are those that had relied substantially on short-term interbank funding of their significant current account deficits before 2008 (Constâncio, 2014). These countries have reduced their current account deficits. Consequently, the corresponding inflows to fund these deficits have dropped as well. From a macroprudential perspective, the reduction of balance of payment deficits which had been funded by short-term interbank capital inflows supports financial stability in the euro area and in CESEE.

Fourth, when the EONIA is very low, interbank deposits are not profitable for lenders.²⁹ Since mid-2012, mar-

²⁸ For a discussion of the impact of microprudential regulation on the unsecured interbank market, see Schmitz (2012).

²⁹ For details, see Schmitz (2013).

ket rates have been so low that they merely cover the cost of providing interbank funding. The latter includes counterparty credit risk costs, idiosyncratic liquidity risk costs and capital costs. Holding excess liquidity in the Eurosystem's deposit facility does not carry any of these risks. With the spread between EONIA and the deposit facility rate declining, lending in the interbank market became increasingly unattractive. From a macroprudential perspective, banks should not be pressured to invest in assets that yield a negative return after credit and liquidity risk charges and cost of capital.

Assessing the prominent role of external assets in the priorities of deleveraging is less straightforward from a macroprudential perspective. In the euro area, the decrease in external assets reflects a more difficult U.S. dollar funding environment. From a macroprudential perspective, it is exposure for which funding diminishes or becomes more fragile that should be reduced. In addition, external assets in many cases do not constitute core assets of euro area banks. These assets are more likely to be subject to a negative selection bias. Borrowers who are denied credit by their local banks, say, in Asia, turn to foreign banks. From a macroprudential perspective, the reduction in such assets is not a concern. Finally, the reduction in external assets was due to sales of foreign subsidiaries, loan portfolios and write-downs (including subprime related asset-backed securities). Macroprudential supervision supports balance sheet repair.³⁰

The decrease in short-term intra-group funding of CESEE subsidiaries by Austrian banks was predominantly due to three drivers: (1) the reduction

in foreign currency loans in CESEE (a consequence of measures taken by Austrian and CESEE supervisory authorities to limit the risk arising from foreign currency loans), (2) the improvement of the funding mix of CESEE subsidiaries toward local deposits and (3) the improvement of current account balances in the region. From a macroprudential perspective, all three developments are, in principle, welcome.

We find that despite reductions in total assets in the euro area and in Austria, bank funding for the real economy has increased. Nevertheless, calls for policies that incentivize banks to increase loans feature prominently on the agenda of politicians and economic commentators. From a macroprudential perspective, however, high loan growth at interest rates that do not cover credit, liquidity and systemic risk costs is not a sustainable policy objective. It leads to the misallocation of capital and risk in the economy. Both are disruptive to financial stability and sustainable economic growth.

4 Conclusions

Analyzing euro area and Austrian MFI data and Austrian reporting data, we find that postcrisis deleveraging was significant in the euro area, in Austria and in CESEE. Capital increases ranked highest in the priorities of deleveraging, followed by reductions of interbank and external assets. At euro area banks, capital increases contributed 88% to deleveraging, at Austrian banks this share was 73% and at Austrian banks' CESEE subsidiaries it was 99%. The small reductions in total assets were driven by interbank and external assets. The asset mixes of euro area banks, Austrian banks and their CESEE subsidiaries shifted toward funding for

³⁰ See, *inter alia*, ECB (2014) and IMF (2014).

governments and the real economy. Banks have also rebalanced their liability compositions from interbank and external liabilities to more stable funding sources, such as capital and deposits by non-MFIs. Our assessment of these developments from a macroprudential perspective is, in general, positive.

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