

Corporate and household sectors in Austria: financing conditions remain favorable

Nonfinancial corporations: financing volumes rebound slightly

Corporate profits recover further

Economic growth in Austria in the first half of 2016 was driven by domestic demand, while net exports dampened growth. Investment contributed positively to growth, driven by both equipment and construction investment. Domestic demand benefited from two special factors: the tax reform and expenditures for refugees. Strong employment growth and low inflation were additional factors supporting private consumption.

Reflecting the slight upturn in economic growth, the gross operating surplus of nonfinancial corporations continued to recover, posting a year-on-year increase of 0.9% in real terms in the second quarter of 2016 (see chart 6). In nominal terms, the gross operating surplus was up 2.6% year on year. On top of the support provided by economic activity, the cost side of firms was contained by moderate wage growth as well as low oil and other commodity prices. Over the past two

years, gross operating surplus moved in line with gross value added so that profitability (as measured by gross operating surplus divided by gross value added), which had been on a downward trend between the onset of the crisis and 2014, stabilized. In the second quarter of 2016, the gross profit ratio amounted to 41.3%, unchanged compared to end-2015. But despite this stabilization, the profit ratio is still well below pre-crisis levels. Moreover, the low interest rate environment has reduced the interest rate burden of indebted nonfinancial corporations (see below). Overall, increased profitability has augmented the internal financing potential of the corporate sector.

External financing of nonfinancial corporations rebounds

The recovery of investment in machinery and equipment increased corporate demand for external financing. Nonfinancial corporations' recourse to external financing picked up somewhat in the first half of 2016 and, at EUR 7.9 billion, was up 12.7% compared to the value of the first half of last year. Despite this upturn, financing volumes still remained well below pre-crisis figures, reflecting ample liquidity on the asset side of firms' balance sheets.

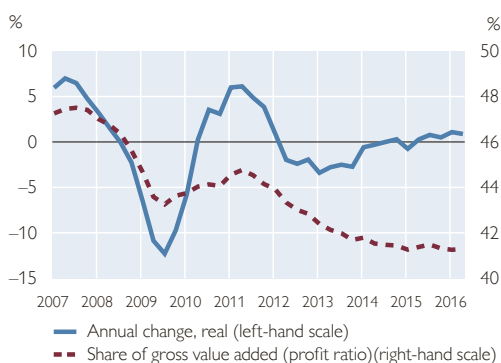
Equity and debt contributed to total external financing in roughly equal measure in the first half of 2016 (see chart 7). Their dynamics, however, differed. At EUR 3.8 billion, equity financing (issuance of both quoted and unquoted shares) was about 15% lower than in the first half of 2015. The net issuance of listed shares, which slumped to a mere EUR 8 million, accounted for this slowdown. In 2016 so far, there has been no new listing on the Vienna stock exchange. Thus, virtually all equity

Economy recovers after four years of weak growth

Equity accounts for close to half of external financing

Chart 6

Gross operating surplus of nonfinancial corporations¹

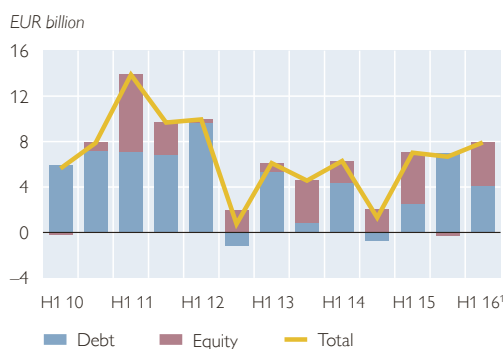


Source: Statistics Austria.

¹ Moving four-quarter sums.

Chart 7

External financing of nonfinancial corporations



Source: OeNB.

¹ Preliminary data.

financing came from other equity instruments (mainly sales to foreign strategic investors). The equity share in total outstanding liabilities fell slightly to 46.6%.

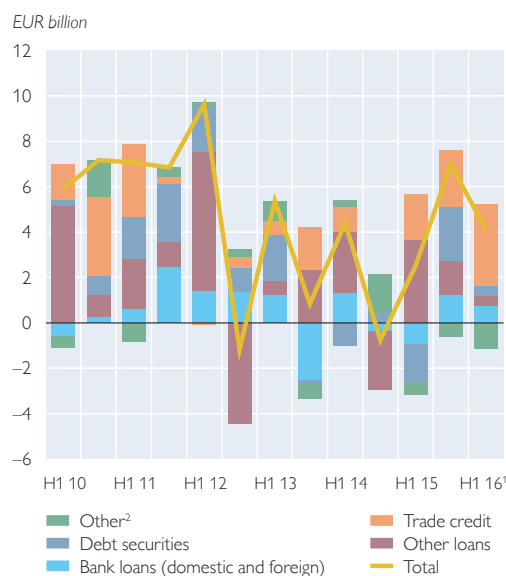
Debt financing starts to recover

Compared to the first six months of 2015, debt financing rose by almost two-thirds (62.3%) to EUR 4.1 billion. However, this increase fell short of the semiannual values recorded before 2014 (see chart 8).

Other nonfinancial corporations (both domestic and foreign) were again the primary source of debt financing of the Austrian corporate sector in the first half of 2016. Mostly, this financing took the form of trade credit, which accounted for more than three-quarters of total debt financing – despite the fact that this form of finance is comparatively more expensive in a low interest rate environment. One reason for the large share of trade credit might be that as a key element of firms' working capital, trade credit develops broadly in line with the business cycle. Partly

Chart 8

Debt financing of nonfinancial corporations



Source: OeNB.

¹ Preliminary data.² Pension entitlements and other accounts payable.

because of the large recourse to trade credit, debt financing was primarily short-term (with a maturity of less than one year). Loans from other enterprises, which mostly reflect transactions within corporate groups, played a minor role in the first six months of 2016.

Bank loans contributed more than one-third to debt financing in the first half of 2016, and more than one-third of these loans were from foreign banks.¹ However, a significant part of the loans from foreign banks can be attributed to a limited number of very large transactions. In terms of outstanding amounts, loans from foreign banks contributed little more than 10% to total bank lending to the corporate sector at mid-2016.

¹ Not adjusted for reclassifications, valuation changes and exchange rate effects.

Overall, lending by Austrian banks to domestic nonfinancial corporations remained muted. In September 2016, the annual growth rate (adjusted for reclassifications, valuation changes and exchange rate effects) amounted to 0.5% in nominal terms (see left-hand panel of chart 9).² However, loan dynamics diverged considerably by maturity. Loans with medium-term and longer maturities (over one year), which are most relevant for business fixed investment, continued to expand, growing by 2.9% annually in September 2016, while short-term loans (with maturities of up to one year), which have been substituted in recent years by other forms of short-term funding, decreased from early 2015.

In the first three quarters of 2016, Austrian banks continued their cautious lending policies and tightened their credit standards for loans to enterprises somewhat, according to the euro area bank lending survey (BLS; see right-hand panel of chart 9). Credit policies did not differ much by maturities. Respondent banks attributed their tighter standards primarily to reduced risk tol-

erance. Moreover, they indicated costs related to their capital position and risk related to the collateral demanded. In contrast, other factors reflecting banks' risk perception, such as their assessment of the general economic situation and of borrowers' creditworthiness, which had been named frequently in the past, played a minor role in recent survey rounds. Thus, especially firms with poor credit ratings and higher insolvency probabilities may have experienced increased difficulties in obtaining a bank loan.

At the same time, loan demand by enterprises remained weak, reflecting the current cyclical environment, although in the second and the third quarters of 2016, the banks surveyed in the BLS reported a slight pickup in corporate loan demand after a prolonged period of falling demand. Banks named merger and acquisition activities as well as debt restructuring and renegotiations as the main factors behind this slight uptick, while internal financing and funding requirements for fixed investment dampened loan demand.

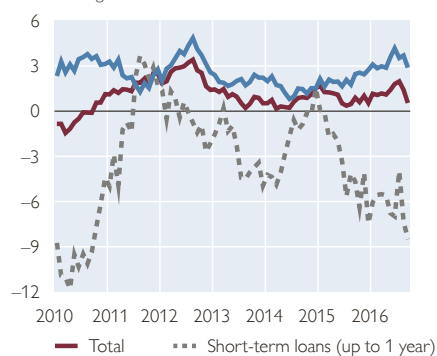
Longer-term bank loans grow briskly

Chart 9

MFI loans to nonfinancial corporations

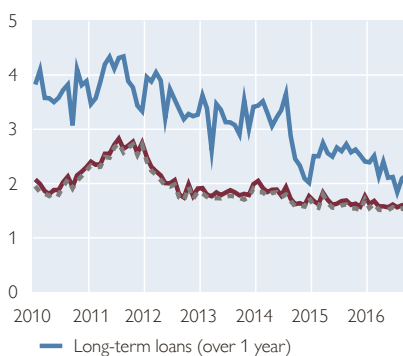
Volumes

Annual change in %



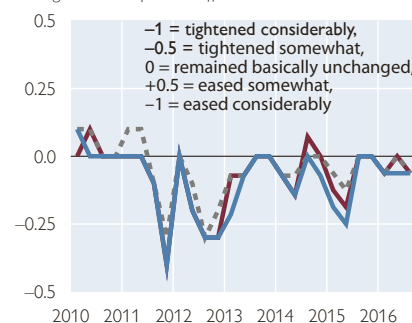
Interest rates

%



Credit standards

Change over last quarter, diffusion index



Source: OeNB.

² At the cutoff date, financial accounts data were available up to the second quarter of 2016. More recent developments of financing flows are discussed on the basis of data from the MFI balance sheet statistics and the securities issues statistics.

Growing liquidity buffers

Moreover, firms continued to have at their disposal substantial liquidity. Short-term funding of nonfinancial corporations, defined as trade credit and short-term loans (both from banks and other sources, mainly intercompany loans), rose by 5.3% year on year in the second quarter of 2016 (see chart 10, left-hand panel). The structure of the outstanding short-term funds has changed, however. The share of short-term bank loans decreased (by about 5 percentage points from end-2014 to one-third) in favor of trade credit, whose share rose (by roughly 5 percentage points to one-half). Yet, this decreased recourse to short-term bank loans does not necessarily signify impaired access to bank financing, as the development of credit lines extended to nonfinancial corporations suggests. According to the OeNB's statistics on new lending business, the total amount of undrawn credit lines available to enterprises rose by EUR 10 billion or 60% from end-2010 to mid-2016, much more strongly than the overall volume of credit lines. This implies a significant increase in unutilized liquidity that enterprises could draw if

necessary (see middle panel of chart 10). Additionally, firms' overnight deposits continued to rise in 2016 (+13.6% year on year in September 2016). While these liquidity buffers may reflect both precautionary motives and a lack of investment opportunities, at least in the current environment of weak demand for loans, they suggest that the more restrictive policies of Austrian banks probably did not constitute a binding constraint for financing the Austrian enterprise sector.

Bank lending rates have supported lending to the corporate sector in 2016 so far. Between end-2015 and September 2016, interest rates on new loans to nonfinancial corporations sank by 21 basis points (see middle panel of chart 9). The decrease was more marked for loans with an interest rate fixation period of more than five years (–31 basis points) than for shorter periods. In the first nine months of 2016, the spread between interest rates on loans of lesser amounts and larger loans, which – given the lack of other data – is commonly used as an indicator of the relative cost of financing for SMEs, averaged 38 basis points, one of

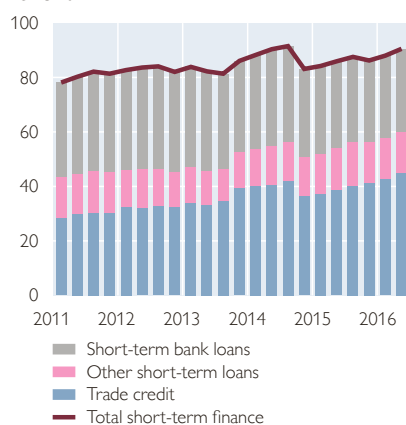
Further decline in interest rates for bank loans

Chart 10

Indicators of corporate liquidity

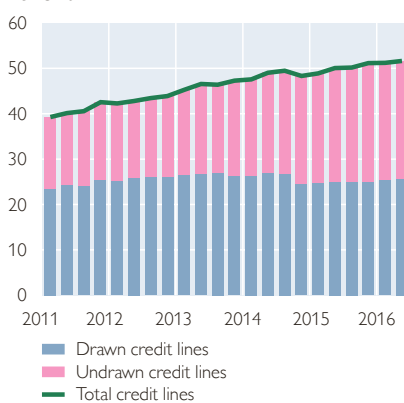
Short-term finance

EUR billion



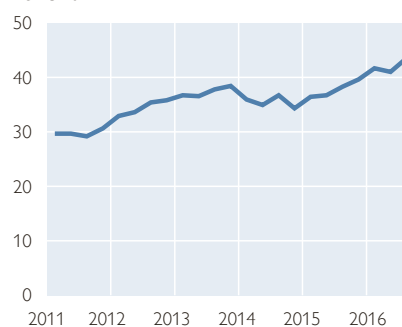
Credit lines

EUR billion



Overnight deposits

EUR billion



Source: ECB, OeNB.

the lowest levels recorded in the euro area.

Debt securities issuance increased slightly, most likely supported by low corporate bond yields. According to financial accounts data, corporate bond issuance amounted to EUR 0.4 billion in the first half of 2016, which accounted for more than 10% of total debt financing, after having dropped by EUR 1.6 billion in the first half of the preceding year.

Interest rate risk of the corporate sector remains elevated

Although the growth of corporate debt (measured in terms of total loans raised and bonds issued) rebounded slightly in the first half of 2016, running to 2.0% year on year in the second quarter, it remained below the nominal expansion rate of gross operating surplus. As a result, the debt-to-income ratio of the corporate sector decreased slightly, by about 2 percentage points, to 411% in by the second quarter of 2016 (see upper left-hand panel of chart 11). However, the debt-to-income ratio remained considerably above pre-crisis levels, implying that the increase in the corporate sector's vulnerability from 2007 to 2009 has not yet been reversed. Moreover, whereas the debt-to-income ratio is lower in Austria than in the euro area as a whole, the debt-to-equity ratio, which remained stable at 93.8% in the first half of 2016, is higher in Austria than in the euro area, reflecting the importance of debt financing in Austria.

The low interest rate environment continued to support firms' current debt-servicing capacity. In the first half of 2016, the proportion of gross operating surplus spent on interest payments for (domestic) bank loans continued to decline slightly, reaching 3.6% in the

second quarter of 2016. This reflected the still very high share of variable rate loans in new loans, which has come down only 5 percentage points to 89% over the past two years. While Austrian companies are therefore currently experiencing lower interest expenses than their euro area peers, they face a higher exposure to interest rate risk. A rebound of interest rates could become a burden, especially for highly indebted companies, even if rising debt-servicing costs may eventually be accompanied by increasing corporate earnings in the event of an economic recovery.

The corporate sector's exposure to foreign exchange risk continued to decrease, amounting to 3.4% in the third quarter of 2016. Since the second quarter of 2014, the share of outstanding foreign currency loans in Austria has been below the figure for the euro area as a whole.

Risk aspects of bonds compare favorably with those of bank loans. Both the share of floating rate issues, amounting to 14.5% in September 2016, and the foreign currency share, amounting to 2.6% of the outstanding volume of corporate bonds, were considerably below the respective values for bank loans.

Insolvencies are usually a lagging indicator of the business cycle. The insolvency ratio (the number of corporate insolvencies in relation to the number of existing companies), which had been on a downward trend over the past years, stabilized in the course of 2016 (based on a moving four-quarter sum to account for seasonality). This development may be attributed to the moderate increase in debt financing and the low interest rate level, which makes debt servicing easier even for highly indebted companies.

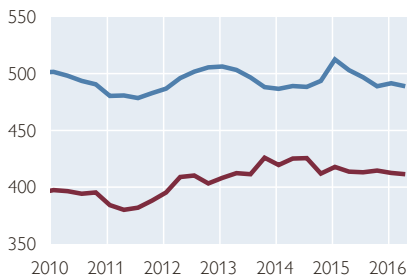
Slight increase in corporate bond issuance

Insolvencies bottom out

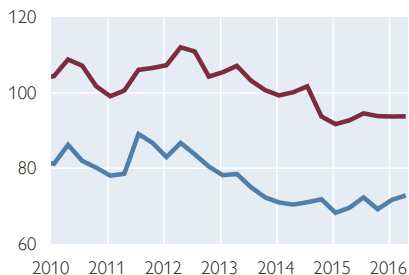
Share of variable rate loans remains high

Risk indicators for nonfinancial corporations**Debt**

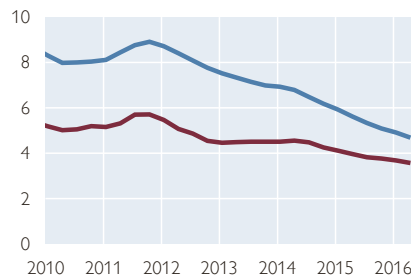
% of gross operating surplus

**Debt-to-equity ratio**

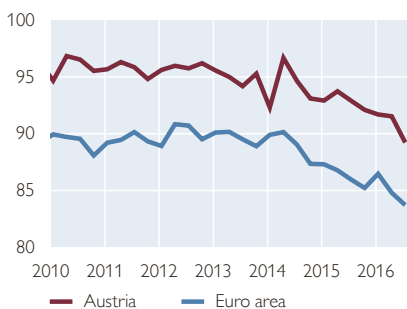
%

**Interest expenses¹**

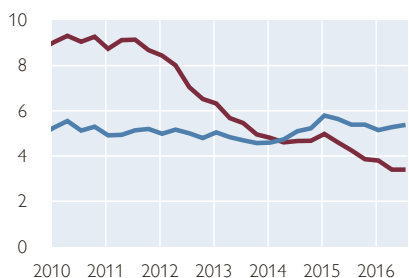
% of gross operating surplus

**Variable rate loans**

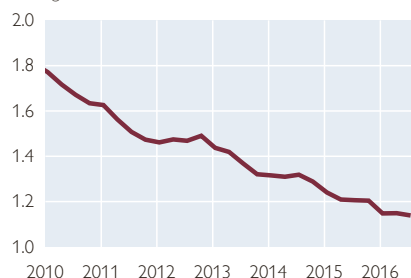
% of total new lending in EUR

**Foreign currency loans**

% of total loans

**Insolvencies**

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



Source: OeNB, ECB, Eurostat, KSV 1870.

¹ Euro area: euro loans only.**Household indebtedness remains comparatively low****Austrian households' savings rate increases in 2016****Tax reform boosts disposable household income**

Real disposable household income developed unfavorably in the past years. After two years with negative growth rates, real disposable household income expanded only moderately in 2015 (+0.3%). This acceleration was mainly driven by a decline in inflation, while the growth of nominal household income decelerated. In the first half of 2016, the tax reform contributed to faster nominal income growth. The 9.1% drop in direct taxes from households in the first half of 2016 contributed 0.3 percentage points to the 3.3% increase in nominal household income. A look at the components of disposable

income reveals that while the rise in the compensation of employees remained stable at 3.1%, the growth of net mixed income accelerated to 7.6%, whereas property income contracted by 1.0%.

The savings rate of the household sector was on a downward trend until 2014, when it bottomed out at 6.7%. In 2015, the savings rate increased to 7.1%. This increase was driven by the 0.3% growth of real disposable household income in conjunction with stagnating real private consumption. In the first half of 2016, the savings rate stood at 6.9%, representing an increase of 1 percentage point since the first half of 2015 and implying that households have saved part of the additional household income attributable to the tax reform.

Strong preference for liquid assets

Financial investments by households remained quite moderate in the first half of 2016 (see upper left-hand panel of chart 12). Whereas at EUR 4.6 billion, they reached more than twice the exceptionally low level of the first six months of 2015, they still amounted to less than half of the values seen before the onset of the crisis.

In the low nominal interest rate environment, households continued to display a strong preference for highly liquid assets and shifted almost EUR 6 billion into cash holdings and overnight deposits with domestic banks. This was more than total financial investments in the first half of 2016. In contrast, bank deposits with agreed maturity continued to decline, dropping by EUR 2 billion. Between end-2009 and mid-2016, households' overnight deposits increased by EUR 50 billion, while deposits with agreed maturity fell by EUR 25 billion. As a result, the share of overnight deposits in total financial assets has risen from 12.2% to 18.3% since 2009 while the share of deposits with agreed maturity has fallen from 28.3% to 19.1%.

Similarly, as households shunned investments with longer interest rate fixation periods, they continued to reduce their direct holdings of long-term debt securities, cutting them by EUR 1.4 billion in the first half of 2016. Since 2013, the portfolio of securities has been reduced by EUR 10.5 billion. Net investment in mutual funds halved to EUR 1.2 billion in the first half of 2016 (in roughly equal measure in domestic and foreign funds). At the same time, households invested EUR 0.6 billion in quoted stocks. In total, households' net financial investment in capital market instruments turned positive in the first six months of 2016, amounting to EUR

0.5 billion and thus contributing 11% to total financial investments. As a result of falling stock prices (especially in the first quarter of this year), the Austrian household sector, on aggregate, recorded unrealized valuation losses of EUR 1.3 billion on its securities portfolios in the first half of 2016. Quoted stocks accounted for the lion's share, with (unrealized) valuation losses amounting to 5.5% of year-end holdings of quoted stocks; in the case of mutual fund shares, the losses were 0.8% of the household portfolio. However, taking a longer view, (equally unrealized) valuation gains had contributed almost half of the overall increase of households' securities portfolio since 2010 (lower right-hand panel of chart 12). Looking at outstanding amounts, capital market investments accounted for 17.5% of total financial investments at mid-2016, half a percentage point down on the equivalent mid-2015 figure. Thus, there are few indications that households made up for low interest rates by investing in riskier assets.

Investment in life insurance and pension entitlements was again muted in the first half of 2016, amounting to EUR 0.3 billion. Based on outstanding amounts, the share of these investments contracted to 20.3% of total financial assets. This decrease was driven mainly by life insurance policies, where net investments were negative in the first two quarters of 2016, amounting to –EUR 0.4 billion. The reduction is all the more remarkable as a large proportion of gross inflows into these instruments were not an outcome of current investment decisions, but rather reflected past decisions – given the long maturities and commitment periods involved. Moreover, life insurance policies often serve as repayment vehicles for foreign currency bullet loans (even if these are converted into euro loans).

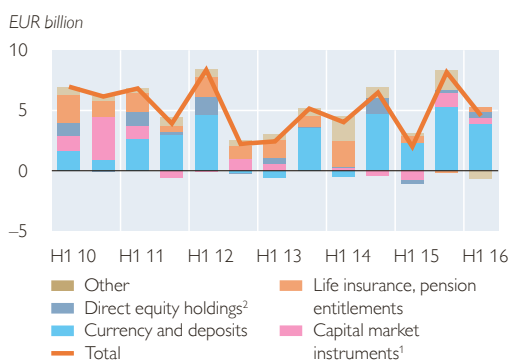
Slight rebound of financial investment

Net investments in life insurance policies negative in 2015

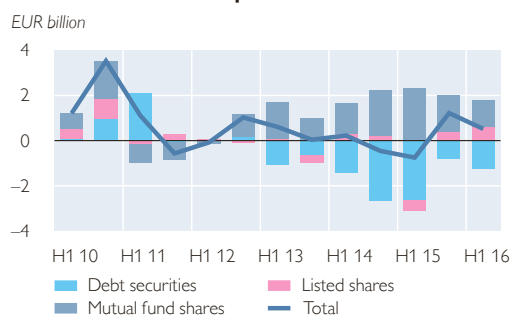
Net investment in mutual funds halved

Financial investments of households

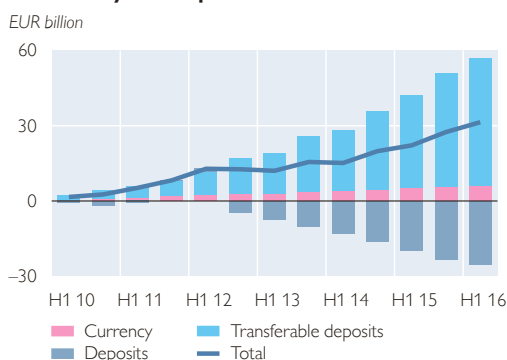
Structure of net financial investments



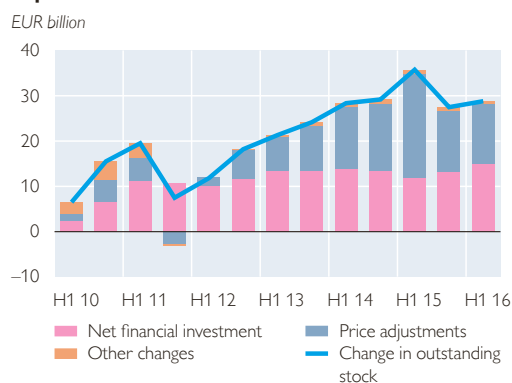
Net investments in capital market instruments



Cumulated net investment in currency and deposits



Cumulated change in stock of capital market instruments



Source: OeNB.

¹ Debt securities, mutual fund shares and listed shares.

² Unlisted shares and other equity.

By contrast, investments in pension entitlements (including both claims on pension funds and direct pension benefits granted by private employers) continued to expand, surpassing the equivalent figure of the first half of 2015 by 11%.

Residential property prices in Austria accelerate in the first half of 2016

Austrian residential property prices accelerated in the first half of 2016. In the second quarter, prices surged by 9.5% year on year in Austria. Prices increased especially in Austria excluding Vienna, augmenting by 12.8% in

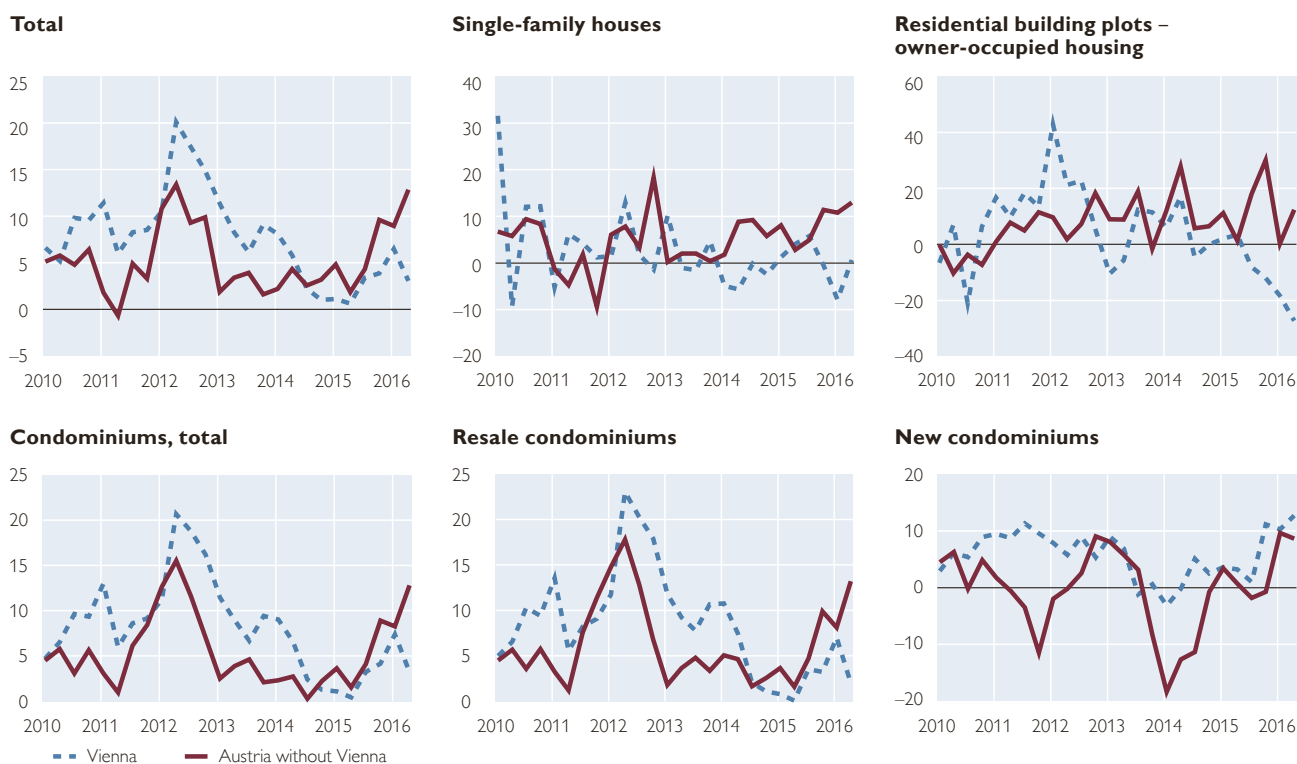
the second quarter of 2016. This gain is the second-highest since property price data became available in 2000 (in the second quarter of 2012, prices increased by 13.4%). By contrast, the rate of price increase subsided in Vienna, with prices advancing by 3.1% year on year (first quarter: +6.5%). Prices in the second quarter in fact went down by 2.4% on the first quarter.

Heterogeneous price developments are currently observable in Vienna. The rise in the price of resale condominiums – the key market segment in Vienna in terms of volume – weakened in the second quarter of 2016, declining to +2.0% on the previous

Property price growth accelerates in Austria excluding Vienna, loses pace in Vienna

Residential property prices by market segments

Annual change in %



Source: Vienna University of Technology, OeNB.

year. By contrast, the price growth of new condominiums continued to speed up, reaching the highest rate in ten years at +12.7%. Single-family house prices stagnated on the previous year (+0.6%). The prices of residential building plots, which, however, are not included in the overall index, declined significantly (–27.3%) over the previous year. However, it has to be taken into account that building plot price developments are based on a very small sample.

In Austria excluding Vienna, the surge in prices was observable in all market segments. The prices of single-family houses – a segment that is far more important in rural areas than in Vienna – mounted by 13.0%. Condominium prices went up by 12.8%. A

breakdown shows that prices of both new condominiums (+8.6%) and the significantly larger share of resale condominiums (+13.2%) soared.

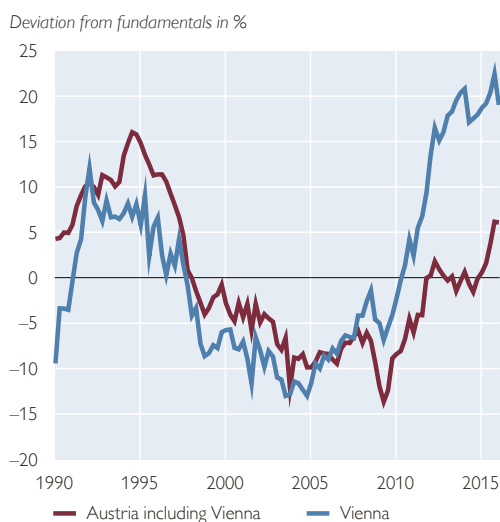
OeNB fundamentals indicator for residential property prices in Austria unchanged

For Austria as a whole, the OeNB fundamentals indicator for residential property prices ended the second quarter at 6.1%, nearly unchanged from the first quarter (6.2%). This signals that residential property prices in Austria are broadly in line with underlying fundamentals. However, a continued increase in the indicator could be considered a warning sign of a potential overheating of the Austrian residential property market.

Austria excluding Vienna: price increases gain strong momentum

Chart 14

OeNB fundamentals indicator for residential property prices



Source: OeNB.

Sharp rise in residential property transactions

The indicator for Vienna dropped by 3.4 percentage points in the second quarter of 2016 to reach 19.0%, which was largely attributable to the 2.4% drop in residential property prices from the first quarter.³

Residential construction gathers pace

Rising trend in residential housing investment

Housing loan growth driven by long-term loans

Austrian residential construction has picked up noticeably lately. A number of indicators support this observation. Real residential construction investment has displayed a rising trend since the second half of 2014. According to Statistics Austria, the number of building permits for dwelling units in new residential buildings advanced by 21% overall in the first quarter of 2016 and surged by 57% in Vienna. The housing construction output index published by Statistics Austria also showed a strongly rising trend. By increasing housing supply, rising residential construction

investment should help rein in price growth in the future.

The Austrian federal government decided in 2015 to launch a housing stimulus package with the aim of creating 30,000 new apartments between 2016 and 2020. Funding under the housing stimulus package will be managed by a newly established residential construction investment bank, which went into operation in September 2016.

The number of residential property transactions continued to rise in the first half of 2016. Data extracted by IMMOUnited from the land register and published by RE/MAX show that 59,452 residential property transactions with a value of EUR 13.1 billion were handled in this period. Thus, compared to the first half of 2015, the number of transactions increased by 10.1% and their value was lifted by 21.3%. This increase is partly attributable to the tax reform that entered into force in January 2016. The changes introduced by the tax reform on free-of-charge residential property transfers between family members sparked a sharp rise in such transactions. However, the bulk of these transactions were not recorded in the land register until the first quarter of 2016.

Growth in housing loans to households stabilizes

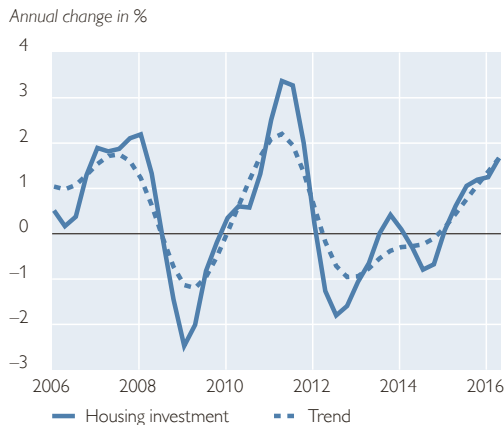
The growth of housing loans to households, which had accelerated in the second half of 2015, has stabilized in recent months. The nominal annual growth rate of loans for home purchase and improvement granted by Austrian banks (adjusted for reclassifications, valuation changes and exchange rate effects) edged up to 5.1% in September 2016. The expansion of housing loans

³ For more analyses and data on the Austrian real estate market, see <https://www.oenb.at/en/Monetary-Policy/real-estate-market-analysis.html>.

Chart 15

Residential construction activity in Austria

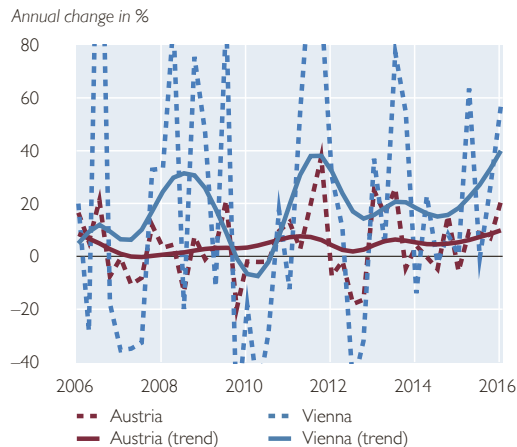
Housing investment¹



Source: WIFO.

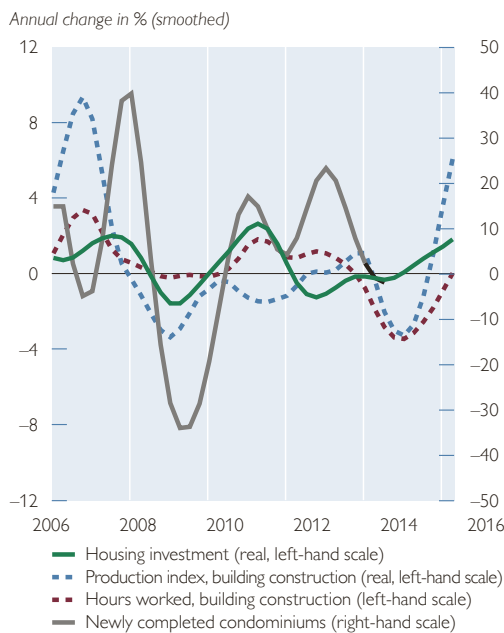
¹ Real prices; seasonally and working-day adjusted.

Building permits – number of dwellings in new buildings



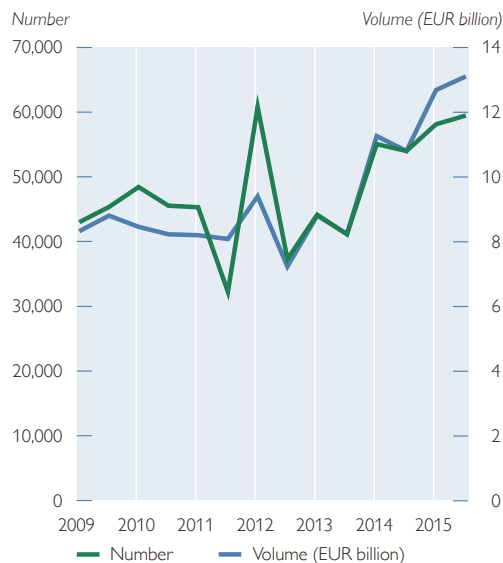
Source: Statistics Austria.

Residential construction in Austria



Source: Statistics Austria, WIFO, authors' calculations.

Residential property transactions in Austria



Source: RE/MAX, IMMOUnited.

was again fueled primarily by long-term loans (maturities of over 5 years), which augmented by 4.8% in the 12 months to September 2016. Whereas housing loans with maturities between 1 year and 5 years mounted even faster (+14.8%), they account for a small volume so that their contribution to overall housing loan growth is low.

Housing loans with the shortest maturity (up to 1 year) in fact contracted.

According to the results of the bank lending survey (BLS), banks' credit standards for housing loans to households were eased marginally in the third quarter of 2016, after they had been tightened somewhat in the second quarter. Overall, bank lending stan-

Financing conditions remain favorable

dards for housing loans have changed little over the past three years.

Credit terms remained favorable. The average interest rates on euro-denominated housing loans to households stood at 1.92% in September 2016, 21 basis points lower than one year earlier. The reduction of interest rates was more pronounced for borrowing with longer periods of interest rate fixation (5 years to 10 years: -0.54% ; over 10 years: -0.50%) than for variable rate loans (with a rate fixation period of up to 1 year), which sank by 14 basis points to 1.87%.

At the same time, the results of the BLS suggest that households' demand for loans edged up in the first two quarters of 2016 (and remained constant in the third). Since the first quarter of 2015 (when this factor was included in the BLS questionnaire), responding banks have attributed the upturn in demand for housing loans largely to the general level of interest rates. Housing market prospects, including expectations of rising house prices, are another factor that has consistently affected the increasing demand for housing.

Although the share of foreign currency loans in outstanding housing loans has contracted further in recent months, the remaining stock of such loans still carries a high exchange rate risk. In September 2016, the foreign currency loan share came to 18.0%. At the same time, the interest rate risk of new housing loans lessened.

Households' currency and interest rate risks

At mid-2016, the household sector's total liabilities amounted to EUR 176.4 billion according to financial accounts

data, up by 3.3% in nominal terms on the previous year's figure. More than 85% of the financial liabilities of Austria's households consist of loans from (domestic) banks. In September 2016, bank loans to households increased by 3.2% year on year in nominal terms (adjusted for reclassifications, valuation changes and exchange rate effects). While housing loans, which are the most important loan category for households, accounting for almost two-thirds of all their outstanding bank loans, continued to grow quite briskly, consumer loans shrank by 2.2% year on year and other loans, which had fallen for more than four years, grew by 0.9% year on year.

As loans expanded at a slower pace than household disposable income, household debt fell slightly, expressed as a percentage of net disposable income, by 0.8 percentage points to 90.5% during the first half of 2016 (see upper left-hand panel of chart 16). The reduction of the ratio of housing loans to disposable income by one-quarter of a percentage point to 63.9% at mid-2016 was less pronounced.

As a result, the debt ratio of households in Austria remained lower than that of households 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 about one-third (34%) of Austrian households have an outstanding loan. Thus, it is not the absolute level of Austrian households' indebtedness that is a potential concern, but rather the high shares of variable rate and foreign currency loans.

Share of foreign currency and variable rate loans in housing loans declines

Household indebtedness low despite slight increase

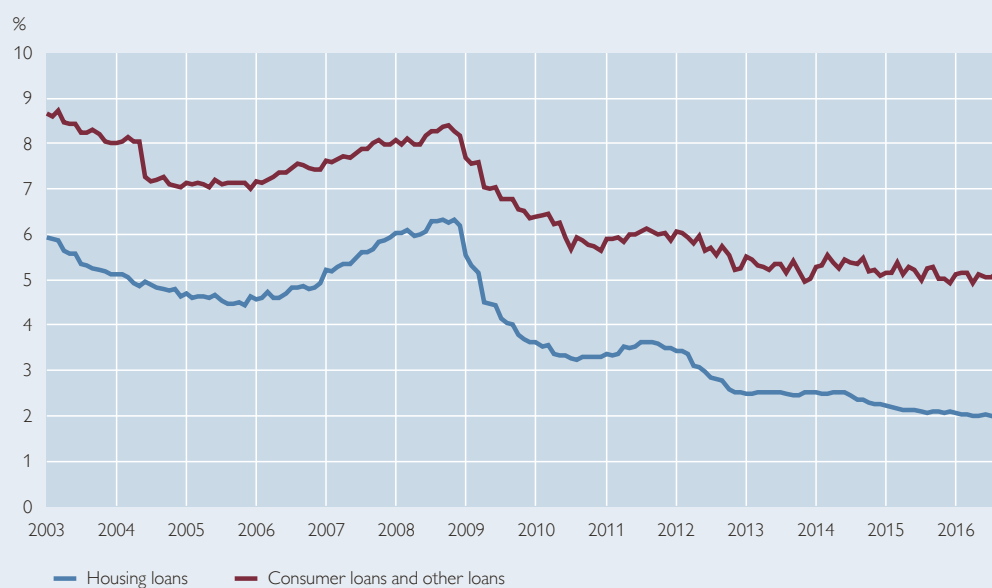
Box 1

The risk-bearing capacity of households with adjustable rate mortgages

Interest rates for loans to households have been on a steady decline in Austria in recent years (see chart 1). Loan interest rates started to fall after having peaked at the end of 2008, at 6.3% (housing loans) and at 8.4% (consumer loans), dropping to 1.9% (housing loans) and to 4.9% (consumer loans) in September 2016, which corresponds to a decline of 4.4 or 3.5 percentage points. This decline has benefited numerous domestic borrowers, because most borrowers have opted for adjustable rates. According to OeNB interest rate statistics, more than 60% of all new housing loans had an agreed maturity of up to 1 year at the end of the second quarter of 2016. While this share is somewhat smaller than the corresponding figure for total lending, it is significantly higher than the euro area equivalent, which stands at about one-quarter of total lending. In other words, while the decline in interest rates has brought down interest rate expenditure for households, a renewed increase of interest rates would instantly drive such expenditure back up again.

Chart 1

Interest rates for loans to households in Austria



Source: OeNB.

Note: Interest rates for loans to households with an agreed maturity of up to 1 year (outstanding amounts).

Risk indicators based on macro data fail to adequately reflect the risks to financial stability that may arise from the household sector. Data that have become newly available from the second wave of the Household Finance and Consumption Survey (HFCS) for Austria for 2014 show that adjustable rate mortgages are unequally distributed across households (see table 1):

- The share of households holding adjustable rate mortgages is higher among households whose reference person has an academic degree than among households whose reference person has a lower educational level.
- Up to the age of 64 years, the incidence of adjustable rate mortgages is negatively correlated with the age of the household's reference person.
- The share of households holding adjustable rate mortgages is disproportionately high in the top gross income quartile of households. This segment accounts for about two-thirds of the entire volume of outstanding adjustable rate mortgages.

- The outstanding amount of adjustable rate mortgages (with a mean of EUR 93,130 and a median of EUR 66,930) is higher than the outstanding amount of fixed rate mortgages (with a mean of EUR 73,457 and a median of EUR 40,166; not shown in the table).

Table 1

Households with adjustable rate mortgages

	2010			2014				
	Share of households with at least one adjustable rate mortgage (in %)	Outstanding amount of adjustable rate mortgages (in EUR) ¹		Distribution of adjustable rate mortgage debt (in %)	Share of households with at least one adjustable rate mortgage (in %)	Outstanding amount of adjustable rate mortgages (in EUR) ¹		Distribution of adjustable rate mortgage debt (in %)
		Mean	Median			Mean	Median	
All households with mortgages	70	80,910	43,089	100	53	93,130	66,930	100
Risk aversion (reference person)								
Yes	68	74,000	40,370	69	54	89,614	64,755	79
No	77	103,157	58,326	31	49	109,808	87,564	21
Highest education qualification (reference person)								
Compulsory education (not) completed	59	59,823	29,349	8	53	85,832	75,938	10
Apprenticeship or vocational school	70	74,820	34,995	50	53	75,080	53,243	38
High-school degree	72	105,400	82,737	18	49	106,959	85,465	24
Academic or technical college degree	76	91,713	58,200	24	58	123,160	96,386	28
Age (reference person)								
16–34	65	99,003	54,821	18	57	137,974	107,704	24
35–44	69	102,948	79,053	41	55	93,291	78,464	29
45–54	80	80,433	35,537	28	56	107,361	80,866	36
55–64	69	46,174	17,872	9	44	52,793	28,620	8
65+	60	34,402	26,249	4	50	29,492	19,200	3
Gross income quartiles								
1	40	92,608	37,341	4	.	.	.	.
2	64	48,328	28,404	10	45	62,929	49,579	9
3	73	76,694	40,314	28	45	90,051	83,808	22
4	75	94,344	54,013	58	59	109,291	81,981	65
Gross wealth quartiles								
1	.	.	.	.	.	.	.	.
2	54	24,951	6,720	1	.	.	.	.
3	64	68,162	39,437	33	53	72,733	59,529	35
4	77	93,362	51,086	66	53	114,282	86,012	63

Source: HFCS Austria 2010 and 2014, OeNB.

¹ Means and medians were calculated for all households that have taken out at least one adjustable mortgage.

Note: If for any household group there were fewer than 30 observations in any multiple imputation impute, the corresponding estimates were set to "."

Compared with the HFCS 2010 data, the share of households holding adjustable rate mortgages has gone down, from 70% to 53%. At the same time, the distribution of adjustable rate mortgage debt has remained broadly stable across household groups between the two survey waves, with the notable exception of the fact that borrowing has become more concentrated in the top income quartile. As a result, the risk resulting from fast interest rate increases is likely to be

concentrated in this segment, which a priori should also come with a higher risk-bearing capacity, though. However, to arrive at a more comprehensive view of the risk-bearing capacity of individual households, it is important to also factor in other aspects, such as expenses, debt or assets.

What follows are the (aggregated and disaggregated) results from stress tests which show how the risk-bearing capacity of Austrian households responds to interest rate increases. The results are based on data from the second (2014) wave of the HFCS for Austria. The simulated scenarios of the model discussed in Albacete et al. (2014)¹ have been updated in line with the latest interest rate developments.

Apart from the baseline scenario (no change of interest rates), we have simulated the following scenarios:

- Scenario 1: Interest rates for mortgages and uncollateralized loans increase by 1.4 percentage points (which corresponds to the decrease in (weighted) interest rates for housing and consumer loans between the peak in August 2011 and September 2016).
- Scenario 2: Interest rates for mortgages and uncollateralized loans increase by 2.9 percentage points (which corresponds to the decrease in (weighted) interest rates for housing and consumer loans between the average for the 2003–08 period and September 2016).
- Scenario 3: Interest rates for mortgages and uncollateralized loans increase by 3.9 percentage points (which corresponds to the decrease in (weighted) interest rates for housing and consumer loans between the highest measure in the time series (i.e. since 2003) and September 2016).²

The results from the stress tests are evident from table 2. They relate to three common risk indicators. The first indicator shows how the share of borrowers with a negative financial margin changes under the impact of the different stress scenarios. The financial margin of a household is defined as the household income minus basic living costs minus debt servicing costs. A negative margin implies that the household may find it difficult to repay outstanding debt. The larger the increase in interest rates, the higher the probability that a household may encounter repayment difficulties. As illustrated in table 2, 3.1% of households have a negative financial margin in the baseline scenario. In scenario 1 (interest rates increase by 1.4 percentage points), the share of vulnerable households climbs by 0.7 percentage points, to 3.8%. This compares with an increase by 1.6 percentage points to 4.7% in scenario 3 (interest rates increase by 3.9 percentage points).

Table 2

Stress test results

	Baseline	Interest rate increase by ...		
		1.4 percentage points	2.9 percentage points	3.9 percentage points
Households with a negative financial margin (in % of borrowers)	3.1	3.8	4.4	4.7
Debt held by such households (in % of total household debt)	7.0	9.0	10.2	10.4
Debt held by such households that cannot be offset by their total assets (in % of total household debt)	0.3	0.3	0.5	0.5
Debt held by such households that cannot be offset by their real assets (in % of total household debt)	0.4	0.4	0.6	0.6

Source: HFCS Austria 2014, OeNB and author's calculations.

¹ Albacete, N., J. Eidenberger, G. Krenn, P. Lindner and M. Sigmund (2014). Risk-Bearing Capacity of Households – Linking Micro-Level Data to the Macroprudential Toolkit. OeNB Financial Stability Report 27. 95–110.

² Scenario 3 reflects current supervisory policy, which requires banks to inform potential borrowers of adjustable rate loans with a leaflet indicating, among other things, how repayment may be affected by interest rate changes. Specifically, the leaflet must show the maximum repayment amount based on the “highest borrowing rate of the past 20 years.”

In order to be able to assess underlying risks to financial stability, the amount of household assets and the level of outstanding debt need to be taken into consideration as well. These aspects are captured by the other two risk indicators shown in table 2. By taking into account only the level of outstanding debt in a first step, the second risk indicator shows that in scenario 1 the 3.8% share of households with a negative financial margin accounts for 9% of total household debt. When we proceed to offset debt against assets, the third risk indicator shows that the residual risk to financial stability is likely to be rather small: Only 0.3% of total household debt can be traced to debt of vulnerable households whose assets do not suffice to offset it (which is exactly the same percentage as in the baseline scenario). As would be expected, real assets (rather than financial assets) serve to offset the bulk of household debt.

The difference between scenario 3 and the baseline scenario illustrates how these risk indicators would change if interest rates were to rise to the level of the highest weighted interest rate in the time series since 2003 (6.35%, measured in October 2008). In this case, the share of households with a negative financial margin would increase by 1.6 percentage points; their share in total household debt would rise by 3.4 percentage points; and their share of uncovered debt in total household debt would climb by 0.2 percentage points.

These stress test results should be interpreted as upper boundaries for the following reasons: First, the figures relate to households with a negative financial margin, rather than to private bankruptcy cases. Households with negative financial margins can be expected to have a few options left before filing for private bankruptcy, such as seeking debt restructuring, seeking help from family and friends, etc. Second, the amount of outstanding debt, as defined for the second and the third risk indicator, relates to the entire debt (mortgage and nonmortgage) of households with a negative financial margin; it is not limited to mortgages with adjustable rates. The analysis at hand is based on the assumption that households with two or more outstanding loans or with other types of debt will not be able to repay any one of their loans or any of the other debt types, not even in part. Finally, readers must bear in mind that the simulated losses estimated for banks and households refer to unrealized losses. These losses would only be realized if they were to fall due as soon as a given scenario materializes. In actual fact, loans come with comparatively long maturities.

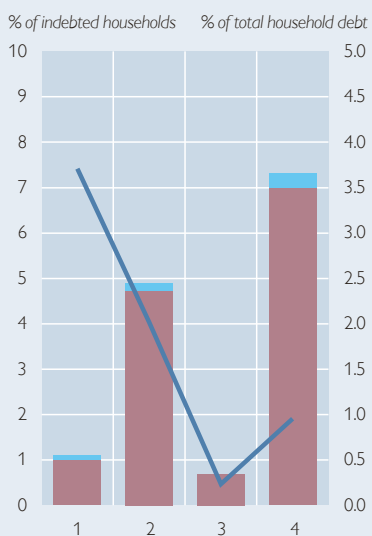
A disaggregated look at the stress test results shows that the simulated increase in interest rates affects above all households whose debt is largely offset by their assets. This finding, which becomes evident from chart 2, is consistent with the results in table 1, according to which higher-income households tend to hold a larger share of the adjustable rate mortgage debt. While the incidence of households with a negative financial margin is disproportionately high in the lower-income segments, such households at the same time account for a smaller share in total household debt. Of the 7% of total household debt held by households with a negative margin in the baseline scenario (see table 2), the two lower-income segments account for 3 percentage points, and the two upper-income segments account for 4 percentage points (see chart 2). The simulated scenarios 1 to 3 show that an increase in interest rates will affect the debt of the lower-income segments as much as those of the upper-income segments. For instance, we find a rise in interest rates of 3.9 percentage points (scenario 3) would drive up the share of debt held by vulnerable households by 1.7 percentage points both in the two lower-income segments (from 3% to 4.7%) and in the two upper-income groups (from 4% to 5.7%). At the same time, the amount of debt held by vulnerable households that is not offset by their total assets is low across all income groups and in all scenarios.

While the risk to financial stability that may arise from interest rate increases is interpreted to be low, the debt burden may nonetheless be huge for individual households. Many of them would have to use a major share of their financial and/or real assets to be able to pay back their debt. Moreover, the debt burden would be even higher if interest rate increases were to coincide with other shocks, such as income losses or an appreciation of foreign currencies, such as the Swiss franc.

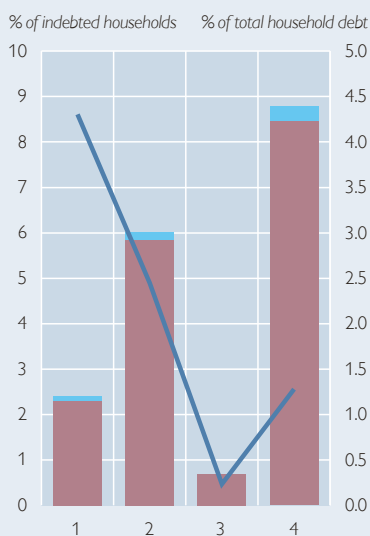
Chart 2

OeNB household stress test: increase in interest rates (by income segments)

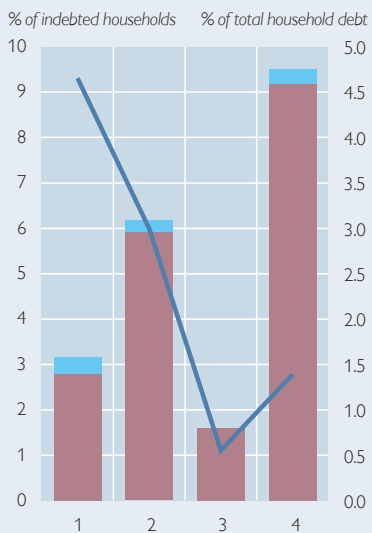
Baseline scenario



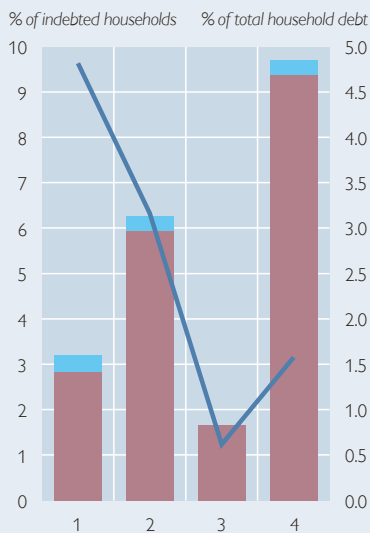
Scenario 1: increase by 1.4 percentage points



Scenario 2: increase by 2.9 percentage points



Scenario 3: increase by 3.9 percentage points



■ Debt held by households with a negative financial margin, not offset by assets (right-hand scale)
■ Debt held by households with a negative financial margin, as offset by assets (right-hand scale)
— Households with a negative financial margin (left-hand scale)

Source: HFCS Austria 2014, OeNB and author's calculations.

Share of variable rate loans comes down gradually

Foreign currency loans remain a concern

In the second quarter of 2016, loans with an initial rate fixation period of up to one year accounted for 71% of new lending (in euro) to households compared to 75% in the same period of the previous year. The share of variable rate loans in new housing narrowed to 64%, down from 71% 12 months earlier. But despite this recent decline, the share of variable rate loans is still very high by international comparison. On the one hand, this entails lower current interest expenses. In the second quarter of 2016, households' interest expenses equaled 1.7% of aggregate disposable income, about 2 percentage points less than in 2008, the year before interest

rates had begun to fall. Lower current interest expenses result from the faster pass-through of the ECB's lower key interest rates to lending rates in Austria than to those in the euro area as a whole. In view of the comparatively low level of indebtedness of Austrian households, loan quality may also have played a role. On the other hand, however, the high share of variable rate loans in total lending over the medium term implies considerable interest rate risks in the household sector.

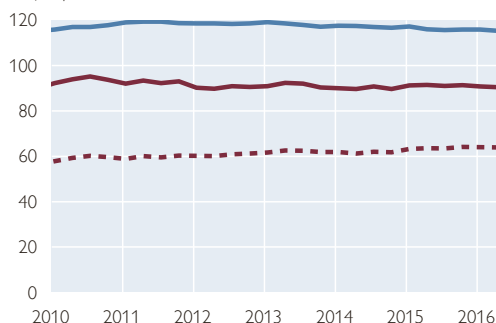
Likewise, the still very high share of foreign currency loans in the total stock of lending remains a major risk⁴ factor for households, despite a notice-

Chart 16

Indicators of household indebtedness

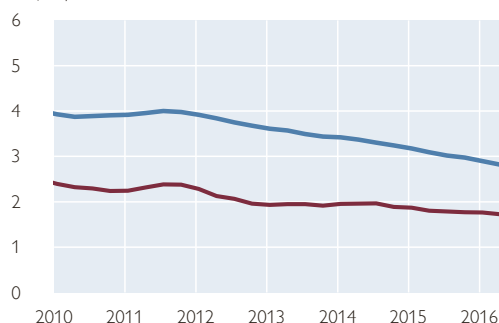
Liabilities

% of disposable income



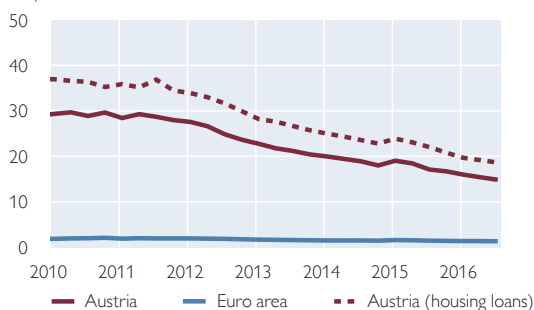
Interest expenses

% of disposable income



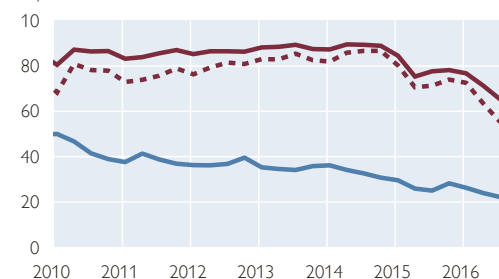
Foreign currency loans

% of total loans



Variable rate loans

% of total loans



Source: OeNB, Statistics Austria, ECB, Eurostat.

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

⁴ This risk had been highlighted in January 2015 when, as a result of the strong 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.

able decrease in past years. In September 2016, the share of foreign currency loans fell to 14.8%, about half the maximum value reached about ten years ago. The foreign currency share varies considerably depending on loan pur-

pose: For housing loans, it was 18.0%, for consumer loans 5.0% and for other loans 11.0%. Almost all outstanding foreign currency-denominated loans are denominated in Swiss francs (close to 97%).

Box 2

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

In recent years, the allocation of new foreign currency (FX) loans to the household sector has been reduced considerably to about 1% of total new lending in mid-2016. However, the household sector's stock of FX loans remains relatively large, accounting for about 15.4% of all household debt in mid-2016. The fact that most loans are fully outstanding until the repayment deadline, which in most cases has yet to come, is crucial in understanding why the stock of FX loans is as large as it is. Also, valuation effects have played an important role for maintaining the large size of the stock of FX loans. In particular, as more than 90% of all FX loans to Austrian households are denominated in Swiss francs, the appreciation of the Swiss currency against the euro over recent years has directly increased the outstanding amount of such loans.

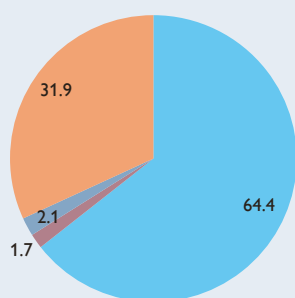
As FX borrowing is highly relevant for financial stability in Austria, we have analyzed the latest developments and present some descriptive statistics based on data of the Eurosystem Household Finance and Consumption Survey (HFCS) in this box. Chart 1 below shows that approximately 2.3% of Austrian households (90,000 households) have FX loans. About half of these households also hold debt in euro. Households with euro-only debt are a larger group, accounting for 32.1% of Austrian households. The remaining 65.6% of households do not have any debt.

Chart 1

Distribution of households by debt category

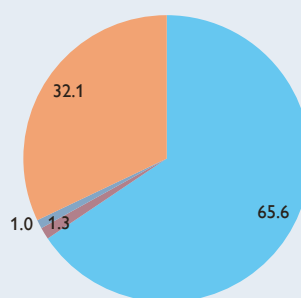
2010

%



2014

%



Legend: No debt (light blue), Debt only in FX (dark blue), Debt in euro and FX (grey), Debt only in euro (orange).

Source: HFCS Austria 2010 and 2014, OeNB.

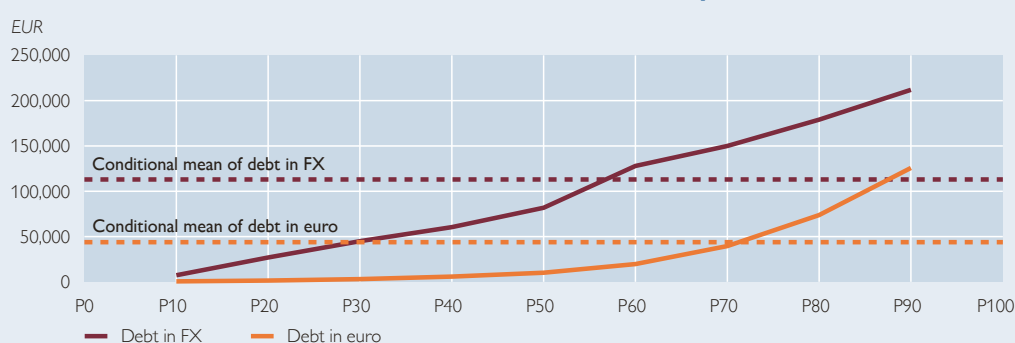
While the proportion of households with euro-only debt remained largely stable between 2010 and 2014, the proportion of FX borrowers in 2014 was significantly lower than in 2010. The share of households without debt increased slightly between 2010 and 2014.

Chart 2 shows the distribution of FX debt across Austrian households represented by its quantile function. One-tenth of Austrian FX-borrowing households have FX debt of less than EUR 7,000, and one-half have FX debt of less than some EUR 82,000. By contrast, about one-fifth of households with FX debt have FX debt of more than EUR 180,000, and one-tenth have FX debt of more than some EUR 212,000. The mean is around EUR 113,000 and

hence is in the sixth decile. This implies that approximately 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. The large FX debt values are due, on the one hand, to the bullet loan structure of most FX loans and, on the other hand, to the fact that FX loans are almost exclusively mortgage loans whereas very often euro loans are nonmortgage loans. Overall, around 17% of households hold mortgage loans; 21% hold nonmortgage loans. The aggregate share of mortgage loans accounts for more than 85% of total household liabilities.

Chart 2

Households with FX debt vs. euro-denominated debt: percentiles and mean



Source: HFCS Austria 2014, OeNB.

Looking at the coverage of FX debt by assets at the household level helps us understand the potential risk associated with the outstanding FX debt (see table below). Almost 45% of the FX debt is covered by financial assets. If real estate and other tangible assets are deducted, only 0.2% of all Austrian borrowers have FX debt that is not covered by some assets. This debt makes up 2.6% of total FX debt and 0.4% of total debt. This means that financial stability risks stemming from households defaulting on their FX debt are rather limited. What is more, most likely only a small share of these households would be vulnerable under adverse economic developments.

Table

FX debt covered by assets

	Share in total FX debt	Share in total debt
	%	
FX debt	100.0	15.4
FX debt minus current accounts	97.9	15.0
FX debt minus current and savings accounts	68.4	10.5
FX debt minus financial wealth	55.6	8.6
FX debt minus financial wealth and other real estate	46.6	7.2
FX debt minus financial wealth, other real estate and main residence	3.0	0.5
FX debt minus all wealth	2.6	0.4

Source: HFCS Austria 2014, OeNB.

However, while the risk to financial stability from household FX debt is low given the level of household wealth, FX debt can be a substantial burden for vulnerable households. Furthermore, small groups of highly FX-indebted households can still create problems, if this debt is concentrated in certain banks or regions. A further qualification to this analysis is that it is based on current wealth and debt figures, which may change with economic conditions, especially in the case of FX loans (due to the risks associated with changes in exchange rates, interest rates or asset prices; such changes could sharply reduce the value of the repayment vehicle).

Box 3

Real estate price changes and household vulnerability – microdata evidence in Austria

The evaluation of household vulnerability in conjunction with house price changes is a core topic of financial stability analyses. For this reason, an extensive analysis of the house price distribution, as well as its change over time and in connection with the finances and liabilities of households in Austria, was published in Financial Stability Report 31 (Albacete et al., 2016). This box returns to the subject and sheds some light on the development over recent years in Austria. Additionally, the results are compared with available information on the euro area.¹

We need to inspect information about household real estate holdings before evaluating related financial stability risk from households. Table 1 reports participation rates as well as median and mean levels of real assets, with an emphasis on the subcomponents household main residence and other real estate as well as mortgage loans (separated into mortgages for households' main residences and for other real estate) for Austria for the years 2010 and 2014 and for the euro area² for 2010.

Table 1

Real estate and mortgage loans: Austria vs. the euro area

	2010						2014		
	Austria			Euro area			Austria		
	Owner-ship rates	Median	Mean	Owner-ship rates	Median	Mean	Owner-ship rates	Median	Mean
	%	EUR 1,000		%	EUR 1,000	%	EUR 1,000		
Real Assets	84.8	107	277	91.1	145	235	84.5	140	281
HMR	47.7	200	258	60.1	180	217	47.7	250	289
ORE	13.4	94	228	23.8	103	211	12.1	124	330
Mortgage loans	18.4	38	76	23.1	68	95	16.7	60	89
Mortgages for the HMR	16.6	37	73	19.4	65	87	15.5	60	89
Mortgages for ORE	2.4	36	80	5.5	57	95	1.5	53	76

Source: HFCS 2010 and 2014, OeNB and ECB.

Note: HMR = household's main residence; ORE = other real estate. The first wave of the HFCS 2010 covered those countries that were members of the euro area at the time, excluding Ireland, Estonia and Latvia. The estimates of mean and median are all rounded to the nearest thousand.

Slightly fewer than half of households in Austria own their main residence. The ownership rate in Austria in 2010 was 47.7% compared to 60.1% in the euro area. As the ownership rate stayed constant from 2010 to 2014, the group of households that newly bought real estate in Austria should also be small.

The HFCS data also reflect the recent house price inflation in Austria, as the median wealth held in the form of a household's main residence increased from EUR 200,000 to EUR 250,000 between 2010 and 2014. By comparison to the euro area, the wealth held in Austria in the form of households' main residences is relatively large, conditional on the household owning its main residence.

Looking at the liability side, the share of mortgage holders is smaller in Austria (18.4%) than in the euro area (23.1%), and both the mean and median levels of outstanding mortgages were lower in Austria than in the euro area in 2010. Furthermore, while the share of households with a mortgage decreased from 18.4% to 16.7%, the size of mortgages in terms of both mean and median increased substantially in Austria between 2010 and 2014 (the median from EUR 38,000 to EUR 60,000; the mean from EUR 73,000 to EUR 89,000).

¹ All the results are based on the first two waves of the Household Finance and Consumption Survey (HFCS) published by the ECB (the interested reader is referred to the documentation of this survey, e.g. Fessler et al., 2016, or ECB, 2013).

² The first wave in the HFCS 2010 contains the euro area countries at the time, excluding Ireland, Estonia and Latvia.

In addition, in Austria, the high share of foreign currency loans (in terms of outstanding stocks from the past, not new loans), which are often bullet loans, has to be kept in mind (see box 2 in this report).

However, as the level of wealth held in real estate also increased between 2010 and 2014, the change in liabilities itself does not provide enough information about household vulnerability. Household vulnerability is discussed in more detail below.

Table 2 shows the importance of real estate wealth for the large majority of households in Austria. To account for the limitations that surveys (without an oversampling scheme) have in recording the tails of the distribution, we restrict the analysis in this part to the middle 90% of households with respect to net wealth.

Table 2

Portfolio allocation for the middle 90% of households in terms of net wealth

%	2010				2014	
	Austria		Euro area		Austria	
	Share in gross wealth	Share in net wealth	Share in gross wealth	Share in net wealth	Share in gross wealth	Share in net wealth
Net wealth	92.4	100.0	87.7	100.0	91.8	100.0
Gross wealth	100.0	108.3	100.0	114.1	100.0	108.9
Real assets	79.3	85.8	83.4	95.1	82.1	89.4
Real estate assets	67.6	73.2	75.6	86.2	73.5	80.1
Financial assets	20.7	22.4	16.6	19.0	17.9	19.5
Total liabilities	7.6	8.3	12.3	14.1	8.2	8.9
Mortgage loans	6.7	7.2	10.5	12.0	7.5	8.1
Nonmortgage loans	1.0	1.1	1.8	2.1	0.7	0.8

Source: HFCS 2010 and 2014, OeNB and ECB.

Note: The first wave of the HFCS 2010 covered those countries that were members of the euro area at the time, excluding Ireland, Estonia and Latvia.

Real assets in general, and real estate (households' main residences and other real estate taken together) in particular, constitute the most important components of households' wealth at the aggregate level. In the euro area, in particular, 75.6% of gross wealth is held in real estate compared to 67.6% in Austria. The share of total liabilities is also smaller in Austria than in the euro area. For instance, the aggregate share of outstanding mortgages in terms of net wealth is 7.2% in Austria compared to 12.0% in the euro area. Reflecting the substantial price increases in the past few years, between 2010 and 2014 both real estate assets and liabilities gained importance in Austrian households' balance sheets.

Turning to households' financial vulnerability, table 3 reports the debt³-to-asset (DTA), debt-to-income (DTI, based on yearly gross income), and debt-service-to-income (DSTI, also based on gross yearly income) ratios for mortgage holders. These indicators are generally thought of as short-term (DSTI), medium-term (DTI) and long-term (DTA) measures of households' debt burden. All indicators focus on the borrower's perspective, as is highlighted in the handbook of the ESRB (ESRB, 2014). Again, the special case of bullet loans has to be kept in mind.

³ For reasons of simplicity and comparability, none of the indicators take the savings for repayment vehicles into account. Debt includes both mortgage and nonmortgage debt of mortgage holders.

Table 3

Household vulnerability for mortgage debt holders

%

	2010				2014	
	Austria		Euro area		Austria	
	Median	Share of vulnerable households	Median	Share of vulnerable households	Median	Share of vulnerable households
Debt-to-asset ratio (DTA)	12.2	3.5	26.8	3.9	18.0	1.6
Debt-to-income ratio (DTI)	76.4	15.4	167.2	26.4	106.7	17.9
Debt service-to-income ratio (DSTI)	4.8	5.4	17.9	14.6	6.9	2.6

Source: HFCS 2010 and 2014, OeNB and ECB.

Note: The first wave of the HFCS 2010 covered those countries that were members of the euro area at the time, excluding Ireland, Estonia and Latvia. As commonly done in the literature, a household is classified as vulnerable with regard to the relevant indicator if DTA>100%, DTI>300% and DSTI>40%.

In 2010, the Austrian median household with mortgage loans had a lower debt burden than the median euro area household. Taking, for example, the DTA indicator, in 2010 at the median, about 12% of gross assets were outstanding in liabilities for mortgage holders. This figure was less than half the comparable figure for the euro area (about 27%). The same holds for the two other indicators of households' debt burden. Furthermore, in Austria, the share of vulnerable households⁴ in 2010 was considerably lower than in the euro area. Taking e.g. the definition of vulnerability of DSTI greater than 40% provides an estimate of 5.4% of vulnerable mortgage holders in Austria compared with 14.6% in the euro area.

While the median of each measure of vulnerability increased between 2010 and 2014 in Austria, the share of vulnerable households is more important with respect to financial stability. In two out of three of the indicators (DTA and DTI), this share decreased by more than 50%. Thus, in 2014, fewer mortgage holders in Austria were potentially vulnerable than in 2010. Only the estimate of the share of vulnerable households based on DSTI increased slightly due to the increase in outstanding liabilities (as was shown in table 1).

While this box cannot cover the full depth of issues related to households' financial vulnerability from house price developments and mortgage loans, it provides additional information compared to the specific study on the topic in the Financial Stability Report 31, because it highlights the comparison with the euro area and the development over time between 2010 and 2014 in Austria. Overall, the conclusions from Albacete et al. (2016) are confirmed and complemented: The vulnerability of households from mortgage loans is considerably lower in Austria than in the euro area. The share of vulnerable households decreased substantially for two out of three indicators between 2010 and 2014. Even adverse scenarios of house price decreases (drawing on results from the Financial Stability Report 31) have only a limited impact on the losses given default of vulnerable households. Hence, judging from HFCS data on real estate and liabilities, Austrian households' financial vulnerability from these assets and liabilities has remained relatively modest so far. In a changing environment, however, the vulnerability of indebted households deserves close attention and constant monitoring.

⁴ The common definitions of vulnerability from the literature, i.e. DTA greater than 100%, DTI greater than 300%, and DSTI greater than 40%, are used for illustrative purposes for these results.

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