MONETARY POLICY & THE ECONOMY

Quarterly Review of Economic Policy

Eurosystem Household Finance and
Consumption Survey 2017 for Austria

Stability and Security.

Q4/18

Please collect used paper for recycling.   *EU Ecolabel: AT/028/024*

Contents

Analyses

From boom to stable growth in Austria

Gerhard Fenz, Martin Schneider

In focus:

Pirmin Fessler, Peter Lindner, Martin Schürz

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

Call for applications: Visiting Research Program

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

The OeNB offers a stimulating and professional research environment in close proximity to the policymaking process. Visiting researchers are expected to collaborate with the OeNB's research staff on a prespecified topic and to participate actively in the department's internal seminars and other research activities. They will be provided with accommodation on demand and will, as a rule, have access to the department's computer resources. Their research output may be published in one of the department's publication outlets or as an OeNB Working Paper. Research visits should ideally last between three and six months, but timing is flexible.

Applications (in English) should include
- a curriculum vitae,
- a research proposal that motivates and clearly describes the envisaged research project,
- an indication of the period envisaged for the research visit, and
- information on previous scientific work.

Applications for 2019 should be e-mailed to *eva.gehringer-wasserbauer@oenb.at* by May 1, 2019.

Applicants will be notified of the jury's decision by mid-June 2019.

Nontechnical summaries
in English and German

Nontechnical summary in English

Eurosystem Household Finance and Consumption Survey 2017 for Austria

Pirmin Fessler, Peter Lindner, Martin Schürz

This report presents results from the third wave of the Eurosystem Household Finance and Consumption Survey (HFCS) for Austria. It focuses on the components of the household balance sheet and discusses the main findings from the survey.

While wealth is generally distributed much more unequally than income, wealth inequality in Austria is high in comparison to other European countries, and it has remained rather stable across the three waves of the HFCS (2010–2017). The share held by the top 10% of households in total net wealth was 56.4% in 2017.

In Austria, even wealthy households tend to invest rather conservatively and the majority of wealthy households in Austria do not invest in risky assets at all. The share of investments relative to financial assets is stable across the wealth distribution.

The level of indebtedness of Austrian households is comparably low. More than two-thirds of Austrian households do not have any debt. Subjective perceptions of wealth have become increasingly important in economics. The survey data show the importance of households' self-perception of wealth for their saving behavior.

As the joint distribution of income, consumption and wealth is of particular interest for many international institutions, we match the HFCS data with European Union Statistics of Income and Living Conditions (EU-SILC) and with Household Budget Survey (HBS) data in Austria. The results based on the HFCS alone are quite similar to the findings of the matching exercise.

An issue that remains a problem is that the HFCS is fraught with serious difficulties regarding the measurement of the top of the wealth distribution.

Nontechnical summary in German

Eurosystem Household Finance and Consumption Survey 2017 für Österreich

Pirmin Fessler, Peter Lindner, Martin Schürz

Im Rahmen des Eurosystems wurden 2017 zum dritten Mal Daten zur finanziellen Situation und zum Konsumverhalten der privaten Haushalte erhoben (Household Finance and Consumption Survey – HFCS). Im vorliegenden Bericht werden die Ergebnisse der Erhebung in Österreich zusammenfassend dargestellt. Der Schwerpunkt liegt dabei auf der Struktur der Haushaltsbilanzen und der Erörterung der zentralen Erhebungsergebnisse.

Die Vermögensverteilung ist generell deutlich ungleicher als die Einkommensverteilung. Österreich weist im europäischen Vergleich eine hohe Vermögensungleichheit auf. Über die drei HFCS-Wellen hinweg (2010–2017) kann eine relativ stabile Verteilung beobachtet werden. 2017 hatten die vermögendsten 10 % der privaten Haushalte einen Anteil von 56,4 % am Nettogesamtvermögen. In Österreich veranlagen auch die vermögenden Haushalte eher konservativ und die Mehrheit der vermögenden Haushalte meidet risikoreichere Anlagen generell. Relativ zum gesamten Finanzvermögen ist der Anteil risikoreicherer Anlagen über die Nettovermögensverteilung hinweg stabil.

Der Verschuldungsgrad der privaten Haushalte in Österreich ist relativ gering. Über zwei Drittel der österreichischen Haushalte sind schuldenfrei.

Der subjektiven Wahrnehmung zu Vermögen wird in den Wirtschaftswissenschaften zunehmend mehr Aufmerksamkeit geschenkt. Diesbezüglich unterstreichen die Erhebungsdaten des HFCS, dass die Selbstwahrnehmung der privaten Haushalte auch ihr Sparverhalten prägt.

Da die gemeinsame Verteilung von Einkommen, Konsum und Vermögen für zahlreiche internationale Institutionen von besonderem Interesse ist, wurden die HFCS-Daten mit Daten aus der EU-SILC-Erhebung über Einkommen und Lebensbedingungen (Survey on Income and Living Conditions), sowie mit Daten der Konsumerhebung in Österreich verknüpft. Im Ergebnis war festzustellen, dass sich die allein auf Basis der HFCS-Daten erzielten Ergebnisse nur unwesentlich von jenen auf Basis der verknüpften Daten unterscheiden.

Als weiterhin problematisch ist jedoch die mangelnde Aussagekraft der HFCS-Daten im obersten Bereich der Vermögensverteilung einzustufen.

Analyses

From boom to stable growth in Austria

Economic outlook for Austria from 2018 to 2021 (December 2018)

Gerhard Fenz,
Martin Schneider[1]

1 Executive summary

Following a strong expansion, the Austrian economy has reached a mature phase of the cycle. Supported by robust domestic demand and a solid export performance, real GDP growth is now projected to reach 2.7% in 2018, same as in 2017. Despite the downward revision by 0.4 percentage points compared with the June 2018 outlook, a rate of 2.7% does not signal a weakening of the underlying cyclical strength: By and large, the reassessment can be traced back to revised historical data. Looking further ahead, GDP growth is expected to slow down to 2.0% (2019), 1.9% (2020) and 1.7% (2021) in line with the weakening global economy. In other words, the Austrian economy has peaked and is now gradually moving onto a stable growth path. The unemployment rate (Eurostat definition) is projected to drop to 4.9% in 2018, and to continue to inch downward thereafter, to 4.7% in 2019 and 2020 and to 4.5% in 2021. HICP inflation is expected to remain stable at 2.1% in both 2018 and 2019, before dropping to 2.0% in 2020 and further to 1.9% in 2021. The general government stands to run a balanced budget in 2018 and is projected to achieve a surplus of 0.5% of GDP by 2021. In parallel, the debt-to-GDP ratio is expected to drop to 64.8% by 2021, from 78.3% in 2017.

The global economy continues to expand. Both the group of advanced economies – supported by robust growth in the U.S.A. – and the group of emerging market economies have been growing at a brisk pace. At the same time, global developments have been less synchronized than previously: In late 2017 and early 2018 numerous regions had witnessed a temporary growth dip, from which they reemerged in the second half of 2018, however. While global output growth is expected to remain comparatively stable in the next few years, global trade growth will continue to decelerate, driven above all by the trade dispute between the U.S.A. and China. The growth setback that Germany, Austria's most important trading partner, experienced in the third quarter of 2018 is seen as a temporary phenomenon amid the struggles of the German automotive industry to meet the new emission requirements.

The Austrian export industry has been doing well in 2018 so far, even though the growth of demand for exports has gone down after the boom year of 2017. Given broad regional diversification, real export growth is projected to level off only slightly in 2018, to 4.2%, compared with 4.6% in 2017. To a large extent, these results are attributable to goods exports to Central, Eastern and Southeastern Europe (CESEE) economies, which grew at a nominal rate of 10% in 2018, i.e. at almost twice the rate of goods exports to all other countries. With annual export growth figures of close to 4% for the period from 2019 to 2021, exports will continue to be a key driver of the Austrian economy in the years ahead.

Austria's manufacturing industry has been keeping up its investment drive given strong demand in international markets. On a cumulative basis, investment in machinery and transport equipment grew by as much as 20% from 2015 to 2017, and this trend appears to have continued in 2018, with 4.1% growth measured for

Chart 1

Main results of the forecast
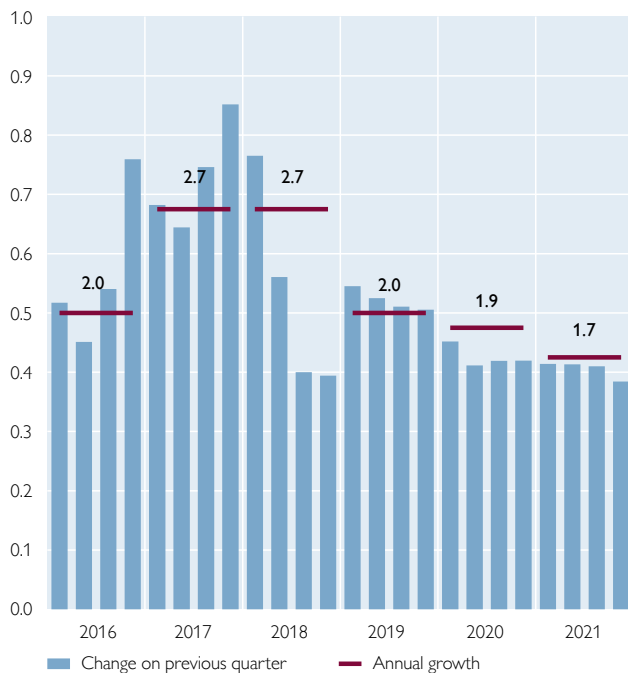
Real GDP growth

Quarterly change in % (seasonally and working day-adjusted)

Harmonised Index of Consumer Prices

Annual change in %
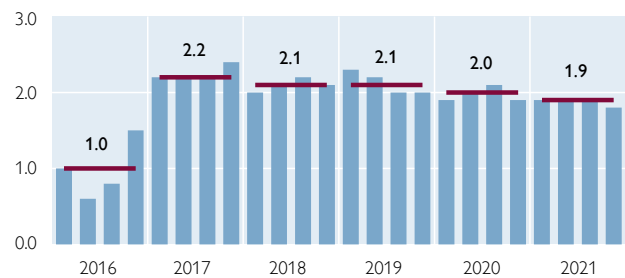
Unemployment rate (Eurostat definition)

%
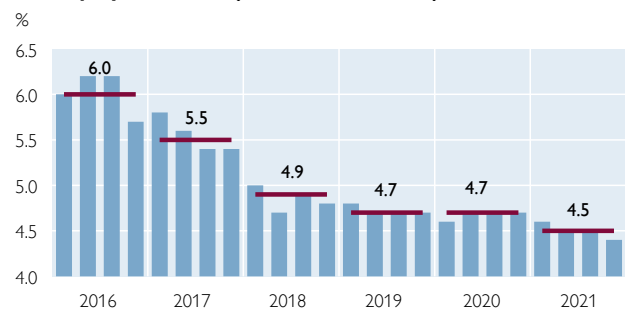
Source: WIFO, Statistics Austria, OeNB December 2018 outlook.

investment in equipment. This means that the current investment cycle has been exceptionally strong compared with previous cycles. The outlook for the period from 2019 to 2021 is that of a gradual decline. Residential construction investment has also been growing substantially, with cumulative growth of just below 6% in 2016 and 2017. Growth remained strong also in the first half of 2018. The sharp increase in building permits issued in 2016 and 2017 implies continued strong growth of residential construction investment in the second half of 2018 as well. For 2018 as a whole, residential construction investment is projected to grow by 3.0%, and the outlook for 2019 is only slightly less strong. Looking further ahead, the declining trend in building permits registered in the first half of 2018 signals weaker construction activity for 2020. The civil engineering industry benefited from numerous public infrastructure measures in 2018 and will continue to do so in the years ahead.

Private consumption has been a major pillar of the domestic economy, with 2018 being the third year in a row with relatively robust private consumption growth rates. As in previous years, private consumption has been fueled by vivid employment growth. Moreover, additional momentum has been provided by the fact that the wage settlements for 2018 are higher than those for 2017. From January 2019 onward, the purchasing power of households with children will be strengthened by higher tax relief for such households (Familienbonus Plus). However, the full effect of the higher tax relief for children – EUR 1.2 billion (0.5% of household income) – will not materialize until 2020; in 2019, the effect is estimated to be EUR 800 million. Thus, private consumption is set to keep

growing at solid rates in 2018 and 2019 (1.7%) and 2020 (1.6%), before decelerating to 1.3% in 2021 amid the expected downturn of the economy.

Labor market conditions have been improving markedly during 2018. Both the growth of payroll employment as well as of the number of hours worked peaked in

Table 1

OeNB December 2018 outlook for Austria – main results[1]

	2017	2018	2019	2020	2021
Economic activity	*Annual change in % (real)*				
Gross domestic product (GDP)	+2.7	+2.7	+2.0	+1.9	+1.7
Private consumption	+1.7	+1.7	+1.7	+1.6	+1.3
Government consumption	+1.5	+1.8	+1.5	+1.2	+1.3
Gross fixed capital formation	+3.8	+3.5	+2.6	+2.2	+1.7
Exports of goods and services	+4.6	+4.2	+3.8	+4.0	+3.7
Imports of goods and services	+4.4	+2.7	+3.6	+3.8	+3.4
	% of nominal GDP				
Current account balance	1.9	2.1	2.4	2.6	2.8
Contribution to real GDP growth	*Percentage points*				
Private consumption	+0.9	+0.9	+0.9	+0.8	+0.7
Government consumption	+0.3	+0.3	+0.3	+0.2	+0.2
Gross fixed capital formation	+0.9	+0.8	+0.6	+0.5	+0.4
Domestic demand (excluding changes in inventories)	+2.0	+2.1	+1.8	+1.6	+1.3
Net exports	+0.3	+0.9	+0.3	+0.3	+0.3
Changes in inventories (including statistical discrepancy)	+0.4	−0.3	−0.1	+0.0	+0.0
Prices	*Annual change in %*				
Harmonised Index of Consumer Prices (HICP)	+2.2	+2.1	+2.1	+2.0	+1.9
Private consumption expenditure (PCE) deflator	+1.7	+2.0	+2.0	+1.9	+1.8
GDP deflator	+1.3	+1.7	+2.0	+1.9	+1.7
Unit labor costs (whole economy)	+0.5	+1.4	+1.8	+1.6	+1.4
Compensation per employee (at current prices)	+1.5	+2.5	+2.7	+2.5	+2.1
Compensation per hour worked (at current prices)	+1.1	+2.4	+2.8	+2.6	+2.2
Import prices	+2.7	+2.4	+2.2	+2.1	+2.1
Export prices	+1.8	+1.7	+2.1	+2.1	+2.0
Terms of trade	−0.9	−0.7	−0.1	+0.0	−0.1
Income and savings					
Real disposable household income	+0.5	+1.8	+2.1	+1.6	+1.3
	% of nominal disposable household income				
Saving ratio	6.8	6.9	7.1	7.1	7.0
Labor market	*Annual change in %*				
Payroll employment	+1.9	+2.2	+1.4	+1.1	+1.0
Hours worked (payroll employment)	+2.3	+2.2	+1.3	+1.0	+0.9
	% of labor supply				
Unemployment rate (Eurostat definition)	5.5	4.9	4.7	4.7	4.5
Public finances	*% of nominal GDP*				
Budget balance	−0.8	0.0	+0.1	+0.4	+0.5
Government debt	78.3	74.1	70.7	67.5	64.8

Source: 2017: WIFO, Eurostat, Statistics Austria; 2018 to 2021: OeNB December 2018 outlook.

[1] The outlook was drawn up on the basis of seasonally and working day-adjusted national accounts data (trend-cycle component: flash estimate for Q3 18). The data differ, in the method of seasonal adjustment, from the quarterly data published by Eurostat following the switch to the ESA 2010 framework in fall 2014. The data published by Eurostat are much more volatile and do not facilitate detailed economic interpretation. The values for 2017 deviate also from the non-seasonally adjusted data released by Statistics Austria.

early 2018 and continued to increase thereafter, albeit at a somewhat slower pace. Due to the strong initial momentum, payroll employment numbers are expected to increase by 2.2% in 2018 as a whole, which is an acceleration by 0.3 percentage points on the year. The slowdown of growth in the course of 2018 as well as shrinking hiring rates for leased employees point toward weaker growth rates in the years ahead. Payroll employment numbers are expected to rise by 1.4% in 2019, by 1.1% in 2020 and by 1.0% in 2021. The high employment momentum caused Austria's unemployment rate (Eurostat definition) to drop to 5.5% in 2017, from 6.0% in 2016. In 2018 and beyond, the unemployment rate is expected to decrease further, namely to 4.9% in 2018, to 4.7% in both 2019 and 2020 and to 4.5% in 2021.

Inflation as measured by the HICP is forecast to reach 2.1% in 2018 as a whole, having accelerated somewhat in the course of 2018 on account of rising commodity prices. In 2019, HICP inflation will remain unchanged at 2.1%, as the inflation-dampening effect of the expected decrease in commodity prices will be offset by higher wage settlements. Thereafter, HICP inflation is expected to decelerate to 2.0% in 2020 and to 1.9% in 2021 in line with the anticipated cyclical downturn.

The general government budget is projected to be balanced in 2018, benefiting from very good cyclical conditions and a further decrease of debt servicing costs. These two effects more than offset the loosening of fiscal policy in 2018: Costs have been driven up by (previously adopted) labor market measures as well as by the abolition of public long-term care providers' recourse to patients' assets, while cuts of wage-related taxes put a strain on revenues. The expansionary stance of fiscal policy will be retained in 2019. The slowdown of revenue growth resulting from the introduction of higher tax relief for families with children will not be compensated completely by the withdrawal of temporary stimulus measures adopted by the previous government. Thanks to the continued favorable cyclical and interest rate conditions, the budget balance is nonetheless expected to improve slightly in 2019 and to keep improving in 2020 and 2021. Hence, subject to a no-policy-change assumption, Austria should see general government surpluses from 2019 onward, for the first time since the early 1970s. In this context, the debt-to-GDP ratio will decline to 64.8%, i.e. return to pre-crisis levels. Budget surpluses (and a balanced general government budget this year) as well as the continued reduction of the debt of public wind-down vehicles will lead to a multi-annual decrease of the nominal debt ratio as last seen in the 1970s.

2 Technical assumptions

This outlook for the Austrian economy is the OeNB's contribution to the December 2018 Eurosystem staff macroeconomic projection. The forecasting horizon ranges from the fourth quarter of 2018 to the fourth quarter of 2021. The cutoff date for all assumptions on the performance of the global economy, interest rates, exchange rates and crude oil prices was November 26, 2018. To prepare these projections, the OeNB used its macroeconomic quarterly model and national accounts data, adjusted for seasonal and working-day effects (trend-cycle component), provided by the Austrian Institute of Economic Research (WIFO). These data differ from the quarterly series published by Eurostat since the changeover to the European System of Accounts (ESA 2010) in fall 2014 in that the latter are solely seasonal and working-day adjusted and therefore include irregular fluctuations that cannot

be mapped to specific economic fundamentals in their entirety. The values for 2017 also differ from the nonseasonally adjusted data published by Statistics Austria. Detailed national accounts data are based on the flash estimate for the third quarter of 2018, and the GDP measures as well as the key demand components are first estimates of the first full release for the third quarter of 2018. The short-term interest rate used for the forecasting horizon is based on market expectations for the three-month EURIBOR. The three-month EURIBOR continues to be negative in 2018 and 2019 but will turn positive in 2020 according to financial market expectations. Long-term interest rates, which are in tune with market expectations for government bonds with an agreed maturity of ten years, will rise slightly over the forecasting horizon. The exchange rate of the euro vis-à-vis the U.S. dollar is assumed to remain at a constant USD/EUR 1.14. The projected development of crude oil prices is based on futures prices, which imply that crude oil prices should rise substantially from USD 54.4 per barrel Brent in 2017 to USD 71.8 in 2018, before gradually receding to USD 65.9 in 2021. The prices of commodities excluding energy are also based on futures prices over the forecasting horizon.

3 Global upswing continues amid growing risks

The global economic expansion is ongoing: both advanced and emerging market economies have been growing faster than their potential output measures and recorded mostly positive output gaps. Wages and consumer prices have increased substantially in numerous countries. Growth in the group of advanced economies has been driven by the U.S.A. Among *emerging market economies* – which have been posting solid growth rates as a group – developments have been highly heterogeneous, with commodity-exporting countries benefiting from elevated commodity prices. Fears of a growth slowdown in China have remained unfounded so far. Argentina and Turkey are particularly vulnerable on account of their high current account deficits and inflation rates, as evidenced by the strong depreciation of their currencies. In general, global economic cycles have become less synchronized than in the past. Many regions witnessed temporary growth dips in late 2017 and early 2018. In the second quarter, global economic activity was rekindled by the strong performance of the U.S. and the Chinese economies. Over the medium-term horizon, the advanced economies are expected to see moderately weakening growth rates, driven by unfavorable shifts in their working age population and weak productivity gains. Moreover, the fading of the fiscal stimulus provided this year will have a dampening impact on U.S. economic activity in 2020. In contrast, the emerging market economies are expected to continue to see strong growth rates.

While global output growth is expected to remain comparatively stable in the next few years, global trade growth will continue to decelerate. Having accelerated twice as fast as GDP in recent decades, global trade will expand in line with GDP growth in the years ahead. Slowing trade growth reflects the stagnating expansion of global value chains but has also been brought on by the US-triggered trade dispute, which is currently being waged above all between the U.S.A. and China.

The *U.S.A.* has been witnessing an economic expansion since 2010. A comprehensive tax reform that entered into force in 2018 has been providing additional stimulus, stimulating wage and consumption growth as well as business investment. The rising price pressures have since prompted the Federal Reserve System to raise policy rates repeatedly. GDP growth will peak at 2.9% in 2018 and is expected to

Table 2

Underlying global economic conditions

	2017	2018	2019	2020	2021
Gross domestic product	*Annual change in % (real)*				
World excluding the euro area	+3.7	+3.8	+3.5	+3.6	+3.6
U.S.A.	+2.2	+2.9	+2.5	+2.0	+1.8
Japan	+1.7	+0.9	+1.0	+0.1	+0.7
Asia excluding Japan	+6.1	+6.2	+5.8	+5.8	+5.6
Latin America	+1.1	+0.7	+1.9	+2.6	+2.5
United Kingdom	+1.7	+1.3	+1.3	+1.3	+1.0
CESEE EU Member States[1]	+4.8	+4.4	+3.6	+3.2	+3.2
Switzerland	+1.7	+3.0	+1.9	+2.0	+2.0
Euro area[2]	+2.5	+1.9	+1.7	+1.7	+1.5
World trade (imports of goods and services)					
World	+5.2	+4.7	+3.7	+3.7	+3.9
World excluding the euro area	+5.5	+5.1	+3.5	+3.6	+3.6
Growth of euro area export markets (real)	+5.5	+4.3	+3.1	+3.5	+3.4
Growth of Austrian export markets (real)	+5.7	+4.0	+4.2	+4.2	+3.8
Prices					
Oil price in USD/barrel (Brent)	54.4	71.8	67.5	66.8	65.9
Three-month interest rate in %	−0.3	−0.3	−0.3	0.0	0.3
Long-term interest rate in %	0.6	0.7	0.9	1.1	1.3
USD/EUR exchange rate	1.13	1.18	1.14	1.14	1.14
Nominal effective exchange rate of the euro (euro area index)	112.0	117.9	117.9	117.9	117.9

Source: Eurosystem.

[1] Bulgaria, Croatia, Czech Republic, Hungary, Poland and Romania.
[2] 2017: Eurostat; 2018 to 2021: Results of the Eurosystem's December 2018 projections.

weaken gradually in the years ahead. For 2019, the biggest downside risks to the U.S. economy emanate from import tariff increases resulting from the trade conflict. Apart from direct negative effects of higher import prices and their impact on international chains of production, the prevailing climate of heightened uncertainty may also dampen investment spending. As the fiscal stimulus fades in 2020 and as monetary tightening kicks in, GDP growth rates will drop further to below 2%.

Growth in *China* remained strong in the first half of 2018 at GDP growth of 6¾%. In other words, the anticipated growth slowdown has been comparatively moderate. The years ahead are, however, likely to see a further weakening of growth in view of the ongoing transformation of the Chinese economy from manufacturing to a service economy and China's trade dispute with the U.S.A. Further downside risks to the economy stem from the high indebtedness of the corporate sector and the overheated real estate market.

The *Japanese* economy has been operating close to full capacity utilization on account of the cyclical upturn in recent years. Following particularly strong growth by Japanese standards in 2017, the pace of GDP growth was set to slow down in 2018 in line with cyclical developments. In tandem with a shrinking supply of labor the higher VAT rate will have a marked dampening impact on economic activity. The rate of value added tax (VAT) will be raised from 8% to 10% in October 2019 following repeated postponements of this measure.

Economic growth in the *United Kingdom* continued to decelerate in the first half of 2018 after earlier substantial setbacks during 2017 triggered by the Brexit vote.

The weakening pound sterling was driving up inflation, which in turn dampened real disposable household income and private consumption. The first half of 2018 was moreover marked by a slowdown of investment growth. The available leading indicators point to continued growth setbacks. The projections for the next couple of years are based on the assumption that the negotiations between the EU and the U.K. will be completed in due time, thus preventing a disorderly exit from the EU. Further assumptions include that the trade agreement to be concluded will mirror the CETA agreement concluded between the EU and Canada and that there will be an extended transition period following the U.K.'s official exit in March 2019. Growth in *Central, Eastern and Southeastern European* (CESEE) countries weakened in 2018 after having peaked in 2017, but continued to outpace euro area growth. Domestic demand benefits from strong employment growth and the stronger uptake of EU structural funds in 2018.

The *euro area* economy suffered a considerable setback in the third quarter of 2018. The weak quarterly growth rate (0.2%) reflects negative growth in Germany (−0.2%) and the weakness of the Italian economy (zero growth) against the backdrop of solid growth in France and Spain. However, the underlying growth dynamics continue to be sound in the euro area. Looking ahead to the fourth quarter of 2018, the euro area economy is set to revert to a path of solid, albeit slightly lower growth. Following 2.0% growth in 2018, euro area growth is expected to slow down to 1.7% in both 2019 and 2020, reflecting weaker international conditions and rising supply-side constraints. The growth expectation for 2021 is 1.6%.

The *German* economy was slowed down in the third quarter of 2018 by weaker global growth and car production cuts triggered by tighter emission tests. This production setback is expected to have been a temporary phenomenon, though, with output volumes rebounding to normal levels in the upcoming quarters. Above all, domestic demand is strong enough to offset weakening export growth. The biggest drags on economic growth in Germany have been supply-side constraints resulting from already pronounced skills shortages and insufficient aggregate demand. The skills shortages have already led to accelerated wage growth. GDP growth is set to decrease over the forecasting horizon, as the labor potential of Germany's working-age population has been largely tapped and as labor supply will stagnate at the end of the forecasting horizon despite stable migration figures.

Following relatively robust growth in 2017, the *Italian* economy has cooled down considerably in the course of 2018. The third quarter of 2018 witnessed stagnating output growth on account of a decline in manufacturing output as well as construction activity. At present, the biggest downside risks to the Italian economy stem from the heightened uncertainty created by the difficult political conditions. Doubts about the stability of the Italian budget have substantially driven up risk premiums for Italian government bonds and clouded the climate for business investment. The Italian government plans to considerably raise public investment and transfers to households from 2019 onward. However, the growth stimulus provided by additional government spending will be dampened by rising financing costs for business investment. Hence, growth will be mainly driven by exports and private consumption over the forecasting horizon.

France experienced a growth dip in the first half of 2018. Apart from the cooling of the global economy, temporary factors such as the timing of school holidays, strikes and adverse weather conditions have contributed to this slowdown. GDP

growth rebounded in the third quarter, however. Over the forecasting horizon, growth will be supported above all by stable domestic demand but also by exports.

For *Spain*, 2018 was the fifth year of economic recovery in a row, albeit subject to an incipient slowdown of growth. Households showed a higher propensity to save, which constituted a drag on private consumption. Business investment, however, and construction activity in particular, have remained robust. Price competitiveness gains have been supporting exports, thus contributing to an improvement in the current account balance.

4 From boom to stable growth in Austria

4.1 Outlook for Austrian exporters continues to be sound

The Austrian export economy has been doing well in 2018 so far, even though demand for exports has gone down after the boom year of 2017. Given broad regional diversification, real export growth is projected to level off only slightly in 2018, to 4.2%, compared with 4.6% in 2017. To a large extent, these results are attributable to goods exports to Central, Eastern and Southeastern Europe (CESEE) economies, which grew at a nominal rate of 10% in 2018, i.e. at almost twice the rate of goods exports to all other countries.

The underlying assumptions about Austria's export markets are based on stable growth levels of about 4% per year over the entire forecasting horizon. While the euro area markets grew at a somewhat weaker rate than the non-euro area markets in 2018, this pattern will reverse in 2019 in line with the anticipated continued economic recovery in the euro area. In recent years, Austrian exporters have been pricing their goods and services broadly in line with their competitors in export markets, thus maintaining stable price competitiveness. As a result, market share losses to emerging economies are expected to remain limited over the forecasting horizon. Export growth is set to weaken from 4.2% in 2018 to 3.7% in 2021. This

Table 3

Growth and price developments in Austria's foreign trade

	2017	2018	2019	2020	2021
Exports	*Annual change in %*				
Competitor prices on Austria's export markets	+1.9	+0.6	+2.9	+2.1	+2.0
Export deflator	+1.8	+1.7	+2.1	+2.1	+2.0
Changes in price competitiveness	+0.1	−1.1	+0.8	−0.1	−0.1
Import demand on Austria's export markets (real)	+5.7	+4.0	+4.2	+4.2	+3.8
Austrian exports of goods and services (real)	+4.6	+4.2	+3.8	+4.0	+3.7
Austrian market share	−1.2	+0.2	−0.4	−0.3	−0.1
Imports					
International competitor prices on the Austrian market	+1.4	+0.6	+2.3	+1.9	+2.0
Import deflator	+2.7	+2.4	+2.2	+2.1	+2.1
Austrian imports of goods and services (real)	+4.4	+2.7	+3.6	+3.8	+3.4
Terms of Trade	−0.9	−0.7	−0.1	+0.0	−0.1
	Percentage points of real GDP				
Contribution of net exports to GDP growth	+0.3	+0.9	+0.3	+0.3	+0.3
	% of nominal GDP				
Export ratio	53.7	54.5	55.5	56.8	58.1
Import ratio	50.1	50.4	51.3	52.4	53.6

Source: 2017: WIFO, Eurosystem; 2018 to 2021: OeNB December 2018 outlook.

Table 4

Austria's current account

	2017	2018	2019	2020	2021
	% of nominal GDP				
Balance of trade	3.0	3.4	3.5	3.6	3.8
Balance of goods	0.2	0.5	0.7	0.9	1.0
Balance of services	2.7	2.9	2.8	2.8	2.8
Balance of primary income[1]	−0.3	−0.3	−0.2	−0.2	−0.2
Balance of secondary income[2]	−0.8	−1.0	−0.9	−0.9	−0.9
Current account balance	1.9	2.1	2.4	2.6	2.8

Source: 2017: OeNB; 2018 to 2021: OeNB December 2018 outlook.

[1] *Balance of income (compensation of labor, investment income, etc.).*
[2] *Balance of current transfers.*

slight slowdown notwithstanding, exports will remain a key pillar of growth. Import growth will somewhat lag behind export growth over the forecasting horizon, reflecting above all the declining momentum of equipment investment, which is largely driven by imports.

Austria's trade surplus narrowed from 3.6% of GDP in 2016 to 3.0% 2017. In the first half of 2018, however, contributions from exports once more outpaced the first-half 2017 levels considerably. This improvement was driven above all by goods exports to CESEE economies, Germany, Italy and the Netherlands. For the first time, tourism exports increased to above EUR 10 billion in the first half, thus contributing substantially to the improvement of the balance of trade. As export growth is set to outpace import growth over the forecasting horizon, the trade balance will keep improving. Changes to the balances of primary and secondary income are expected to remain limited. As a result, the current account balance should keep improving in line with the balance of trade.

4.2 Investment cycle gradually nearing completion

Investment activity is currently a key pillar of the Austrian economy. Businesses have, above all, been investing substantially in equipment. Cumulatively, investment in equipment increased by 20% from 2015 to 2017, with growth peaking at 9.7% in 2016. Initially, in 2015, businesses invested in machinery in particular, whereas in 2016 and 2017 transport investment played the key role. This trend appears to have continued in 2018 at a growth rate of 4.1% measured for investment in equipment. This means that the current investment cycle has been exceptionally long and strong compared with previous cycles. It should be noted, however, that the period from 2010 to 2014 had been marked by pronounced investment restraint.

Financing conditions for business investment have remained very favorable so far. Growth of corporate lending by domestic financial institutions accelerated visibly of late, reaching 6.2% in September. In other words, credit growth rates are nearing pre-crisis levels. In the first three quarters of 2018, total corporate debt financing went down, however, as the volume of intra-sector loans and foreign loans went down sharply. At the same time, internal financing was playing an increasing role, supported by strong earnings. The level of corporate indebtedness remained broadly stable, as domestic bank lending has been substituting other forms of corporate finance.

Chart 2

Gross fixed capital formation

Investment growth and contributions to growth

Quarterly change in %, contributions to growth in percentage points
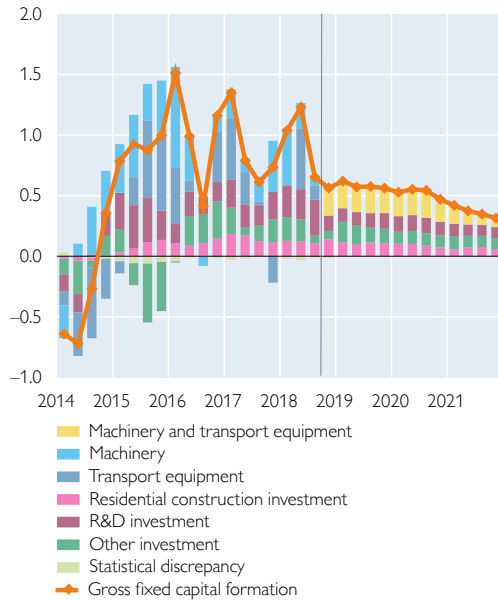
Capacity utilization in manufacturing

- Machinery and transport equipment
- Machinery
- Transport equipment
- Residential construction investment
- R&D investment
- Other investment
- Statistical discrepancy
- Gross fixed capital formation

- Level of capacity utilization (seasonally and working day-adjusted)
- Average since 1996
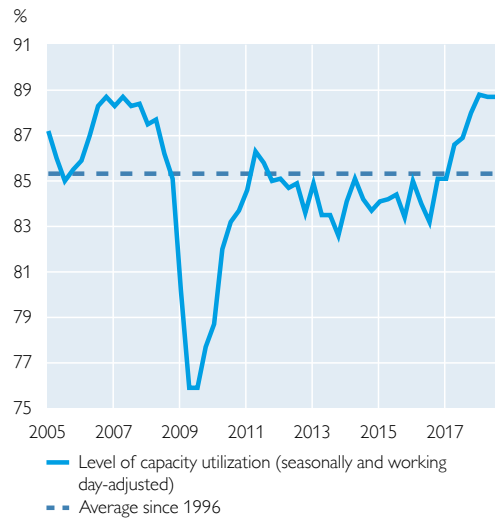
Source: Eurostat, OeNB, European Commission.

Table 5

Investment activity in Austria

	2017	2018	2019	2020	2021
	Annual change in %				
Total gross fixed capital formation (real)	+3.8	+3.5	+2.6	+2.2	+1.7
of which: investment in plant and equipment	+4.8	+4.1	+2.6	+2.3	+1.7
residential construction investment	+3.3	+3.0	+2.8	+2.3	+1.6
nonresidential construction investment and other investment	+3.1	+2.6	+2.2	+1.8	+1.6
investment in research and development	+3.6	+4.4	+2.8	+2.4	+2.0
public sector investment	+2.4	+1.6	+1.6	+2.6	+1.4
private investment	+4.0	+3.8	+2.7	+2.1	+1.8
Contribution to the growth or real gross fixed capital formation	*Percentage points*				
investment in plant and equipment	+1.7	+1.5	+0.9	+0.8	+0.6
residential construction investment	+0.6	+0.5	+0.5	+0.4	+0.3
nonresidential construction investment and other investment	+0.8	+0.6	+0.5	+0.4	+0.4
investment in research and development	+0.8	+0.9	+0.6	+0.5	+0.4
public sector investment	+0.3	+0.2	+0.2	+0.3	+0.2
private investment	+3.5	+3.3	+2.4	+1.9	+1.5
Contribution to real GDP growth	*Percentage points*				
Total gross fixed capital formation	+0.9	+0.8	+0.6	+0.5	+0.4
Changes in inventories	+0.3	+0.0	−0.1	+0.0	+0.0
	% of nominal GDP				
Investment ratio	23.5	23.8	23.9	24.0	24.0

Source: 2017: WIFO; 2018 to 2021: OeNB December 2018 outlook.

Even though the cycle of equipment investment has been ongoing for a very long period, the high level of capacity utilization would imply that the cycle will not come to an abrupt end. Much rather, it is expected to peter out gradually in the years ahead.

Residential construction investment has been growing at a lively pace, at a cumulative growth rate of close to 6% measured for 2016 and 2017. Growth remained strong also in the first half of 2018. The sharp increase in building permits issued in 2016 (9.1%) and 2017 (6.8%) – which typically lead building completions two years ahead – suggests continued strong growth of residential construction investments in the second half of 2018. For 2018 as a whole, residential construction investment is projected to grow by 3.0%, and the outlook for 2019 is only slightly less strong. Looking further ahead, the declining trend in building permits registered in the first half of 2018 signals weaker construction activity for 2020. As the volume of new housing exceeds demographically declining demand already in 2018 and 2019, demand pressures on the housing market are going to decrease gradually. The civil engineering industry benefited from numerous public infrastructure measures in 2018 and will continue to do so in the years ahead.

4.3 Private consumption to remain a major growth pillar over the forecasting horizon

Private consumption has been a key pillar of the Austrian economy. The tax reform of 2016 led to a considerable increase in disposable household income. Together with strong employment growth, these reform measures helped overcome a protracted weakness of consumption. In 2016 and 2017, private consumption increased by 3.1% on balance. In 2018, household income benefited from a further acceleration of employment growth and higher wage settlements than in 2017. On balance, the wage bill will rise by 4.7% in 2018, an increase last seen in 2008. The

Chart 3

Private consumption

Contributions to growth of real disposable net household income

Annual change in %, contributions to growth in percentage points
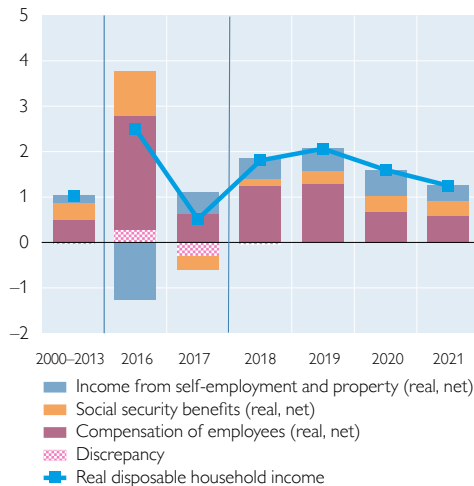
Disposable household income, private consumption and saving ratio

Annual change in %   *% of disposable household income*

■ Income from self-employment and property (real, net)
■ Social security benefits (real, net)
■ Compensation of employees (real, net)
▦ Discrepancy
■ Real disposable household income

■ Private consumption (left-hand scale)
■ Real disposable household income (left-hand scale)
■ Saving ratio (right-hand scale)

Source: WIFO, Statistics Austria, OeNB.
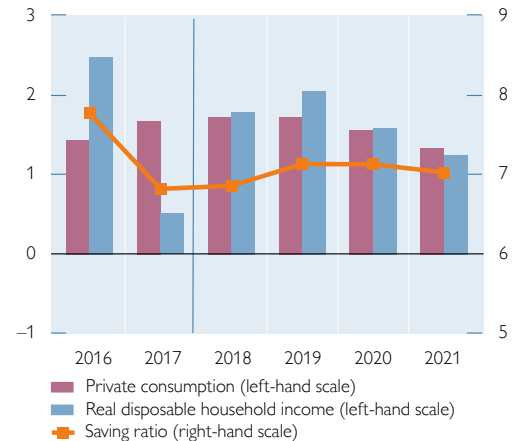
good economic situation has also supported net mixed income accruing to self-employed households.

In the first two quarters of 2018, quarterly consumption growth remained stable at close to ½%. The prospect of higher prices for new vehicles given higher motor vehicle registration taxation, following a tightening of emission tests in September, had increased demand – above all for cars with high CO_2 emissions – in the run-up to the change. Consequently, the number of new vehicle registrations dropped sharply in September and October, thus also dampening consumption growth in the second half of 2018. Since almost all vehicles bought in Austria are imported, these developments have remained without any impact on domestic output. Real consumption is expected to grow by 1.7% in 2018 as a whole.

New tax relief measures for families with children (Familienbonus Plus) will take effect in January 2019, replacing the current regime of child tax exemption and child care cost deductibility. The new tax relief can be used as a monthly tax credit during payroll accounting, or ex post in the process of tax assessment for employees. Therefore, the full effect of the higher tax relief – EUR 1.2 billion (0.5% of household income) – will not materialize until 2020. In 2019, the effect is estimated to be EUR 800 million.

Together with higher wage increases, the new family tax relief broadly offsets the effect of the gradual decline in employment growth on household income. Hence, private consumption is set to keep growing at solid rates of 1.7% in 2019 and 1.6% in 2020, before decelerating to 1.3% in 2021 amid the expected downturn of the economy.

Box 1

Public finances from 2018 to 2021[1]

The general government budget is projected to be balanced in 2018. The marked improvement by 0.8 percentage points in the current year is attributable to the continued strong economy and a further decrease in debt servicing costs. These two effects even more than offset the loosening of fiscal policy in 2018: On the expenditure side, expansionary effects have resulted from increasing labor market subsidies (even though the new government suspended several measures), raising the number of federal government employees, abolishing public long-term care providers' recourse to patients' assets as well as the decoupling of long-term unemployment benefits from partners' incomes. These effects have been reinforced by revenue-side measures: Contributions to the family burden equalization fund have been lowered from 4.1% to 3.9%, and unemployment insurance contributions have been reduced for low-income earners. Moreover, the VAT rate on hotel overnight stays, which had been raised to 13% in April 2016, was cut back to 10%.

The expansionary stance of fiscal policy will be retained in 2019. The key revenue-side measure is the introduction of a higher tax relief for families with children (Familienbonus Plus), which will depress wage tax revenues in 2019 and income tax revenues in 2020. Moreover, the rate for contributions to the accident insurance scheme, which used to be 1.3%, will be lowered to 1.2%. On the expenditure side, spending decreases (related to the phasing out of previous temporary spending increases and cuts of child benefits for children living abroad) will be offset by spending increases (higher research subsidies). Thanks to the continued favorable cyclical and interest rate conditions, the budget balance is nonetheless expected to keep improving slightly both in 2019 and in the years ahead. Based on a no-policy-change assumption, the general government budget deficit will therefore turn into a surplus in 2019 – conditions last seen in the early 1970s.[2] The impact of tax reform measures announced by the government has not been factored in given the no-policy-change assumption.

The absolute level of indebtedness and hence the debt-to-GDP ratio will go down visibly over the forecasting horizon. In Austria, multi-annual nominal reductions of government debt levels have not been seen since the 1970s. The key underlying factors include successive budget surpluses (following a balanced budget in 2018), the continued reduction of the debt levels of public wind-down vehicles through the sale of assets and the liquidation of cash reserves as well as high nominal GDP growth (as a driver of the debt ratio decrease). By 2021, the debt ratio will stand at around 65% of GDP and thus return to pre-crisis levels.

Already in 2018, the structural budget balance (i.e. following adjustments for cyclical and one-off effects) will correspond to the medium-term objective of –0.5% of GDP (i.e. the country-specific target for the structural deficit agreed with the European Commission). The improvement of 0.3 percentage points compared with the figure for 2017 is largely attributable to the decrease in debt servicing costs. These costs are going down over the forecasting horizon as the absolute debt levels are going down and as interest rates for maturing government debt continue to visibly exceed the interest rate level prevailing over the forecasting horizon. The structural budget balance is set to improve further in 2019 and 2020; based on a no-policy-change assumption, in 2020 Austria might even record a structural budget surplus.

[1] *Author: Doris Prammer, Oesterreichische Nationalbank, Economic Analysis Division, doris.prammer@oenb.at.*

[2] *There is a lack of broadly comparable time series for government fiscal balance and debt ratios for the period preceding the early 1970s.*

Table 6

Determinants of nominal household income and private consumption growth in Austria

	2017	2018	2019	2020	2021
Annual change in %					
Payroll employment	+1.9	+2.2	+1.4	+1.1	+1.0
Wages and salaries per employee	+1.5	+2.5	+2.7	+2.5	+2.1
Compensation of employees	+3.5	+4.7	+4.1	+3.6	+3.1
Property income	+2.5	+6.3	+5.1	+4.6	+4.4
Self-employment income and operating surpluses (net)	+4.6	+3.9	+3.6	+3.6	+3.1
Contribution to household disposable income growth in percentage points					
Compensation of employees	+2.9	+4.0	+3.6	+3.1	+2.7
Property income	+0.3	+0.7	+0.6	+0.5	+0.5
Self-employment income and operating surpluses (net)	+0.8	+0.7	+0.6	+0.6	+0.5
Net transfers less direct taxes[1]	−1.6	−1.6	−0.7	−0.7	−0.7
Annual change in %					
Disposable household income (nominal)	+2.2	+3.9	+4.1	+3.5	+3.1
Consumption deflator	+1.7	+2.0	+2.0	+1.9	+1.8
Disposable household income (real)	+0.5	+1.8	+2.1	+1.6	+1.3
Private consumption (real)	+1.7	+1.7	+1.7	+1.6	+1.3
% of household disposable income growth					
Saving ratio	6.8	6.9	7.1	7.1	7.0
% of nominal GDP					
Consumption ratio	52.0	51.7	51.5	51.4	51.3

Source: 2017: WIFO, Statistics Austria; 2018 to 2021: OeNB December 2018 outlook.

[1] *Negative values indicate an increase in (negative) net transfers less direct taxes; positive values indicate a decrease.*

5 Unemployment rate expected to decline moderately, to 4.5%, until 2021

When the Austrian economy started to recover in 2016, labor market conditions started to improve as well. Payroll employment levels and above all the number of hours worked, which had been stagnating in previous years, started to climb visibly. Employment growth peaked in early 2018. The annual growth rates for the number of jobs and the number of hours worked reached close to 2¼% in the first quarter of 2018. However, with the economic upturn having peaked in late 2017, the pace of labor market expansion was set to decrease as well, with a typical lag of some two quarters. The employee leasing market, which tends to lead general employment trends, has already seen substantial change. The growth rate of leased employees has dropped by more than half since late 2017. Given that employee leasing is most widespread in the manufacturing industry, declining demand for employee leasing also signals a weakening of the boom in the manufacturing industry – which is an industry characterized by a high ratio of full-time jobs and above-average earnings. Due to the strong momentum at the beginning of the year, payroll employment numbers are expected to increase by 2.2% in 2018 as a whole, which is an increase by as much as 0.3 percentage points on the year. Labor volume growth is projected to reach 2.2% or remain broadly stable (2017: +2.3%). However, the growth rates observed in the course of 2018 have already been signaling weaker employment growth, which will translate into a visibly lower growth path for the remainder of the forecasting horizon in line with expectations for GDP growth. Payroll employment levels are projected to increase by 1.4% in 2019, by 1.1% in 2020 and by 1.0% in 2021, with the number of hours worked increasing by 0.1 percentage point less each year. Moreover, some job losses are in the pipeline as hiring subsidies focusing on reactivating the long-term unemployed (Aktion 20,000) are due to be withdrawn until mid-2019.

The high employment momentum caused Austria's unemployment rate (Eurostat definition) to drop from 6.0% in 2016 to 5.5% in 2017. In 2018 and beyond, the unemployment rate is expected to shrink further – to 4.9% – in 2018.

Further declines in unemployment are expected to remain moderate over the remaining forecasting horizon. The unemployment rate is expected to sink to 4.7% in 2019, remain at 4.7% in 2020 and drop further to 4.5% in 2021. Together with the

Table 7

Labor market development in Austria

	2017	2018	2019	2020	2021
	Annual change in %				
Total employment (heads)	+1.7	+1.6	+1.1	+1.0	+0.9
Payroll employment	+1.9	+2.2	+1.4	+1.1	+1.0
of which: public sector employees	+1.2	+0.7	+0.3	−0.1	+0.0
Self-employment	+0.3	−1.9	−0.8	+0.0	+0.2
Total hours worked	+2.0	+1.7	+1.0	+0.8	+0.8
Payroll employment	+2.3	+2.2	+1.3	+1.0	+0.9
Self-employment	+0.4	−0.7	−0.2	+0.0	+0.2
Labor supply	+1.2	+1.1	+0.9	+0.9	+0.7
Registered unemployment	−7.7	−8.5	−2.9	−0.2	−2.9
	% of labor supply				
Unemployment rate (Eurostat definition)	5.5	4.9	4.7	4.7	4.5

Source: 2017: WIFO, Statstics Austria; 2018 to 2021: OeNB December 2018 outlook.

Chart 4

Structure of labor supply

Contributions to the change in labor supply (resident population)[1]

Change in thousands

Other (e.g. cyclical component, in-commuters)
Change in labor force participation rates[1]
Population change through migration (resident population)
Population change excluding migration[1]
Labor supply data used in the outlook (national accounts definition)
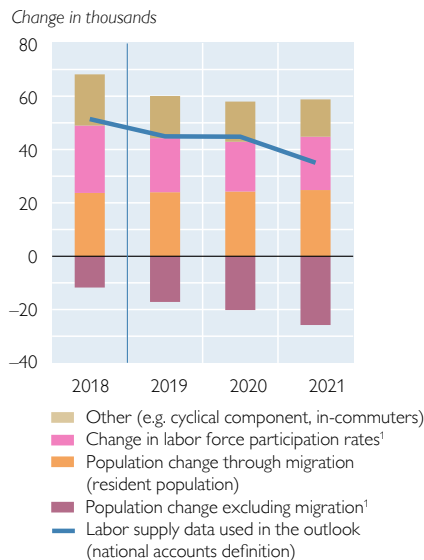
Labor force participation (resident population)[1]

%

Men aged 15−24
Men aged 25−54
Men aged 55−64
Population aged 15−64
Women aged 15−24
Women aged 25−54
Women aged 55−64

Source: Statistics Austria, OeNB.

[1] Resident population: Domestic households according to microcensus data; forecast extrapolated from trend labor force participation rates and the population forecast of Statistics Austria (baseline scenario, November 2018). The labor supply used in the forecast (national accounts definition) may differ from the microcensus-based equivalent.

maturing economic boom, continued strong labor supply growth is working against a stronger easing of labor market conditions. On average, up to 45,000 individuals will be actively joining the Austrian labor market per year in the period from 2018 to 2021 (see chart 4).[2] Labor supply growth will be fueled by migration, the rising labor force participation rate of older workers and the procyclical response of labor market supply (idle labor capacity). Net migration will hover around close to 25,000 individuals per year. Another 20,000 workers or more are attributable to rising labor force participation rates among older employees in particular. In addition, the activation of idle labor capacity and in-commuters are expected to increase labor supply by close to 15,000 individuals per year. At the same time, demographic change (excluding migration) is going to lower labor supply by 15,000 individuals on average per year over the forecasting horizon. This impact will be pa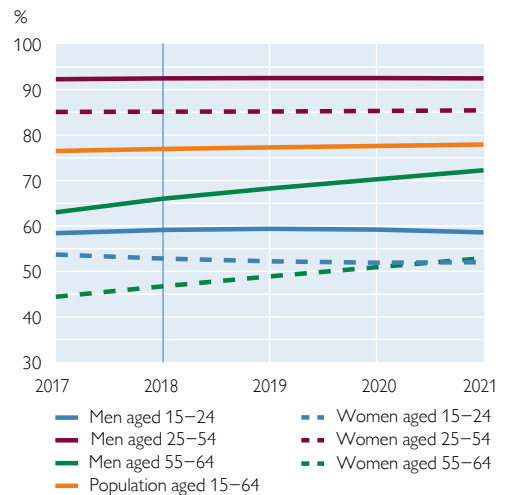rticularly pronounced in 2021, with a minus of 25,000, which explains why the employment rate is forecast to drop by 0.2 percentage points despite the weakening economy.

[2] The change in labor supply may be broken down into a population effect (change in population with unchanged participation rates) and a participation effect (change in participation rates with unchanged population figures). The population effect, in turn, may be decomposed into a change in population excluding immigration (based on population statistics underlying the Statistics Austria forecast excluding migrations) and a change in population including immigration (Statistics Austria − baseline forecast minus forecast excluding migration effects). As to immigration, a distinction may be made between "traditional" immigration and immigration motivated by a search for refuge.

6 Austrian inflation to be dampened by oil prices and the maturing economic boom from 2019

Inflation rates went up slightly in Austria during the first three quarters of 2018. Following 2.0% in the first quarter, average HICP inflation gradually climbed to 2.2% in the third quarter. For 2018 as a whole, inflation is expected to come to 2.1%, At the same time, core inflation (HICP excluding energy) decreased from 2.1% in the first quarter to 1.8% in the third quarter of 2018, which is also expected to be the full-year average. The countertrend of core inflation is driven by the contribution to inflation of the energy component, given the rise in commodity prices.

In the first half of 2019, HICP inflation is expected to remain broadly stable at 2.2%, before receding moderately in the second half. This pattern essentially reflects changes in energy prices. The inflation rate of the energy component of the HICP will decline markedly, reflecting the expected drop in oil prices and the base effect related to the latest price increases after the summer of 2019. Domestic drivers of inflation are not going to offset the commodity price-driven decline of inflation in full. Domestic demand and labor cost growth will lead to rising inflation ratios in the wage-intensive service sector and for industrial goods excluding energy. In 2019 as a whole, HICP inflation will run to 2.1 %. Thereafter, it is projected to decline slightly to 2.0 % in 2020 and 1.9 % in 2021.

HICP inflation excluding energy will be driven by the growth of unit labor costs as well as cyclical developments and exceed headline inflation at 2.2% in both 2019 and 2020, and thereafter at 2.0% in 2021.

Austria's inflation differential against Germany as well as the euro area has narrowed in the course of 2018. In October, Austria's inflation rate totaled 2.4%, thus being on a par with inflation in Germany and some 0.2 percentage points

Table 8

Price, cost, productivity and profit indicators for Austria

	2017	2018	2019	2020	2021
Annual change in %					
Harmonised Index of Consumer Prices (HICP)	+2.2	+2.1	+2.1	+2.0	+1.9
HICP energy	+2.9	+5.0	+0.7	−0.3	+0.1
HICP excluding energy	+2.1	+1.8	+2.2	+2.2	+2.0
Private consumption expenditure (PCE) deflator	+1.7	+2.0	+2.0	+1.9	+1.8
Investment deflator	+1.6	+2.1	+1.8	+1.8	+1.7
Import deflator	+2.7	+2.4	+2.2	+2.1	+2.1
Export deflator	+1.8	+1.7	+2.1	+2.1	+2.0
Terms of trade	−0.9	−0.7	−0.1	+0.0	−0.1
GDP deflator at factor cost	+1.2	+1.7	+1.9	+1.9	+1.7
Collective wage and salary settlements	+1.5	+2.6	+2.9	+2.7	+2.4
Compensation per employee	+1.5	+2.5	+2.7	+2.5	+2.1
Hourly compensation per employee	+1.1	+2.4	+2.8	+2.6	+2.2
Labor productivity per employee	+1.0	+1.0	+0.8	+0.9	+0.8
Labor productivity per hour	+0.7	+1.0	+0.9	+1.0	+0.9
Unit labor costs	+0.5	+1.4	+1.8	+1.6	+1.4
Profit margins[1]	+0.7	+0.2	+0.1	+0.3	+0.3

Source: 2017: WIFO, Statistics Austria; 2018 to 2021: OeNB December 2018 outlook.

[1] *GDP deflator divided by unit labor costs.*

above euro area inflation. Higher inflation in the Austrian service sector will keep Austria's inflation differential against Germany and the euro area average positive in 2019 and 2020, but the differential will be visibly smaller than in previous years. By 2021 the inflation gap will have closed more or less in both instances. Drivers include the fact that Germany has been suffering a higher labor shortage than Austria, which leads to higher wage settlements than in Austria.

Wages subject to collective agreements are set to go up by 2.6% in 2018. Given a projected HICP inflation rate of 2.1 %, this implies small real wage gains of 0.5%, which will, however, offset only some of the losses registered in 2017 (−0.7%).

The wage rounds for 2019 were off to a bumpy start. In view of the maturing economic boom, continued high inflation and stable productivity growth, the negotiations closed with a deal of +3.5% for collective wages for the metals industry and +2.8% for public sector employees. On average, collective wages are expected to rise by 2.9% – i.e. by 0.7 percentage points above the HICP inflation rate for 2018, which served as one of the starting points of the negotiations. This difference is slightly below the growth expectations for hourly productivity of 0.9% in 2019. Wage settlements are expected to be above the inflation rate in 2020 and 2021 too. Thus, gross real wage gains will remain positive over the entire forecasting horizon, but below the level of the productivity gains. Given the fact that the unemployment rate continues to be above historical averages, the wage share of GDP will drop slightly over the forecasting horizon. Upside risks to the wage projections stem from skills shortages reported by more and more companies.

The wage drift – the difference between the collectively agreed increase in wages and the increase in actual wages – will be negative in the forecasting period from 2019 to 2021. The maturing boom in manufacturing and assumptions of a rising ratio of part-time employees have a stronger impact than rising overpayments in sectors with labor shortages.

Table 9

Compensation of employees

	2017	2018	2019	2020	2021
	Annual change in %				
Gross wages and salaries[1]					
In nominal terms	+3.5	+4.7	+4.1	+3.6	+3.1
Consumption deflator	+1.7	+2.0	+2.0	+1.9	+1.8
In real terms	+1.8	+2.6	+2.1	+1.7	+1.3
Collectively agreed wages and salaries[1]	+1.5	+2.6	+2.9	+2.7	+2.4
Wage drift	+0.0	−0.1	−0.2	−0.2	−0.2
Compensation per employee					
Gross[2] compensation (nominal)	+1.5	+2.5	+2.7	+2.5	+2.1
Gross compensation (real)	−0.2	+0.4	+0.7	+0.6	+0.3
Compensation per hour worked					
Gross compensation (nominal)	+1.1	+2.4	+2.8	+2.6	+2.2
Gross compensation (real)	−0.6	+0.4	+0.8	+0.7	+0.4
	% of nominal GDP				
Wage share	47.4	47.5	47.6	47.5	47.4

Source: 2017: WIFO, Statistics Austria; 2018 to 2021: OeNB December 2018 outlook.
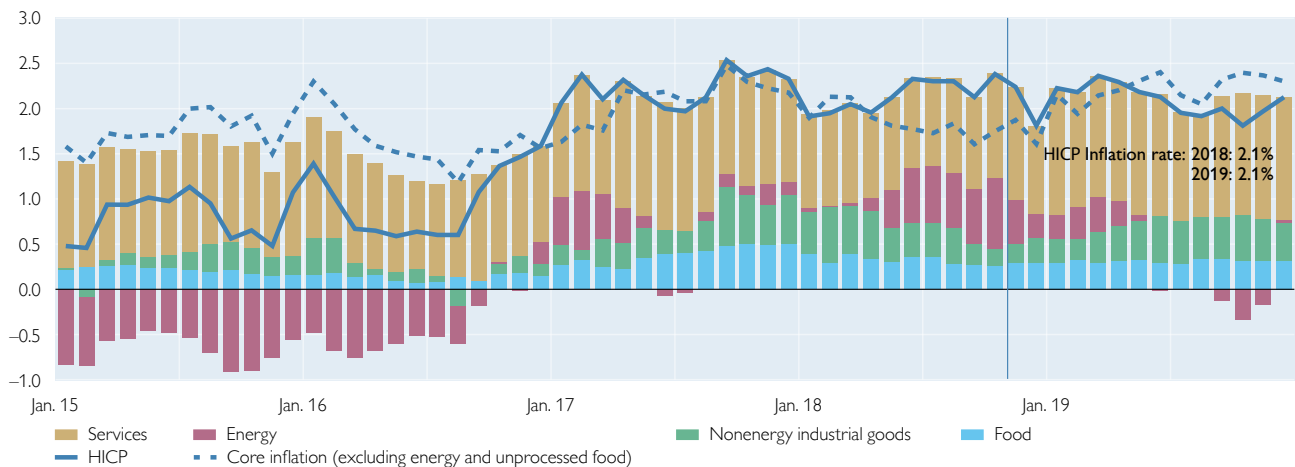
[1] Overall economy.
[2] Including employers' social security contributions.

Chart 5

Contributions to Austrian HICP inflation and core inflation

Annual change in % (inflation) and percentage points (contributions to inflation)   *Forecast: November 2018 to December 2019*

HICP Inflation rate: 2018: 2.1%
2019: 2.1%

Services ■ Energy ■ Nonenergy industrial goods ■ Food ■
HICP — Core inflation (excluding energy and unprocessed food) - - -

Source: Statistics Austria, OeNB.

7 Increased external forecast risks

The *external risks* to the growth outlook are tilted toward the downside. The latest economic slowdown in the euro area, and in Germany in particular, is considered to be a temporary phenomenon in the context of new vehicle emission tests. If the constraints should not remain limited to the third quarter of 2018, as assumed, the short-term outlook for euro area growth would have to be revised downward. In addition, a number of political risk factors come into play, such as the future stance of U.S. trade policies. A further escalation of the trade dispute with China cannot be ruled out, and the same holds true for renewed trade tensions with the EU. In Europe, uncertainty prevails with regard to the economic policy course of the Italian government, which may lead to a conflict with the European Commission, as well as with regard to the Brexit negotiations.

Domestic risks, in contrast, appear broadly balanced in sum. Businesses have been increasingly reporting skills shortages as a production-limiting factor, as is also evident from the growing list of shortage occupations. This phenomenon is not limited to Austria, though, but a common phenomenon experienced by many European trading partners. In other words, it may become increasingly difficult to offset labor shortages with labor migration. Furthermore, the current projections do not reflect the comprehensive tax reform package that the government has announced to adopt in 2020; these measures constitute upside risks to the economic outlook.

Austrian export growth has been very robust in the year to date, notwithstanding the economic doldrums in Germany, Austria's key export market. However, it cannot be ruled out that lagged effects of the temporary production setback in the German automobile market may constitute a bigger-than-expected burden for the Austrian export industry at the start of the forecasting horizon.

Investment activities also continue to be fraught with major uncertainty. On the one hand, as assumed in the projections, the exceptional length and strength of the current investment cycle would imply that the cycle is nearing completion. On the

other hand, companies have been reporting above-average capacity utilization, thus signaling continued need for extension investment. Finally, residential construction investment is also subject to upside risks, given the acute need for housing and continued favorable financing conditions.

The risks surrounding the outlook for *inflation* are also tilted toward the upside. Crude oil prices have been very volatile as of late, dropping sharply in recent weeks. The path for oil prices implied by forward markets might turn out to have therefore been underestimated, as has happened occasionally in the past. Over the medium term, upside risks to wage developments stem from the incipient labor shortages.

8 Downward revision of the outlook for 2018 and 2019

The external environment has deteriorated slightly since the OeNB June 2018 outlook. While global economic activity continues to be broadly stable, international trade is set to weaken. The trade conflict between the U.S.A. and China will dampen international trade throughout the forecasting horizon, without having immediate adverse repercussions for Austria – provided that the conflict remains geographically limited. Mechanically speaking, the lower import growth of the U.S.A. – and to a lesser extent – of China leads to a slight downward revision of growth expectations for Austria's export markets compared with the June outlook, but at the same time the imposed import tariffs stand to improve the price competitiveness of Austrian exporters. However, since the exceptionally strong import growth in some CESEE countries had to be revised downward somewhat, the projected contributions of export demand to GDP growth in 2019 turned out to be 0.2 percentage points of GDP lower than in the June 2018 outlook.

The nominal figures remained broadly unchanged compared with the June 2018 outlook. Markets currently expect oil prices to reach USD 67.5 per barrel Brent in 2019, about USD 6 less than the level projected in June. However, the depreciation of the euro against the U.S. dollar by close to 5 cent weakens the decline of oil prices in euro to less than EUR 3. Short-term and long-term interest rates were again revised downward slightly, thus supporting investment growth.

On balance, the revised assumptions left the growth projections for 2019 unchanged while yielding a slight upward revision for 2020.

Table 11 provides a detailed overview of the reasons for which revisions were made to the outlook. Apart from the impact of changed external assumptions, the revisions are attributable to the impact of new data and a residual. The influence of new data includes the effects of the revisions of both the historical data already available at the time of the OeNB's June 2018 economic outlook (i.e. data up to the first quarter of 2018) and the forecasting errors of the previous outlook for the periods now published for the first time (i.e. data for the second and third quarters of 2018). The residual includes new expert assessments regarding domestic variables, such as government consumption or wage settlements, as well as any changes to the forecasting model.

For 2018, GDP growth has been revised downward by 0.4 percentage points. The bulk of this change (0.3 percentage points) is attributable to revisions of historical data. More current national accounts data that were not yet available at the time the June 2018 outlook was compiled provide a new look at the economy. According to the new data, growth dynamics appear to have been visibly stronger

Table 10

Change in external economic conditions since the June 2018 outlook

	December 2018				June 2018			Difference		
	2018	2019	2020	2021	2018	2019	2020	2018	2019	2020
	Annual change in %									
Growth of Austria's export markets	+4.0	+4.2	+4.2	+3.8	+4.7	+4.8	+4.1	−0.7	−0.6	+0.1
Competitor prices on Austria's export markets	+0.6	+2.9	+2.1	+2.0	+0.4	+2.3	+2.0	+0.2	+0.6	+0.1
Competitor prices on Austria's import markets	+0.6	+2.3	+1.9	+2.0	+0.6	+2.1	+1.8	+0.0	+0.2	+0.1
	USD per barrel (Brent)									
Oil price	71.8	67.5	66.8	65.9	74.5	73.5	68.7	−2.7	−6.0	−1.9
	Annual change in %									
Nominal effective exchange rate (exports)	−2.2	+0.1	+0.0	+0.0	−1.9	+0.0	+0.0	−0.3	+0.1	+0.0
Nominal effective exchange rate (imports)	−1.3	+0.0	+0.0	+0.0	−1.1	+0.0	+0.0	−0.2	+0.0	+0.0
	%									
Three-month interest rate	−0.3	−0.3	0.0	0.3	−0.3	−0.2	0.2	+0.0	−0.1	−0.2
Long-term interest rate	0.7	0.9	1.1	1.3	0.8	1.0	1.3	−0.1	−0.1	−0.2
	Annual change in %									
U.S. GDP (real)	+2.9	+2.5	+2.0	+1.8	+2.8	+2.5	+2.1	+0.1	+0.0	−0.1
	USD/EUR									
USD/EUR exchange rate	1.18	1.14	1.14	1.14	1.20	1.18	1.18	−0.02	−0.04	−0.04

Source: Eurosystem.

Table 11

Breakdown of revisions to the outlook

	GDP			HICP		
	2018	2019	2020	2018	2019	2020
	Annual change in %					
December 2018 outlook	+2.7	+2.0	+1.9	+2.1	+2.1	+2.0
June 2018 outlook	+3.1	+2.1	+1.7	+2.2	+2.0	+1.9
Difference	−0.4	−0.1	+0.2	−0.1	+0.1	+0.1
Caused by:	*Percentage points*					
External assumptions	+0.0	+0.0	+0.2	−0.1	+0.0	+0.0
New data[1]	−0.4	−0.1	+0.0	+0.0	x	x
of which: revisions to historical data up to Q1 18	−0.3	x	x	+0.0	x	x
projection errors for Q2 17 and Q3 18	−0.1	−0.1	x	+0.0	+0.0	+0.0
Other changes[2]	+0.0	+0.0	+0.0	+0.0	+0.1	+0.1

Source: OeNB December 2018 and June 2018 outlooks.

[1] „New data" refer to data on GDP and/or inflation that have become available since the publication of the preceding OeNB outlook.

[2] Different assumptions about trends in domestic variables such as wages, government consumption, effects of tax measures, other changes in assessments and model changes.

Note: Due to rounding, the sum of growth contributions subject to individual revisions may differ from the total revision.

at the start of the current cycle, in 2016, but weaker in 2017 and 2018 than initially shown. However, the underlying strength of the economy in the period from 2016 to 2018 remains unaffected by these revisions. Moreover, the projections for GDP growth for the second and the third quarters of 2018 turned out to be too optimistic, which explains 0.1 percentage point of the revision for 2018. A carry-over effect stemming from the weaker growth rates in the second and third quarters of 2018

add another 0.1 percentage point to the downward revision of GDP growth by 0.1 percentage point for 2019. In sum, the changes in external conditions have had a neutral impact on the growth projections for 2019 whereas the forecast for 2020 has been revised upward by 0.2 percentage points.

The projections for HICP inflation have remained broadly unchanged compared with the June 2018 outlook. The June figure was revised downward by 0.1 percentage point for 2018, essentially on account of the lower oil prices, which impacted

Table 12

Comparison of the OeNB June 2018 outlook and the December 2018 outlook

	Actual figures	December 2018			Revision since December 2018 outlook		
	2017	2018	2019	2020	2018	2019	2020
Economic activity	*Annual change in % (real)*						
Gross domestic product (GDP)	+2.7	+2.7	+2.0	+1.9	−0.4	−0.1	+0.2
Private consumption	+1.7	+1.7	+1.7	+1.6	+0.2	+0.3	+0.3
Government consumption	+1.5	+1.8	+1.5	+1.2	−0.1	+0.1	+0.0
Gross fixed capital formation	+3.8	+3.5	+2.6	+2.2	+0.0	+0.3	+0.2
Exports of goods and services	+4.6	+4.2	+3.8	+4.0	−0.7	−0.4	+0.1
Imports of goods and services	+4.4	+2.7	+3.6	+3.8	−1.1	+0.0	+0.2
	% of nominal GDP						
Current account balance	+1.9	+2.1	+2.4	+2.6	−0.2	+0.0	−0.1
Contribution to real GDP growth	*Percentage points*						
Private consumption	+0.9	+0.9	+0.9	+0.8	+0.1	+0.2	+0.2
Government consumption	+0.3	+0.3	+0.3	+0.2	−0.1	+0.0	+0.0
Gross fixed capital formation	+0.9	+0.8	+0.6	+0.5	+0.0	+0.1	+0.0
Domestic demand (excluding changes in inventories)	+2.0	+2.1	+1.8	+1.6	+0.1	+0.3	+0.3
Net exports	+0.3	+0.9	+0.3	+0.3	+0.1	−0.2	−0.1
Changes in inventories (including statistical discrepancy)	+0.4	−0.3	−0.1	+0.0	−0.7	−0.1	+0.0
Prices	*Annual change in %*						
Harmonised Index of Consumer Prices (HICP)	+2.2	+2.1	+2.1	+2.0	−0.1	+0.1	+0.1
Private consumption expenditure (PCE) deflator	+1.7	+2.0	+2.0	+1.9	−0.1	+0.1	+0.0
GDP deflator	+1.3	+1.7	+2.0	+1.9	−0.2	+0.0	+0.0
Unit labor costs (whole economy)	+0.5	+1.4	+1.8	+1.6	−0.1	+0.3	+0.2
Compensation per employee (at current prices)	+1.5	+2.5	+2.7	+2.5	−0.2	+0.3	+0.3
Compensation per hour worked (at current prices)	+1.1	+2.4	+2.8	+2.6	−0.1	+0.4	+0.3
Import prices	+2.7	+2.4	+2.2	+2.1	+0.5	+0.1	+0.0
Export prices	+1.8	+1.7	+2.1	+2.1	+0.1	+0.0	+0.1
Terms of trade	−0.9	−0.7	−0.1	+0.0	−0.4	−0.1	+0.0
Income and savings							
Real disposable household income	+0.5	+1.8	+2.1	+1.6	+0.2	+0.4	+0.3
	% of nominal disposable household income						
Saving ratio	6.8	6.9	7.1	7.1	+0.4	+0.5	+0.5
Labor market	*Annual change in %*						
Payroll employment	+1.9	+2.2	+1.4	+1.1	+0.0	+0.0	+0.0
Hours worked (payroll employment)	+2.3	+2.2	+1.3	+1.0	−0.2	+0.0	+0.0
	% of labor supply						
Unemployment rate (Eurostat definition)	5.5	4.9	4.7	4.7	−0.1	−0.2	−0.2
Public finances	*% of nominal GDP*						
Budget balance (Maastricht definition)	−0.8	+0.0	+0.1	+0.4	+0.0	−0.1	+0.0
Government debt	78.3	74.1	70.7	67.5	0.0	0.1	0.0

Source: 2017 (actual figures): WIFO, Statistics Austria, OeNB; OeNB June 2018 and December 2018 outlooks.

above all the energy component of the HICP. In contrast, the inflation projections for 2019 and 2020 were revised upward by 0.1 percentage point each on account of stronger wage growth.

Annex: detailed result tables

Table 13

Demand components (real)
Chained volume data (reference year = 2010)

	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
	EUR million					*Annual change in %*				
Private consumption	167,372	170,272	173,225	175,955	178,317	1.7	1.7	1.7	1.6	1.3
Government consumption	64,187	65,313	66,295	67,097	67,945	1.5	1.8	1.5	1.2	1.3
Gross fixed capital formation	76,987	79,704	81,743	83,543	84,985	3.8	3.5	2.6	2.2	1.7
of which: investment in plant and equipment	27,560	28,691	29,446	30,134	30,645	4.8	4.1	2.6	2.3	1.7
residential construction investment	13,809	14,218	14,610	14,941	15,183	3.3	3.0	2.8	2.3	1.6
nonresidential construction investment and other investment	19,456	19,956	20,390	20,756	21,095	3.1	2.6	2.2	1.8	1.6
Changes in inventories (including statistical discrepancy)	6,041	4,991	4,652	4,643	4,659					
Domestic demand	314,586	320,280	325,915	331,238	335,906	2.6	1.8	1.8	1.6	1.4
Exports of goods and services	188,355	196,251	203,687	211,806	219,612	4.6	4.2	3.8	4.0	3.7
Imports of goods and services	175,093	179,895	186,331	193,415	200,078	4.4	2.7	3.6	3.8	3.4
Net exports	13,262	16,355	17,355	18,391	19,534					
Gross domestic product	327,847	336,635	343,270	349,628	355,440	2.7	2.7	2.0	1.9	1.7

Source: 2017: Eurostat; 2018 to 2021: OeNB December 2018 outlook.

Table 14

Demand components (nominal)

	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
	EUR million					*Annual change in %*				
Private consumption	192,682	200,035	207,528	214,781	221,650	+3.4	+3.8	+3.7	+3.5	+3.2
Government consumption	72,330	75,202	78,004	80,551	83,096	+3.0	+4.0	+3.7	+3.3	+3.2
Gross fixed capital formation	87,185	92,204	96,273	100,128	103,601	+5.5	+5.8	+4.4	+4.0	+3.5
Changes in inventories (including statistical discrepancy)	5,091	4,073	4,283	4,254	4,250	×	×	×	×	×
Domestic demand	357,289	371,513	386,088	399,713	412,597	+4.3	+4.0	+3.9	+3.5	+3.2
Exports of goods and services	199,215	211,010	223,607	237,501	251,286	+6.4	+5.9	+6.0	+6.2	+5.8
Imports of goods and services	185,720	195,328	206,818	219,219	231,570	+7.2	+5.2	+5.9	+6.0	+5.6
Net exports	13,494	15,682	16,788	18,283	19,716	×	×	×	×	×
Gross domestic product	370,783	387,195	402,876	417,996	432,313	+4.1	+4.4	+4.0	+3.8	+3.4

Source: 2017: Eurostat; 2018 to 2021: OeNB December 2018 outlook.

Table 15

Demand components (deflators)

	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
	2010 = 100					Annual change in %				
Private consumption	115.1	117.5	119.8	122.1	124.3	+1.7	+2.0	+2.0	+1.9	+1.8
Government consumption	112.7	115.1	117.7	120.0	122.3	+1.5	+2.2	+2.2	+2.0	+1.9
Gross fixed capital formation	113.2	115.7	117.8	119.8	121.9	+1.6	+2.1	+1.8	+1.8	+1.7
Domestic demand (excluding changes in inventories)	114.1	116.5	118.8	121.1	123.3	+1.6	+2.1	+2.0	+1.9	+1.8
Exports of goods and services	105.8	107.5	109.8	112.1	114.4	+1.8	+1.7	+2.1	+2.1	+2.0
Imports of goods and services	106.1	108.6	111.0	113.3	115.7	+2.7	+2.4	+2.2	+2.1	+2.1
Terms of trade	99.7	99.0	98.9	98.9	98.9	−0.9	−0.7	−0.1	+0.0	−0.1
Gross domestic product	113.1	115.0	117.4	119.6	121.6	+1.3	+1.7	+2.0	+1.9	+1.7

Source: 2017: Eurostat; 2018 to 2021: OeNB December 2018 outlook.

Table 16

Labor market

	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
	Thousands					Annual change in %				
Total employment	4,415.3	4,487.9	4,539.1	4,583.8	4,625.0	+1.7	+1.6	+1.1	+1.0	+0.9
of which: private sector	3,672.6	3,739.7	3,788.4	3,833.6	3,874.8	+1.8	+1.8	+1.3	+1.2	+1.1
Payroll employment (national accounts definition)	3,862.2	3,945.5	4,001.2	4,045.8	4,086.4	+1.9	+2.2	+1.4	+1.1	+1.0
	% of labor supply									
Unemployment rate (Eurostat definition)	5.5	4.9	4.7	4.7	4.5	×	×	×	×	×
	EUR per real unit of output x 100									
Unit labor costs (whole economy)[1]	61.3	62.2	63.3	64.3	65.2	+0.5	+1.4	+1.8	+1.6	+1.4
	EUR thousand per employee									
Labor productivity (whole economy)[2]	74.3	75.0	75.6	76.3	76.9	+1.0	+1.0	+0.8	+0.9	+0.8
	EUR thousand									
Compensation per employee (real)[3]	39.5	39.7	40.0	40.2	40.3	−0.2	+0.4	+0.7	+0.6	+0.3
	At current prices in EUR thousand									
Compensation per employee (gross)	45.5	46.6	47.9	49.1	50.1	+1.5	+2.5	+2.7	+2.5	+2.1
	At current prices in EUR million									
Total gross compensation of employees	175,839	184,051	191,624	198,527	204,763	+3.5	+4.7	+4.1	+3.6	+3.1

Source: 2017: Eurostat; 2018 to 2021: OeNB December 2018 outlook.

[1] *Gross wages and salaries divided by real GDP.*
[2] *Real GDP divided by total employment.*
[3] *Gross wages and salaries per employee divided by private consumption expenditure deflator.*

Table 17

Current account

	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
	EUR million					% of nominal GDP				
Balance of trade	11,023.0	13,131.0	14,280.7	15,225.7	16,639.0	3.0	3.4	3.5	3.6	3.8
Balance of goods	871.0	2,013.1	2,910.8	3,722.0	4,375.6	0.2	0.5	0.7	0.9	1.0
Balance of services	10,152.0	11,118.0	11,369.9	11,503.7	12,263.4	2.7	2.9	2.8	2.8	2.8
Balance of primary income	−982.0	−1,319.0	−800.0	−800.0	−800.0	−0.3	−0.3	−0.2	−0.2	−0.2
Balance of secondary income	−2,823.0	−3,790.0	−3,724.0	−3,724.0	−3,724.0	−0.8	−1.0	−0.9	−0.9	−0.9
Current account balance	7,218.0	8,022.0	9,756.7	10,701.7	12,115.0	1.9	2.1	2.4	2.6	2.8

Source: 2017: Eurostat; 2018 to 2021: OeNB December 2018 outlook.

Table 18

Quarterly outlook results

	2018	2019	2020	2021	2018				2019				2020				2021			
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Prices, wages and costs	*Annual change in %*																			
HICP	+2,1	+2,1	+2,0	+1,9	+2,0	+2,1	+2,2	+2,1	+2,3	+2,2	+2,0	+2,0	+1,9	+2,0	+2,1	+1,9	+1,9	+1,9	+1,9	+1,8
HICP excluding energy	+1,8	+2,2	+2,2	+2,0	+2,1	+1,8	+1,7	+1,7	+2,1	+2,3	+2,2	+2,4	+2,1	+2,3	+2,3	+2,1	+2,0	+2,0	+2,1	+2,0
Private consumption expenditure deflator	+2,0	+2,0	+1,9	+1,8	+2,0	+2,1	+2,1	+2,1	+2,0	+2,0	+1,9	+1,9	+1,9	+1,9	+1,9	+1,9	+1,9	+1,8	+1,8	+1,8
Gross fixed capital formation deflator	+2,1	+1,8	+1,8	+1,7	+2,0	+2,2	+2,2	+2,2	+2,0	+1,8	+1,7	+1,7	+1,7	+1,8	+1,8	+1,8	+1,8	+1,7	+1,7	+1,7
GDP deflator	+1,7	+2,0	+1,9	+1,7	+1,4	+1,6	+1,8	+2,1	+2,1	+2,1	+2,1	+1,8	+1,8	+1,8	+1,9	+1,9	+1,9	+1,8	+1,7	+1,6
Unit labor costs	+1,4	+1,8	+1,6	+1,4	+0,9	+1,4	+1,6	+1,8	+2,0	+1,9	+1,9	+1,6	+1,5	+1,6	+1,6	+1,6	+1,5	+1,4	+1,3	+1,2
Nominal wages per employee	+2,5	+2,7	+2,5	+2,1	+2,1	+2,5	+2,5	+2,6	+2,6	+2,7	+2,8	+2,6	+2,5	+2,5	+2,5	+2,4	+2,3	+2,2	+2,0	+1,9
Productivity	+1,0	+0,8	+0,9	+0,8	+1,3	+1,1	+0,9	+0,8	+0,6	+0,8	+0,9	+1,0	+0,9	+0,9	+0,8	+0,8	+0,8	+0,8	+0,8	+0,7
Real wages per employee	+0,4	+0,7	+0,6	+0,3	+0,2	+0,5	+0,4	+0,6	+0,6	+0,7	+0,8	+0,7	+0,6	+0,6	+0,6	+0,5	+0,5	+0,3	+0,2	+0,1
Import deflator	+2,4	+2,2	+2,1	+2,1	+1,3	+2,2	+3,1	+2,9	+2,5	+2,1	+2,1	+2,2	+2,2	+2,2	+2,1	+2,0	+2,1	+2,1	+2,2	+2,1
Export deflator	+1,7	+2,1	+2,1	+2,0	+1,2	+1,5	+1,9	+2,0	+2,1	+2,0	+2,1	+2,2	+2,2	+2,2	+2,1	+2,1	+2,1	+2,1	+2,0	+1,9
Terms of trade	−0,7	−0,1	+0,0	−0,1	−0,1	−0,7	−1,2	−0,9	−0,4	−0,1	+0,0	+0,0	+0,0	+0,0	+0,1	+0,1	+0,1	+0,0	−0,1	−0,2
Economic activity	*Annual and/or quarterly changes in % (real)*																			
GDP	+2,7	+2,0	+1,9	+1,7	+0,8	+0,6	+0,4	+0,4	+0,5	+0,5	+0,5	+0,5	+0,5	+0,4	+0,4	+0,4	+0,4	+0,4	+0,4	+0,4
Private consumption	+1,7	+1,7	+1,6	+1,3	+0,5	+0,5	+0,3	+0,3	+0,5	+0,5	+0,5	+0,4	+0,4	+0,3	+0,3	+0,3	+0,3	+0,3	+0,3	+0,3
Government consumption	+1,8	+1,5	+1,2	+1,3	+0,6	+0,5	+0,5	+0,5	+0,3	+0,3	+0,3	+0,3	+0,3	+0,3	+0,3	+0,3	+0,3	+0,3	+0,3	+0,3
Gross fixed capital formation	+3,5	+2,6	+2,2	+1,7	+1,0	+1,2	+0,7	+0,6	+0,6	+0,6	+0,6	+0,6	+0,5	+0,6	+0,5	+0,5	+0,4	+0,4	+0,3	+0,3
Exports	+4,2	+3,8	+4,0	+3,7	+0,9	+0,7	+0,7	+0,8	+1,1	+1,1	+1,0	+1,0	+1,0	+0,9	+0,9	+0,9	+0,9	+0,9	+0,9	+0,9
Imports	+2,7	+3,6	+3,8	+3,4	+0,7	+0,7	+0,4	+0,8	+1,1	+1,0	+0,9	+0,9	+0,9	+0,9	+0,9	+0,9	+0,8	+0,8	+0,8	+0,8
	Contribution to real GDP growth in percentage points																			
Domestic demand	+2,1	+1,8	+1,6	+1,3	+0,6	+0,6	+0,4	+0,4	+0,5	+0,4	+0,4	+0,4	+0,4	+0,4	+0,4	+0,3	+0,3	+0,3	+0,3	+0,3
Net exports	+0,9	+0,3	+0,3	+0,3	+0,2	+0,0	+0,2	+0,0	+0,0	+0,1	+0,1	+0,1	+0,1	+0,0	+0,1	+0,1	+0,1	+0,1	+0,1	+0,1
Changes in inventories	−0,3	−0,1	+0,0	+0,0	+0,0	−0,1	−0,2	+0,0	+0,0	+0,0	+0,0	+0,0	+0,0	+0,0	+0,0	+0,0	+0,0	+0,0	+0,0	+0,0
Labor market	*% of labor supply*																			
Unemployment rate (Eurostat definition)	4,9	4,7	4,7	4,5	5,0	4,7	4,9	4,8	4,8	4,7	4,7	4,7	4,6	4,7	4,7	4,7	4,6	4,5	4,5	4,4
	Annual and/or quarterly changes in %																			
Total employment	+1,6	+1,1	+1,0	+0,9	+0,3	+0,4	+0,3	+0,3	+0,3	+0,3	+0,3	+0,3	+0,3	+0,2	+0,2	+0,2	+0,2	+0,2	+0,2	+0,2
of which: private sector	*+1,8*	*+1,3*	*+1,2*	*+1,1*	*+0,3*	*+0,5*	*+0,3*	*+0,3*	*+0,3*	*+0,3*	*+0,3*	*+0,3*	*+0,3*	*+0,3*	*+0,3*	*+0,2*	*+0,3*	*+0,3*	*+0,3*	*+0,3*
Payroll employment	+2,2	+1,4	+1,1	+1,0	+0,6	+0,5	+0,4	+0,4	+0,3	+0,3	+0,3	+0,3	+0,3	+0,3	+0,2	+0,2	+0,3	+0,2	+0,2	+0,2
Additional variables	*Annual and/or quarterly changes in % (real)*																			
Disposable household income	+1,8	+2,1	+1,6	+1,3	+0,5	+0,7	+0,4	+0,6	+0,7	+0,4	+0,4	+0,4	+0,4	+0,4	+0,4	+0,3	+0,3	+0,3	+0,2	+0,2
	% of real GDP																			
Output gap	0,9	0,7	0,5	0,3	0,9	1,0	0,8	0,7	0,7	0,7	0,7	0,7	0,6	0,6	0,5	0,4	0,4	0,3	0,3	0,2

Source: OeNB December 2018 outlook. Quarterly values based on seasonally and working day-adjusted data.

Table 19

Comparison of current economic forecasts for Austria

	OeNB				WIFO		IHS		OECD			IMF		European Commission		
	December 2018				October 2018		October 2018		November 2018			October 2018		November 2018		
	2018	2019	2020	2021	2018	2019	2018	2019	2018	2019	2020	2018	2019	2018	2019	2020
Main results	*Annual change in %*															
GDP (real)	+2.7	+2.0	+1.9	+1.7	+3.0	+2.0	+2.7	+1.7	+2.6	+1.9	+1.9	+2.8	+2.2	+2.7	+2.0	+1.8
Private consumption (real)	+1.7	+1.7	+1.6	+1.3	+1.8	+1.7	+1.8	+1.4	+1.8	+1.6	+1.5	×	×	+1.8	+1.6	+1.5
Government consumption (real)	+1.8	+1.5	+1.2	+1.3	+0.8	+0.7	+1.1	+1.0	+0.9	+0.6	+0.5	×	×	+1.2	+0.8	+0.8
Gross fixed capital formation (real)	+3.5	+2.6	+2.2	+1.7	+3.4	+2.7	+3.3	+1.8	+3.4	+2.0	+2.0	×	×	+3.4	+2.5	+2.1
Exports (real)	+4.2	+3.8	+4.0	+3.7	+4.9	+3.7	+4.5	+3.7	+3.9	+3.2	+3.2	+4.1	+3.4	+4.6	+3.7	+3.0
Imports (real)	+2.7	+3.6	+3.8	+3.4	+4.0	+3.5	+3.3	+3.2	+2.3	+2.1	+2.4	+3.4	+3.7	+3.4	+3.3	+2.6
GDP per employee[1]	+1.0	+0.8	+0.9	+0.8	+0.7	+0.7	+0.3	+0.5	+0.9	+0.8	+0.8	×	×	+0.9	+0.9	+1.0
GDP deflator	+1.7	+2.0	+1.9	+1.7	+1.7	+2.1	+1.8	+1.9	+1.6	+1.9	+2.2	+1.9	+1.4	+1.6	+1.9	+1.8
CPI	×	×	×	×	+2.1	+2.1	+2.0	+2.1	×	×	×	×	×	×	×	×
HICP	+2.1	+2.1	+2.0	+1.9	+2.2	+2.2	+2.1	+2.1	+2.1	+2.1	+2.0	+2.0	+2.1	+2.1	+2.1	+2.0
Unit labor costs	+1.4	+1.8	+1.6	+1.4	+1.5	+1.8	+2.1	+2.0	×	×	×	×	×	+1.6	+1.7	+1.4
Payroll employment	+2.2	+1.4	+1.1	+1.0	+2.5	+1.5	+2.4	+1.2	+1.3	+1.2	+1.1	+1.0	+1.1	+1.8	+1.1	+0.8
	% of labor supply															
Unemployment rate (Eurostat definition)	4.9	4.7	4.7	4.5	4.8	4.5	4.9	4.8	4.8	4.5	4.5	5.2	5.1	4.8	4.6	4.4
	% of nominal GDP															
Current account balance	2.1	2.4	2.6	2.8	1.9	2.0	×	×	2.2	2.4	2.8	2.2	1.8	2.0	2.2	2.4
Budget balance (Maastricht definition)	0.0	0.1	0.4	0.5	−0.1	0.2	−0.2	0.1	−0.1	0.3	0.6	−0.2	−0.2	−0.3	0.0	0.1
External assumptions																
Oil price in USD/barrel (Brent)	71.8	67.5	66.8	65.9	74.0	75.0	74.0	77.0	74.1	80.0	80.0	69.4	68.8	75.1	80.6	76.7
Short-term interest rate in %	−0.3	−0.3	0.0	0.3	−0.3	−0.2	−0.3	0.0	−0.3	−0.2	0.2	−0.3	−0.2	−0.3	−0.2	0.2
USD/EUR exchange rate	1.18	1.14	1.14	1.14	1.19	1.15	1.19	1.17	1.18	1.14	1.14	1.19	1.17	1.18	1.15	1.15
	Annual change in %															
Euro area GDP (real)	×	×	×	×	+2.0	+1.6	+2.0	+1.8	+1.9	+1.8	+1.6	+2.0	+1.9	+2.1	+1.9	+1.7
U.S. GDP (real)	+2.9	+2.5	+2.0	+1.8	+2.7	+1.8	+2.8	+2.5	+2.9	+2.7	+2.1	+2.9	+2.5	+2.9	+2.6	+1.9
World GDP (real)	+3.6	+3.3	+3.4	+3.3	×	×	+3.7	+3.6	+3.7	+3.5	+3.5	+3.7	+3.7	+3.7	+3.5	+3.5
World trade	+4.7	+3.7	+3.7	+3.9	×	×	+3.5	+3.0	+3.9	+3.7	+3.7	+4.2	+4.0	+4.1	+3.8	+3.5

Source: OeNB, WIFO, IHS, OECD, IMF, European Commission.

[1] *WIFO: GDP per hour worked.*

Eurosystem Household Finance and Consumption Survey 2017 for Austria

Pirmin Fessler,
Peter Lindner,
Martin Schürz[1]

This report presents results from the third wave of the Eurosystem Household Finance and Consumption Survey (HFCS) for Austria. The report focuses on the wealth components of the household balance sheet but we also discuss the main findings of the survey in terms of balance sheet robustness. We analyze the pattern of findings that are in line with international results as well as peculiar but stable findings which specifically apply to Austrian households. As the joint distribution of income, consumption and wealth is of particular interest for many international institutions we match the HFCS data with European Union Statistics of Income and Living Conditions (EU-SILC) and with Household Budget Survey (HBS) data.

Since its first wave in 2010 the Eurosystem Household Finance and Consumption Survey (HFCS) has become a key resource for analyzing households' debt behavior as well as their saving and investment behavior, reaching far beyond the areas for which it had been designed (see ECB, 2009). The availability of harmonized micro-data on household balance sheets in the euro area and beyond (the second-wave HFCS was also conducted in Poland and Hungary)[2] has fostered extensive knowledge production. The HFCS data have been used extensively by the Eurosystem, international organizations such as the OECD and the IMF as well as numerous academic researchers for a large variety of topics.[3] In Austria, the collection of HFCS data made it possible for the first time to estimate the distribution of net wealth among households. For the corresponding first results report of the second wave and for a detailed summary of the history of the HFCS and for measurement issues such as coverage and underreporting problems of wealth surveys see Fessler et al. (2016).

In the past decades of research on household finance some main findings emerged which seem to be common across almost all countries and datasets. On the basis of the third wave of the HFCS in Austria we are able to robustly compare our main findings with international household finance research and to identify common patterns as well as differences.

Since the seminal report of the Stiglitz-Sen-Fitoussi Commission (2009) it has been state of the art to analyze the distribution of income, consumption and wealth jointly. However, it is hardly possible to conduct one single household survey where all three items are covered in appropriate detail and with suitable care. The HFCS for example has a strong focus on wealth and also gathers gross income data with great detail, but measures consumption only very roughly and does not include net income measures at all.[4] Other surveys focus on income, such as the EU-SILC (European Union Statistics on Income and Living Conditions), and yet others

---

Refereed by:
Arthur B. Kennickell

on consumption, such as the Household Budget Survey (HBS, Konsumerhebung). Eurostat currently works on experimental statistics combining all three surveys to estimate the joint distribution of income, consumption and wealth. We deliver such estimates for Austria based on a statistical matching of all three surveys (HFCS, EU-SILC and HBS) and compare the results with estimates resulting from using the HFCS alone.

The remainder of this report is structured as follows. We discuss the results for net wealth and its components in section 1. In section 2 we compare main findings of the international literature on household finance with the results for Austria. Section 3 presents estimates on the joint distribution of income, consumption and wealth that are based on a statistical procedure matching EU-SILC data on income and HBS data on consumption with the HFCS data on wealth. Section 4 summarizes and concludes.

1 Net wealth and its components

This chapter resembles the main part of the first result report of the second wave (Fessler et al., 2016) but provides the information in a more concise way. We deliver some basic definitions in subsection 1.1, present measures of perceptions and preferences in subsection 1.2, describe the distributions of real assets, financial assets, debt and net wealth in subsection 1.3 and discuss the share of households holding certain wealth components and conditional values thereof in subsection 1.3.
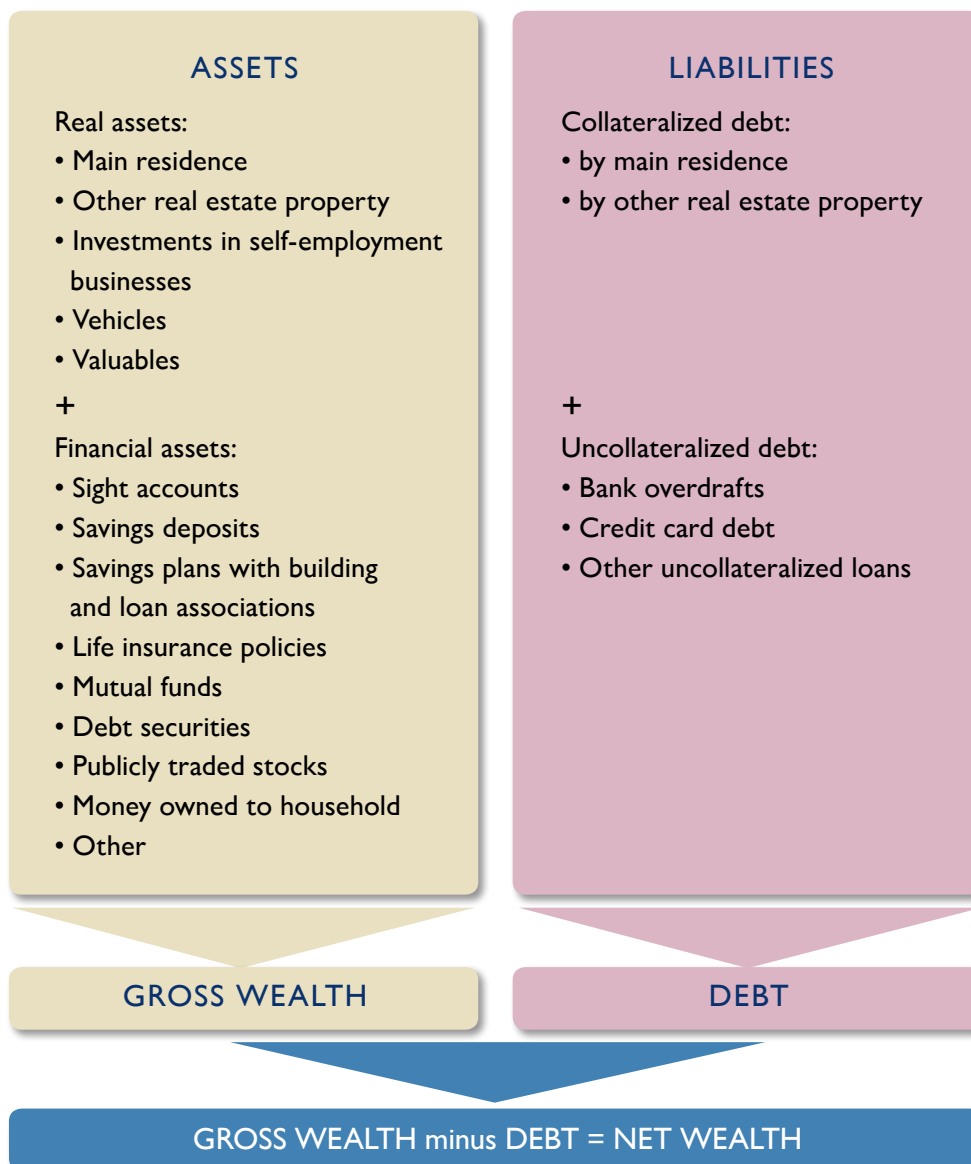
1.1 Definitions

A complete overview of the relevant definitions is provided in the reports on the first (2010) and second (2014) waves of the HFCS (Fessler et al., 2012; Fessler et al., 2016; ECB, 2016a and 2016b; Albacete et al., 2018b). For the sake of brevity, let us mention here only that the primary units of analysis of the HFCS are households. A household can be a person living alone, or a group of people who live together in the same private dwelling and share expenditures, including the joint provision of the essentials of living. The target population excludes households or individuals in institutions, i.e. hospitals, nursing homes, old persons' homes, student residences, boarding schools, convents, correctional facilities, barracks or the like. The definition of household as the unit of research in the Eurosystem HFCS is not only driven by theoretical considerations but also pragmatically oriented on the information households can reasonably be expected to provide in a voluntary survey.

The main aggregates are real assets, financial assets and debt. Gross wealth is the sum of real assets and financial assets; net wealth is gross wealth minus debt. The key components of the household balance sheet are as listed in infographic 1 (reproduced from Fessler et al., 2016).

1.2 Perceptions and preferences

Perceptions and preferences are crucial for understanding individual economic behavior. Therefore, we start our analysis with the perspective of the households themselves. Chart 1 shows the answers to a question regarding the households' self-assessment with regard to their own position in the wealth distribution in waves 2 and 3:

HOUSEHOLDS' BALANCE SHEET

ASSETS

Real assets:
- Main residence
- Other real estate property
- Investments in self-employment businesses
- Vehicles
- Valuables

+

Financial assets:
- Sight accounts
- Savings deposits
- Savings plans with building and loan associations
- Life insurance policies
- Mutual funds
- Debt securities
- Publicly traded stocks
- Money owned to household
- Other

LIABILITIES

Collateralized debt:
- by main residence
- by other real estate property

+

Uncollateralized debt:
- Bank overdrafts
- Credit card debt
- Other uncollateralized loans

GROSS WEALTH

DEBT

GROSS WEALTH minus DEBT = NET WEALTH

"Looking at your household's entire net wealth, where in the distribution would you classify your household on a scale from 1 to 10 (1 denotes the bottom 10% category with the lowest wealth and 10 the top 10% with the highest wealth in Austria)?"

As in the second wave of the HFCS, respondents tended to misclassify their household with a strong bias towards the middle of the distribution.[5] At the same time, even more households placed themselves not just below the middle (5th or 4th decile) but in the 3rd decile. While in the second wave about 43% of households put

---

[5] *References to individuals are references to the so-called financially knowledgeable person, who was the intended survey respondent.*

Chart 1

Self-assessment of household's position in net wealth distribution

% of households

Net wealth deciles

■ Wave 2 ■ Wave 3 ━ Real share
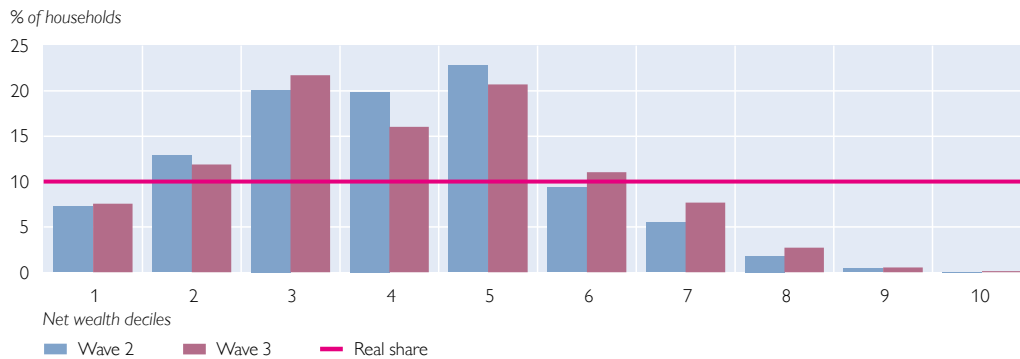
Source: HFCS Austria 2014, HFCS Austria 2017, OeNB.

themselves in the 4th or 5th decile and only about 20% in the 3rd decile, in the third wave we already find 22% in the 3rd decile and only about 37% in the 4th or 5th decile. One hypothesis to explain this shift are concerns about downward mobility among households in the lower middle class.

The more wealth a household has, the lower the probability of a correct self-assessment. Households at the lower end of the distribution overestimate the wealth decile they belong to, whereas those in the middle (from the 4th decile onwards) and at the top underestimate it. The average estimated decile is 3 for the lower two deciles; 4 for deciles 4 to 7; 5 for deciles 8 and 9; and 6 for decile 10 (see table 1).

As a next step, we illustrate the relationship between households' perceived wealth position and the savings rate across equalized net income, which is the most important determinant of the savings rate.[6] We distinguish three groups of households: households that overestimate their position in the net wealth distribution, households that underestimate their wealth position, and households who estimate their wealth position correctly.

Chart 2 calculates average saving rates by vingtiles, i.e. 20 equal-size groups, of the household equalized net incomes. In order to filter out age and gender effects we apply a regression approach controlling for the financially knowledgeable persons' age and age squared and gender first.[7] Chart 2 shows that the average savings rate of those who underestimate their wealth position is generally above the saving rates of those who overestimate or correctly estimate their wealth decile.

Table 1

Self-assessment by net wealth deciles

	All households	Households with incorrect self-assessment	
	Correct self-assessment	Average misestimation deciles	Average estimated decile
Actual decile	%		
1	38.9	2.3	3
2	26.4	1.2	3
3	37.8	0.6	4
4	21.6	−0.5	4
5	19.4	−1.2	4
6	10.7	−1.9	4
7	10.2	−2.6	4
8	2.8	−3.2	5
9	0.6	−3.6	5
10	0.0	−4.2	6

Source: HFCS Austria 2017, OeNB.

---

[6] *For a deeper discussion of saving and the savings rate in Austria, see Fessler and Schürz (2017).*

[7] *We use the binscatter command in Stata provided by Michael Stepner (MIT).*

While income is the key determinant of the savings rate, households underestimating their wealth position save more than other households across all income levels. Thus, households that underestimate their position appear to try to catch up. The effect is stronger for households with higher equalized net incomes. These are the households that are more able to adapt their savings rate by limiting consumption.

Chart 3 shows answers to four questions on views and preferences of respondents related to wealth:

1. Do you think it is a good idea to buy things using debt or borrowed money?
2. Do you think that it is possible to start poor, work hard and become rich in Austria?
3. Are you in favor of introducing a wealth tax?
4. Inheritance tax was abolished in Austria in 2008. Are you in favor of re-introducing inheritance taxation in Austria?

While overall about 17% consider borrowing money to buy things a good idea, the share rises with net wealth. About 43% think that it is possible to start poor and get rich through work in Austria. However, while this share is about 30% for households in the lowest wealth quintile it rises to almost 60% for households in the highest quintile. Interestingly also people in households that have received an inheritance say that one can become rich through work more often than those without inheritances (47% vs. 40%). About 46% of respondents are in favor of a wealth tax. While the share is above 50% in the lowest wealth quintile, acceptance decreases to below 45% in the 5th quintile. Only about 20% of the reference
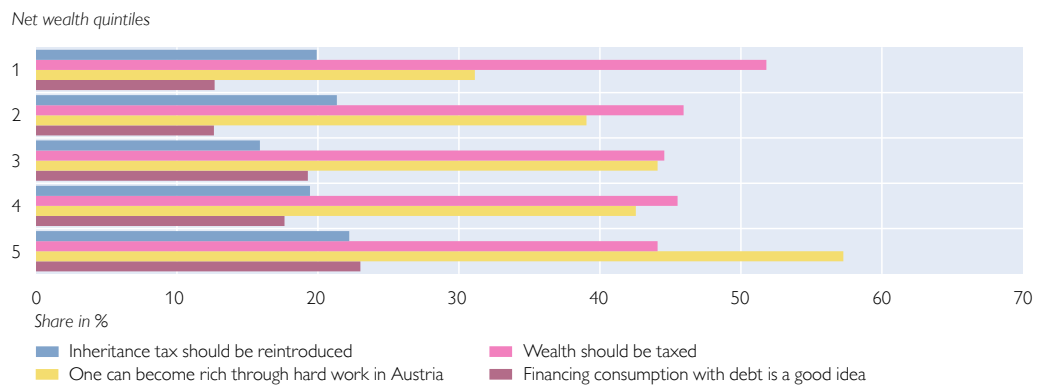
Chart 2

Perceived wealth position and savings by equalized household income

Savings rate

(Log) Equivalized household income

- ○ Underestimated
- ◇ Overestimated
- □ Correctly estimated
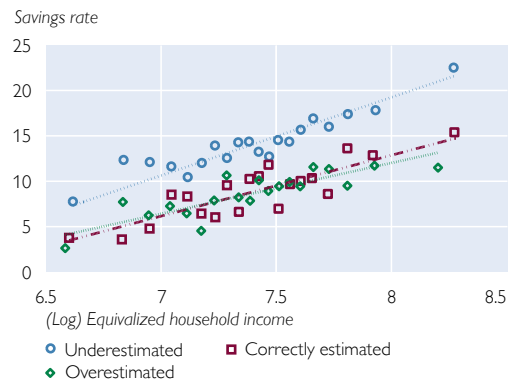
Source: HFCS Austria 2017, OeNB.

Chart 3

Views and preferences of the financially knowledgeable person across net wealth quintiles

Net wealth quintiles

Share in %

- Inheritance tax should be reintroduced
- One can become rich through hard work in Austria
- Wealth should be taxed
- Financing consumption with debt is a good idea

Source: HFCS Austria 2017, OeNB.

persons[8] would support the re-introduction of an inheritance tax. Interestingly this result is rather stable across all wealth quintiles.

1.3 The distribution of wealth

As a next step, we present the main components of net wealth in the charts below. Charts 4 through 7 show the distribution of household real assets, financial assets, debt and net wealth.

Household net wealth is calculated by summing up real assets and financial assets and subtracting debt from the total.

Chart 4 shows the distribution of real assets from the 5th to the 95th percentile. The calculation covers all households, with households that do not own any real assets having been assigned a real asset value of zero. We select the interval from the 5th to the 95th percentile for the chart to avoid coverage problems at the upper and lower tails of the distribution (see Vermeulen, 2016, for a discussion) and uncertainties arising from the strong positive skewness of the distribution (see Fessler et al., 2016, for a detailed discussion of this issue).[9]

Zero ownership of real assets is reported by a fairly large number of households (13.8%). This may reflect the underreporting of less valuable items. In particular, the low rate of reported valuables may reflect a growing anxiousness to disclose information about valuables kept at home (see table 2). Not until the middle of the distribution do real asset holdings begin to increase markedly. Below the middle of the distribution vehicles are the only dominant type of real asset. The 45.9% of households that own their main residence are almost all in the upper half of the net

Chart 4

Distribution of real assets

EUR thousand
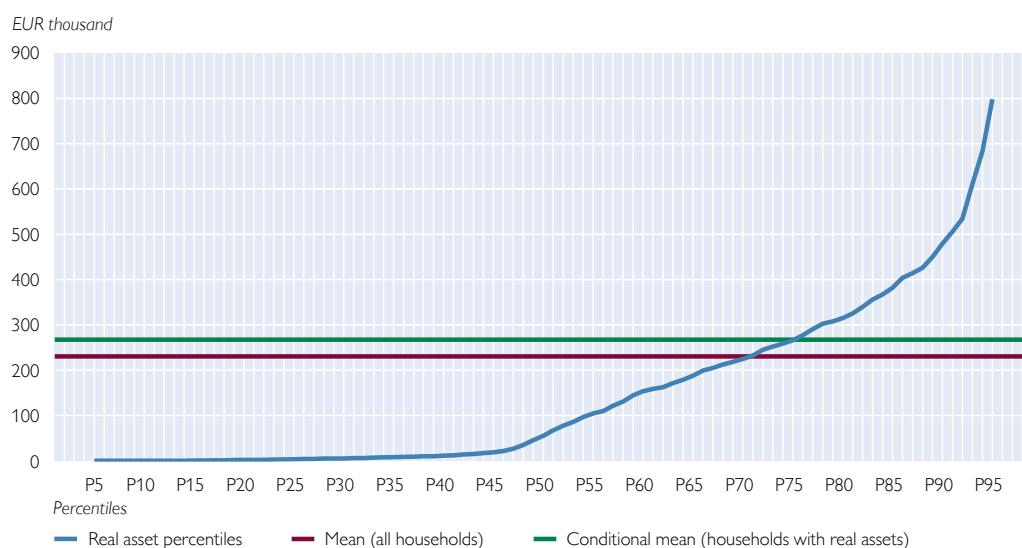
Source: HFCS Austria 2017, OeNB.

---

[8] We use the financially knowledgeable person – who answers all household level questions in the HFCS – as a reference person.

[9] Although coverage problems affect different parts of the balance sheet differently, we show all results based on the interval from the 5th to the 95th percentile in order to be consistent.

wealth distribution.[10] The conditional mean of real assets,[11] which is calculated on the basis of households with real assets only, comes to about EUR 267,000. Real asset holdings rise evenly between the middle and the 90th percentile, reflecting the relatively evenly distributed current values of households' main residences. Real asset values rise noticeably more from the 90th percentile, especially the values above the 95th percentile, which the chart does not show. In this range of the distribution, other real estate property and investments in self-employment businesses begin to play a key role in addition to main residences. Ownership of agricultural property of farmers is also to be found in this segment of the distribution.

To sum it up in broad terms, about half of all households own only low volumes, if any, of real assets. An additional 40% own their main residence and little else. Some 10% have real assets totaling more than EUR 480,000 that – besides household main residences – consist mainly of other real estate property and investments in self-employment businesses.

Chart 5 shows the distribution of financial assets. Only very few households (0.3%) own no financial assets at all. For this reason, the conditional and unconditional means are nearly identical at around EUR 39,000. Once again, both these values are far higher than the (unconditional) median (some EUR 15,000), which indicates a pronounced positive skewness of the distribution. The financial wealth of roughly three-quarters of all households falls short of the mean, and fewer than 10% have financial assets of more than EUR 89,000. Underreporting is especially high for financial wealth in general, and the degree of understatement is most likely to be largest in the upper range of the distribution (see also Andreasch and Lindner, 2016; Vermeulen, 2016).
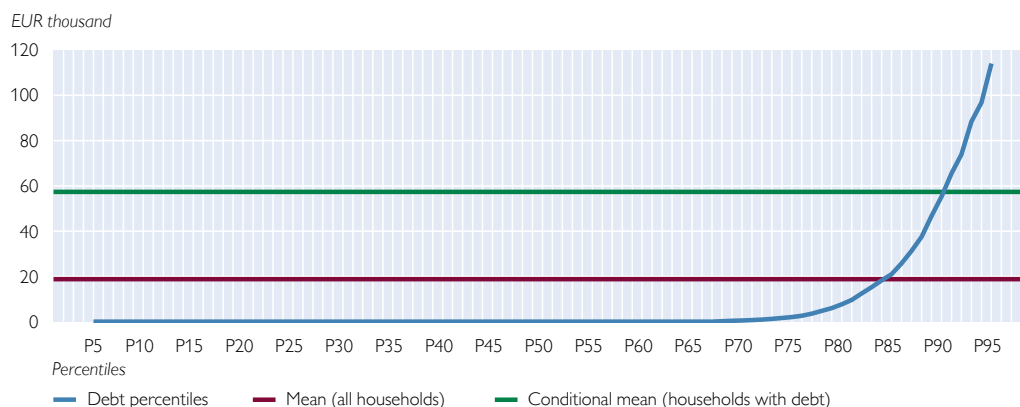
Chart 5

Distribution of financial assets

EUR thousand

Percentiles

— Financial assets percentiles   — Mean (all households)   — Conditional mean (households with financial assets)

Source: HFCS Austria 2017, OeNB.

---

[10] *The microcensus ratio for people owning their main residence is 47.8%. The HFCS also includes not registered households likely to be renters.*

[11] *The mean as measured in the survey likely understates the true mean in the population, due to the effective under-coverage of very wealthy households.*
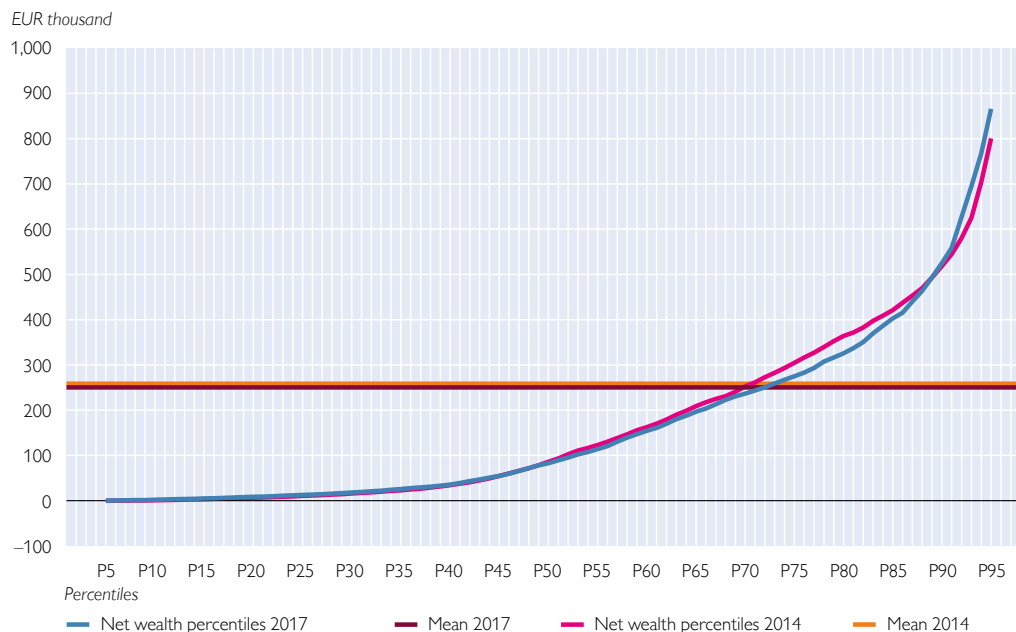
Chart 6

Distribution of debt

EUR thousand

Percentiles

— Debt percentiles   — Mean (all households)   — Conditional mean (households with debt)

Source: HFCS Austria 2017, OeNB.

Chart 6 shows the distribution of debt from the 5th to the 95th percentile. While debt tends to be positively correlated with wealth, top-wealth households, which are underrepresented in the HFCS, are rare to have particularly severe debt. Therefore, underrepresentation of the upper tail of the debt distribution of the HFCS is less problematic. However, we show the distribution of debt also from the 5th to the 95th percentile for consistency. More than two-thirds of Austrian households (67.3%) do not have any debt. The conditional mean of debt comes to approximately EUR 57,000. Small liabilities are primarily unsecured loans or, in few instances, secured loans that have been almost paid off. Large debt amounts mainly reflect mortgage loans at various stages of repayment.

Chart 7 shows the distribution of net wealth for the third and for the second wave. In 2017 (wave 3) some 4.7% of households have negative or no net wealth. As real assets predominate among net wealth, the result is similar to that in chart 2. At about EUR 250,000, the mean is considerably higher than the median of around EUR 83,000. Net wealth of over EUR 1 million is observed only in the top 5% of households, which are not shown in the chart. Compared to 2014 the distribution of net wealth between the 5th and 95th percentile stayed almost the same. If anything, there seems to be a little shift towards lower values in 2017 for percentiles between P50 and P89 and higher values above P89. In fact, the values for the lower half (up to P49) are slightly higher in 2017 but hardly visible in the chart. The corresponding lines therefore intersect already two times between the 5th and the 95th percentile, namely between P49 and P50 and between P89 and P90.

While in the lower part of the distribution households may try to accumulate more precautionary wealth (P10 is at about EUR 2,000 in 2017 compared with about EUR 1,000 in 2014, P20 at about EUR 8,000 in 2017 compared with about EUR 6,000 in 2014), households have slightly less wealth in the middle while they have more wealth in the top decile. Relative increases, however, are largest in the lower part of the wealth distribution. This might likely be a cause of rising uncertainty and (expected) decreases in welfare state activity (see Fessler and Schürz, 2018a). More than 70% of households have less wealth than average wealth at about EUR 250,000 and only 10% have more than EUR 500,000. Net wealth millionaires can be found only inside the top 5% of the net wealth distribution.

Chart 7

Distribution of net wealth 2014 and 2017

EUR thousand

Percentiles

— Net wealth percentiles 2017　　— Mean 2017　　— Net wealth percentiles 2014　　— Mean 2014

Source: HFCS Austria 2014, HFCS Austria 2017, OeNB.

The three components of net wealth (real assets, financial assets, debt) can be analyzed in detail at the level of their subcomponents. We perform this analysis in two steps: first, we determine household participation in a specific wealth component, i.e. we establish how many households have a given asset or liability. Second, we compute the median and the mean for the households with this component. Thus, these values are conditional. The median divides the conditional distribution into two halves. The arithmetic mean is the value that would result for every household owning such an item if the entire volume of wealth were equally distributed. The median is a statistically robust measure while the mean is not. Additionally, the mean-to-median ratio is computed as an indicator of the skewness of the distribution within the wealth component under review.[12]

1.4 The components of wealth

Table 2 provides an overview of the key components of net wealth. The further the mean is away from the median, the more skewed the distribution is. All wealth components have a positively skewed distribution. Accordingly, the mean is higher than the median.

Vehicles are by far the most common real asset among households in Austria. More than three-quarters of Austrian households own at least one vehicle. The average value of such vehicles is about EUR 13,000. The mean-to-median ratio of 1.6 indicates a relatively equal distribution of wealth.

---

[12] *For reasons of simplicity, we state the mean-to-median ratio here as a simple division of the estimated mean by the estimated median. The underlying means and medians were estimated on the basis of the five multiply imputed datasets.*

Table 2

Components of net wealth

	Participation	Conditional median	Conditional mean	Mean-to-median ratio
	%	EUR thousand	EUR thousand	
Real assets				
Vehicles	78.7	8.0	13.1	1.6
Main residence	45.9	250.0	289.1	1.2
Other valuables	17.6	5.0	13.9	2.8
Other real estate property	13.0	123.7	296.5	2.4
Investment in self-employment business (incl. farms)	7.0	108.1	661.5	6.1
Financial assets				
Sight accounts	99.5	1.3	3.6	2.8
Savings accounts	86.6	13.4	28.6	2.1
Savings plan with building and loan associations	48.0	4.0	5.8	1.4
Life insurance contracts	35.2	11.0	22.4	2.0
Voluntary private pension plans	12.3	8.5	22.9	2.7
Mutual funds	8.5	15.2	40.6	2.7
Money owed to household	6.9	2.0	9.1	4.6
Stocks	5.0	10.1	23.1	2.3
Bonds	2.6	16.9	37.5	2.2
Other financial assets	1.4	12.4	91.6	7.4
Debt				
Collateralized debt	16.5	64.6	100.2	1.6
Main residence	15.6	64.8	98.6	1.5
Other real estate property	1.4	50.8	85.2	1.7
Uncollateralized debt	20.3	2.3	11.0	4.9
Overdrafts	11.8	0.8	1.5	1.9
Uncollateralized loans	11.2	7.4	18.3	2.5
Loans from family and friends	4.1	4.0	14.0	3.5
Outstanding balance on credit cards	0.7	0.4	0.9	2.1

Source: HFCS Austria 2017, OeNB.

Some 46% of households at least partially own their main residence. In this component of wealth, the median value of the main residence of owner households is around EUR 250,000, and the average value of the main residence of owner households amounts to about EUR 289,000. Main residence ownership represents the most important asset in terms of volume for the owners.

About 18% of households own other valuables, such as gold, works of art, jewelry, collections, etc. With the median value being around EUR 5,000, the values in this class are rather low.

About 13% of households own real estate assets other than the household main residence, above all houses, apartments and undeveloped land. In the HFCS in Austria, real estate property of farming households that is part of their agricultural business is recorded under investments in self-employment businesses rather than under other real estate property. However, some real estate assets also qualify as property for business use. This caveat should be considered when analyzing businesses-related assets. With a conditional mean[13] of some EUR 297,000 – about two-and-a-half

---

[13] In the calculation of the conditional mean only households owning the particular asset are considered.

times the median – this component of wealth exhibits a relatively unequal wealth distribution compared to that of main residences.

Around 7% of households have investments in self-employment businesses (including agricultural businesses), i.e. businesses in which at least one household member is actively involved. Both the median (around EUR 108,000) and the mean (around EUR 662,000) of this component of wealth are comparatively high. Silent partnerships, defined as (full or partial) ownership of a business in which no household member is actively involved, qualify as financial assets.

Sight accounts are the most common financial asset and the one with the lowest values. Almost all households (99.5%) have at least one sight account. The median of this component of financial wealth is no more than around EUR 1,300, whereas the mean value is around EUR 3,600.

Savings accounts, which in the HFCS Austria include savings plans with building and loan associations and life insurance contracts, are by far the most common savings variant. About 87% of households have at least one savings account, 48% have at least one savings plan with a building and loan association, and 35% have at least one life insurance contract. The median of savings accounts comes to around EUR 13,000 and the mean to some EUR 29,000.

Roughly, 12% of households have made voluntary private pension provisions. This component of wealth contains state-sponsored retirement provision plans and other dedicated private savings plans for retirement. The median runs to roughly EUR 9,000 and the mean to about EUR 23,000, which does not differ that much from the values for savings accounts.

Some 9% of households have invested in mutual funds. The median of this component of wealth is around EUR 15,000 and the mean value about EUR 41,000.

Money owed to households represents another component of financial wealth. About 7% of households state that they have lent money to others. The sums involved (median: about EUR 2,000; mean about EUR 9,000) are not negligible.

Stocks are held by some 5% of households, bonds by around 3%. The medians run to about EUR 10,000 (stocks) and around EUR 17,000 (bonds), which compares with corresponding means of about EUR 23,000 (stocks) and around EUR 38,000 (bonds). The residual measure "other financial assets," for which about 1.4% of households reported values, comprises financial assets that are not recorded in any other category. This includes, for instance, silent partnerships, deferred compensation, trademark rights and accounts managed by trustees. The median amounts to about EUR 12,000 and the mean to some EUR 92,000.

About 17% of households have debt for which they use their home as collateral. The difference between the median of about EUR 65,000 and the mean of around EUR 100,000 reflects variations across households both in the original amounts borrowed and the repayment of loans over time.

Only about 1% of households have taken out loans using other real estate property as collateral; in terms of their values, however, these loans are similar in size to loans using the main residence as collateral.

About 20% of households have uncollateralized debt.[14] The distribution is significantly more skewed than that of collateralized debt. And about 12% of

---

[14] This category includes loans taken out to finance the purchase of a vehicle. Leasing contracts, however, are not included as the HFCS does not collect information on the outstanding balance of leasing contracts.

households have overdrawn at least one of their sight accounts by a median of about EUR 1,000; the average value of this component is EUR 1,500. Other un-collateralized other loans, amounting to an average of about EUR 18,000, represent the largest component of uncollateralized debt. Outstanding credit card balances play a minor role in Austria, with only about 1% of households holding such debt and with the median and the mean coming to a comparatively low level of around EUR 400 and EUR 900, respectively. Austrians generally continue to use credit cards rather like debit cards, settling their bills in full every month.

Annex 2 (tables A1–A6) provides breakdowns of wealth according to socio-economic characteristics.

2 Ten findings about household finance in Austria

In this section, we will discuss ten findings which are robust across all three waves of the HFCS in Austria and therefore can be regarded as solid characterizations of household balance sheets and the wealth distribution in Austria. The first five findings are related to the international literature on household finance. The second five results deal with important Austrian peculiarities.

Almost 20 years ago Davies and Shorrocks (2000, p. 607) described five "stylized facts" about the distribution of wealth:

1. *"Wealth is distributed less equally than labour income, total money income or consumption expenditure. While Gini coefficients in developed countries typically range between about 0.3 and 0.4 for income, they vary from about 0.5 to 0.9 for wealth. Other indicators reveal a similar picture. The estimated share of wealth held by the top 1% of individuals or families varies from about 15-35%, for example, whereas their income share is usually less than 10%."*
2. *"Financial assets are less equally distributed than nonfinancial assets, at least when owner-occupied housing is the major component of nonfinancial assets. However, in countries where land value is especially important, the reverse may be true."*
3. *"The distribution of inherited wealth is much more unequal than that of wealth in general."*
4. *"In all age groups there is typically a group of individuals and families with very low net worth, and in a number of countries, including the US, the majority have surprisingly low financial assets at all ages."*
5. *"Wealth inequality has, on the whole, trended downwards in the twentieth century, although there have been interruptions and reversals, for example in the US where wealth inequality has increased since the mid-1970s."*

Against this scientific background, what are related findings for Austria?

Finding 1: Wealth is less equally distributed than income

Chart 8 shows the Lorenz curves of gross income and net wealth. As elsewhere, in Austria net wealth is distributed more unequally than income. The HFCS is designed to provide better estimates of gross than of net income. However, net income is distributed more equally than gross income.

Chart 8

Lorenz curves of gross income and net wealth

Gross income and net wealth shares in %

Population share in %

— Gross income — Net wealth — Line of equality
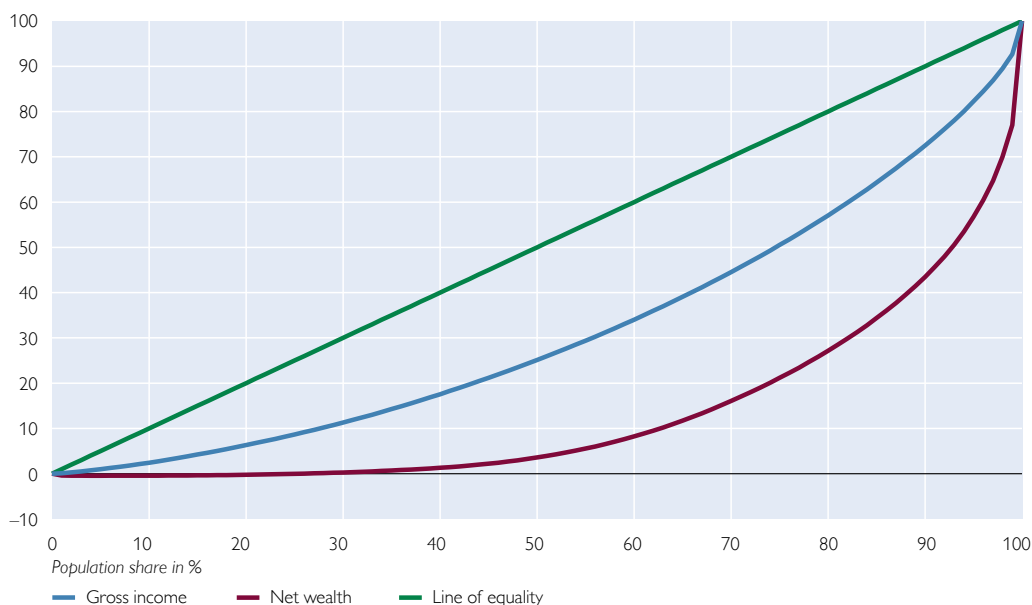
Source: HFCS Austria 2017, OeNB.

Finding 2: In Austria, the distribution of nonfinancial assets is about as unequal as the distribution of financial assets and not more equal, as is the case in many other countries

Owner-occupied housing is the major component of nonfinancial assets in Austria. But the general finding of the international literature that financial assets are less equally distributed than real assets cannot be confirmed for Austria.

Chart 9 shows Lorenz curves of financial assets and real assets. Real assets are more unequally distributed than financial assets. This is mainly due to the fact that homeownership is concentrated in the upper half of the net wealth distribution and that more than half of the population does not own the household's main residence.

Finding 3: In Austria, the distribution of inherited wealth is much more unequal than that of wealth in general

About 62% of households have not received an inheritance yet, while among the remaining 38% who have inherited something most households have inherited comparably small amounts. Chart 10 shows the Lorenz curves of inheritances as they are collected in the HFCS, that is with the value at the time of ownership transfer, as well as the present value assuming a nominal interest of 3% and taking the time passed since the inheritance into account, and compares these amounts to net wealth. However, this exercise does not take into account differences of changes in prices of particular items inherited such as the development of the real value of money in a savings account vs. real estate wealth. Fessler and Schürz (2015) additionally show that the number of households that have received an inheritance is higher among households with higher levels of net wealth and income.

Chart 9

Lorenz curves of financial assets and real assets
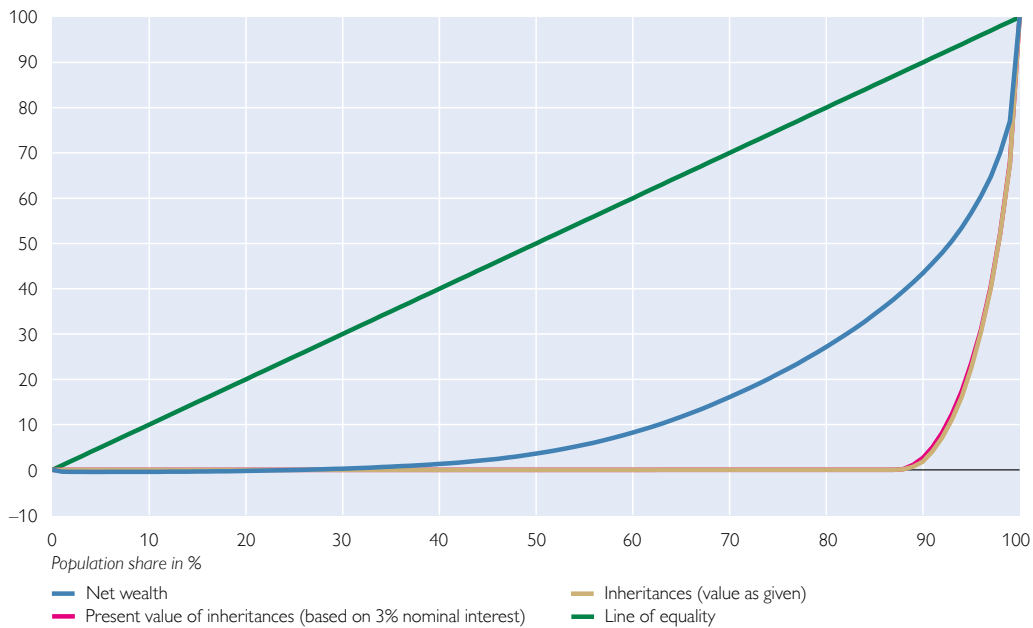
Financial assets and real asset shares in %

Population share in %

— Financial assets　— Real assets　— Line of equality
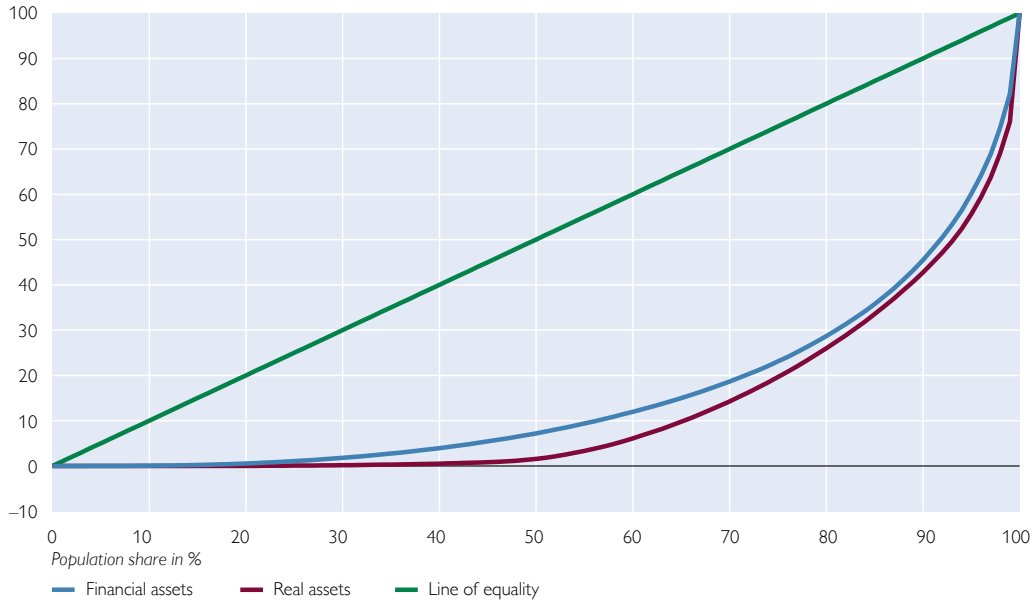
Source: HFCS Austria 2017, OeNB.

Chart 10

Lorenz curves of inheritances and net wealth

Inheritances and net wealth shares in %

Population share in %

— Net wealth　— Inheritances (value as given)
— Present value of inheritances (based on 3% nominal interest)　— Line of equality
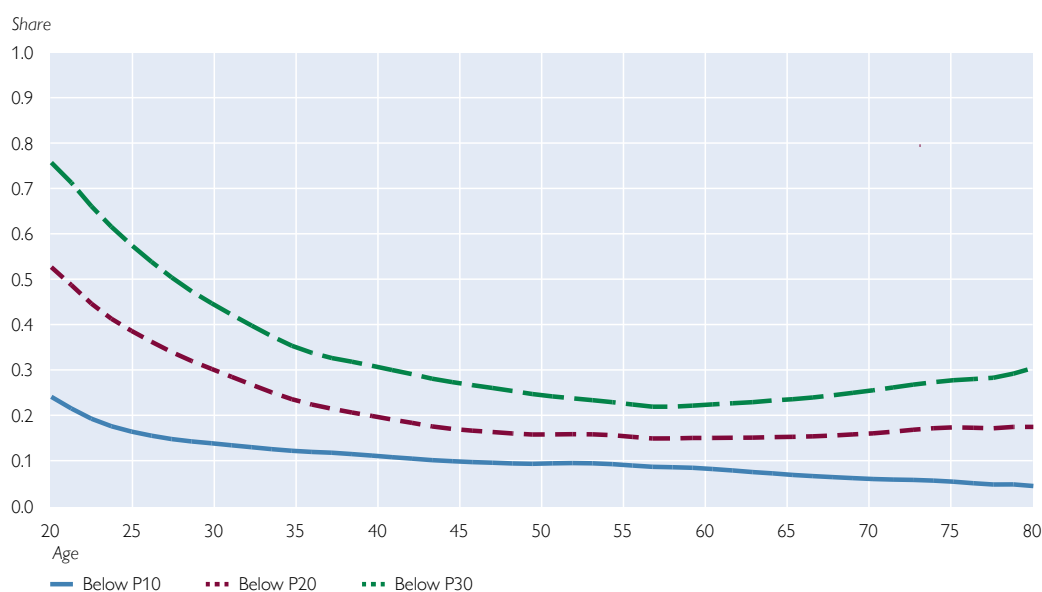
Source: HFCS Austria 2017, OeNB.

Finding 4: In Austria, households with very low net wealth can be found in all age groups

Chart 11 shows the share of households below a certain wealth percentile (in the overall wealth distribution) across the age of the reference person. Even though the share of households belonging to the lowest net wealth decile is higher for households with younger reference persons and lower for households with older reference persons it remains well above zero over the whole life cycle (see chart 11). The share belonging to the lowest two deciles is particularly large for the young but remains almost constant above 15% from age 45 onwards. The share belonging to the lowest three deciles even increases again and is above average (above 30%) for the elderly. Thus, households with low wealth levels can indeed be found in all age groups.

Chart 11

Households in lower percentiles by age of reference person

Source: HFCS Austria 2017, OeNB.

Finding 5: For the short period for which data are available, wealth inequality was rather stable in Austria

When we compare HFCS data across all three waves, we find that wealth inequality remained rather stable in Austria. As is evident from table 3, different measures of inequality move in different directions. Kennickell (2018) showed that this finding is expected especially without oversampling of the top tail of the wealth distribution. However, in most cases the observed differences are not statistically significant. Furthermore, wealth surveys generally suffer from problems of coverage and under-reporting. This leads to severe biases and an underestimation of the true wealth inequality (see Vermeulen, 2016). On top of that misreporting of households likely differs for different wealth items. While debt undercoverage appears to be relatively low, undercoverage is rather large for financial assets. There is a high degree of uncertainty especially with regard to estimates for which the right tail of the distribution is important.

Table 3

Inequality measures 2010–2017

	2010		2014		2017	
	Gross wealth	Net wealth	Gross wealth	Net wealth	Gross wealth	Net wealth
Inequality measures						
Gini coefficient	0.73	0.76	0.71	0.73	0.71	0.73
GE(2)	4.0	4.5	10.2	11.5	7.4	8.5
P75/P25	22.4	24.3	27.0	28.6	21.7	21.6
P90/median	6.2	7.1	5.4	6.0	5.7	6.3
P90/P10	233.7	581.1	251.8	521.2	171.9	262.0
Top shares	%					
Top 1	21.7	22.9	23.9	25.4	21.4	22.6
Top 5	45.5	47.6	41.6	43.4	41.2	43.1
Top 10	58.8	61.1	53.5	55.5	54.2	56.4
Top 20	74.4	76.6	70.0	72.1	70.9	72.8
Bottom 50	3.9	2.8	4.0	3.2	4.3	3.6

Source: HFCS Austria 2010, HFCS Austria 2014, HFCS Austria 2017, OeNB.

Note: The Gini coefficient may take a value greater than 1 if the data contain negative values. GE(2) is a generalized entropy index with $\alpha = 2$.

To sum up, three of the five main findings of the international literature on household finance reported in the seminal book chapter of Davies and Shorrocks (2000) can be confirmed for Austria. One, the downward trend of wealth inequality since the second world war and its upward trend since the 1970s, can neither be confirmed nor falsified because of a lack of data.

For Austria, the HFCS is the only survey that includes wealth for the full population of households, but the HFCS has only been available since 2010, which is too short to capture the wealth distribution over the longer horizon. In the absence of inheritance taxation, there are also no register data on inheritances, which could be used to estimate the tail of the wealth distribution. Even estimates of the income distribution in Austria have to use survey data (mostly EU-SILC), as an integrated register of labor and capital income at the household or individual level does not exist.

For the period from 2010 to 2017, the data point towards a rather stable distribution of net wealth in Austria. However, the international finding that financial assets are less equally distributed than nonfinancial assets does not seem to hold for Austria. This is likely related to our finding 8 (see below).

Finding 6: The distribution of net wealth in Austria is among the most unequal in Europe

Austria and Germany are both at the top with regard to the inequality of the wealth distribution and at the bottom with regard to median net wealth. This finding is a rather robust and valid result, reflecting the fact that the well-developed welfare state in both countries offers state pensions and health and other state-organized insurances against the contingencies of life as substitutes for private wealth. Most importantly, social housing plays a major role in Austria. About 12% of all households live in homes owned by the state and another 17% in cooperative housing usually also subsidized by the state. For a substantial part among those 18% that rent on the "free market," rents are regulated by the state. Wealth inequality would likely decrease if state social security were decreased – because households in the lower part of the wealth distribution would have strong incentives to insure themselves against contingencies of life (for a more detailed discussion see Fessler and Schürz, 2018a).
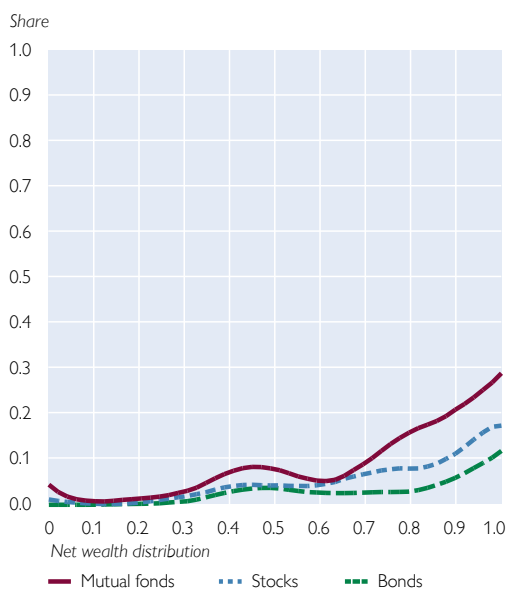
Finding 7: The share of households holding risky assets is particularly low in Austria; conditional on holding risky assets, the share of wealth invested in risky assets does not increase with wealth

Austrian households typically put money into savings accounts or save money under savings plans with building and loan associations or life insurance companies. Very few households hold riskier assets – i.e. assets that are riskier than a simple savings account – such as mutual funds, stocks or bonds.[15] The share of households doing so increases with wealth, but stays at low levels even for the wealthy, namely at about 20% for mutual funds and at about 10% for stocks and even less for bonds at the 90th percentile of the net wealth distribution (see left panel of chart 12). On top of that, conditional on participating in risky asset markets, wealthier households do not invest a higher share of their financial assets than households with low wealth (see right panel of chart 12). A large share of wealthy households in Austria does not invest in risky assets at all, and if they do, they do not invest more than low wealth households.

Chart 12

Investment in risky assets

Share of households holding risky assets — Mutual fonds, Stocks, Bonds. Conditional share of risky assets in financial wealth — Households with risky assets, Share of risky assets.

Source: HFCS Austria 2017, OeNB.

Finding 8: The share of owner-occupiers is particularly low and decreasing in Austria

The share of owner-occupiers is estimated at about 46% in the third wave of the HFCS. In the first wave in 2010 it was estimated at 48%. This is the second lowest share of owner-occupiers in the euro area. The trend for the HFCS estimate is similar to Statistics Austria's microcensus estimate (50.1% in 2010 and 47.8% in 2017). Hence, the rate of owner-occupiers in Austria is low and decreasing. Austria has a

[15] *We define risky assets to include mutual funds, stocks, and bonds, as is commonly done in the literature.*
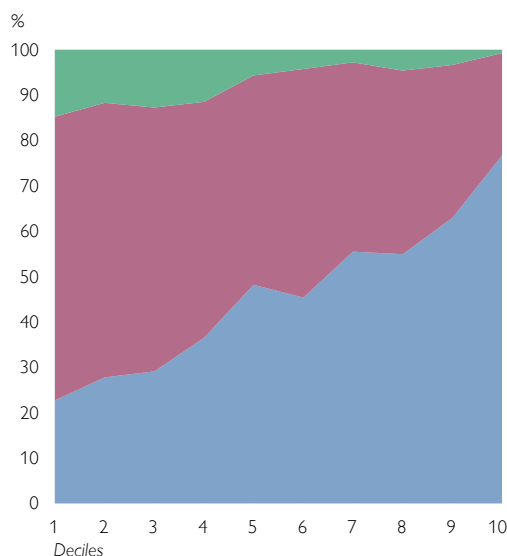
Chart 13

Tenancy types

Tenancy type across net wealth deciles
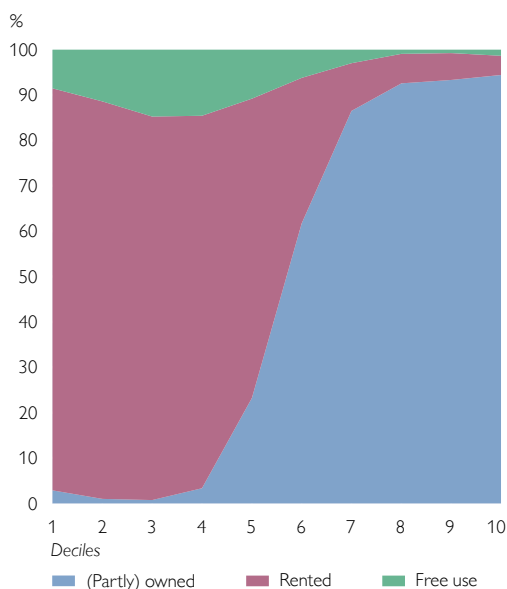
Tenancy type across gross income deciles

■ (Partly) owned   ■ Rented   ■ Free use

Source: HFCS Austria 2017, OeNB.

large rental market, which allows for rather easy household formation as opposed to having to buy a house or apartment when forming a new household. That is the reason for the relatively large number of young single-person households existing in Austria. This is also the main reason why overindebtedness is rather limited in Austria, which is helpful for financial stability. Those households that cannot accumulate the necessary downpayment through savings and do not inherit the relevant assets stay in rented apartments and houses – which are available and (still) relatively affordable. One reason why Austria and Germany did not suffer from large problems in housing markets during the recent financial and economic crisis was this strong selection into ownership. Particularly in the capital of Vienna, less than 20% of households are owner-occupiers and of those who are only a fraction (less than one-third) has any debt. Homeownership in Austria is particularly strongly correlated with wealth and income (see chart 13).

Finding 9: The extensive and intensive margins of debt are particularly low in Austria

The level of indebtedness of Austrian households is rather low. More than two-thirds of Austrian households (67.3%) do not have any debt. Collateralized mortgage debt is the form of debt which is relevant for financial stability, because it reaches higher absolute levels, is almost exclusively held by households in the upper part of the net wealth distribution (see table 4 and Albacete et al., 2018a, for a comprehensive overview of indebtedness of Austrian households). In Austria, almost every household who is an owner-occupier can also afford to be one. Uncollateralized debt on the other hand is more relevant for the lower half of the net wealth distribution and might be worrisome in size for low wealth households (see table 4). However, also uncollateralized debt does not pose a threat to financial stability in Austria as it is largely spread across the wealth distribution and as the conditional medians remain are rather low (below EUR 5,000 across all deciles).

Table 4

Extensive and intensive margins of debt by net wealth deciles

Net wealth deciles	Debt	Collateralized debt		Uncollateralized debt	
	Participation	Participation	Conditional median	Participation	Conditional median
	%	%	EUR thousand	%	EUR thousand
1	53.0	2.8	—[1]	51.8	4.5
2	21.2	1.0	–	20.1	0.9
3	21.7	1.2	–	21.3	1.6
4	21.4	2.4	–	19.8	1.9
5	23.1	11.1	85.7	14.8	3.1
6	33.1	23.2	62.6	18.8	2.8
7	34.2	26.3	71.3	13.3	1.9
8	41.9	35.8	60.8	13.0	2.6
9	38.0	31.4	48.0	12.9	2.9
10	39.6	30.0	62.6	16.5	3.4

Source: HFCS Austria 2017, OeNB.

[1] – denotes missing estimates due to too few observations.

Finding 10: Social classes and accompanying functions of wealth align well with the wealth distribution

A way to identify social classes of households is to examine important functions of wealth.

We define three classes of households, which align with major functions of wealth (see annex 1, infographic A1):

1. Renters who do not own their home and mainly hold (financial) wealth for precautionary reasons.
2. Owners who are owner-occupiers and therefore use wealth by living in their own house or apartment. In the vast majority of cases, this house or apartment is also their single most valuable asset. They do not pay rent; much rather, living in their own home generates a rent, the imputed rent, which is a form of non-cash capital income.
3. Capitalists who own their home and either rent out additional real estate and/or own a business to generate cash income from wealth.

Chart 14 shows the corresponding incidence patterns across the net wealth distribution. One can clearly see that renters are predominantly located at the bottom, owners in the middle and capitalists at the top of the wealth distribution. While the incidence of capitalists at the top is predicted by theory as only successful companies will survive in the market, the rather straightforward sorting of renters and owners is less clear. Theoretically, households should be indifferent between renting and owning a home under the standard assumptions (strict life cycle preferences, no bequest motives, no credit constraints, rational behavior etc.). In practice, however, the conditions of the standard model are violated. Households care about bequests (both as recipients and as givers), face borrowing constraints (like downpayment requirements) and show less-than-fully-rational behaviour, and on top of that the tax system often favors ownership over renting.

In Fessler and Schürz (2018b) we show that these patterns emerge in all countries in Europe for which data are available as well as the U.S.A. The points in the distributions where owners become more dominant than renters and capitalists

Chart 14

Social Classes in Austria regarding wealth

Share

Net wealth distribution

—— Renters ····· Owners ···· Capitalists
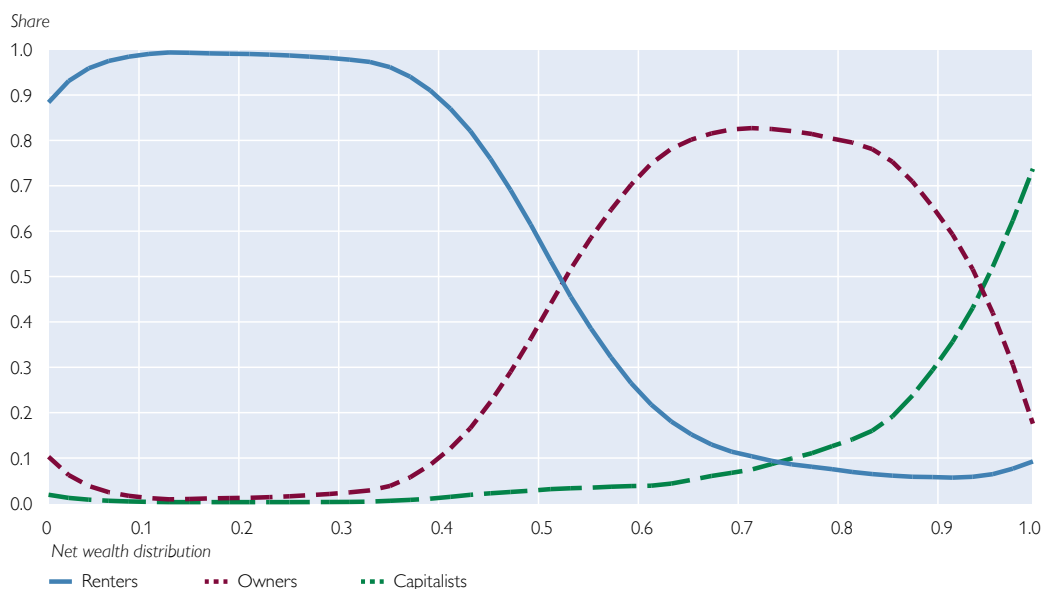
Source: HFCS Austria 2017, OeNB.

become more prevailing than owners differ substantially across countries and are likely influenced by institutional differences. In countries where high leverage is more common when buying a home and rental markets are less developed one also finds more owners at the very bottom of the distribution. Using the U.S.A., for which wealth surveys from the 1960s are available, as an example, one can also illustrate the rise of the middle class, which is shown by an increasing share of owners in the middle of the distribution.

3 The joint distribution of income, consumption and wealth

The seminal report of the Stiglitz-Sen-Fitoussi Commission (2009) analyzing income, consumption and wealth jointly is considered state of the art in household finance research. The Commission's recommendation number 3 was to "consider income and consumption jointly with wealth" at the household level in order to comprehensively analyze the well-being of households. On the one hand, income is partly used to save and thus generates wealth. On the other hand, accumulated wealth generates income directly through cash income from wealth accumulated in savings accounts, stocks or other financial assets as well as real assets which are rented out. On top of that, accumulated housing wealth produces noncash income in the form of imputed rent through owner-occupied housing (see our finding 10 above).

While the HFCS does include all three items, it cannot deliver all of them in equally great detail, because of the extensive burden such an approach would put on respondents and in view of the resulting problems with unit nonresponse and item nonresponse.

That is why an international effort organized and coordinated by the OECD and Eurostat has been trying for years to bring together several microdata sources with a different focus to shed some light on the joint distribution of wealth, income,

and consumption (see also an older paper by OECD, 2013). This effort aims at statistically matching the available data sources to generate a comprehensive view of household finances. The term statistical matching refers to a procedure that combines multidimensional information collected from similar households and stored in different data sources. Producing an exact match in the sense of sourcing the whole range of information from a single household is not possible.

The so-called Haig and Simons definition measures income (Y) as equal to consumption (C) plus the change in net wealth δNW realized over an income accounting period.[16] This is a measure of potential consumption. It defines the amount one could consume or transfer without changing total net wealth. Thus, according to the Haig and Simons definition:

$$Y = C + \delta NW$$

However, it is difficult to measure the real change in net wealth as substantial amounts of assets will not be realized or distributed. Thus, the change is not covered in surveys. It is easier to focus on net wealth by using the HFCS data, income data from EU-SILC and consumption data from the HBS.

An important result of a common consideration of C, Y and NW for a household is the following: Measures of onedimensional inequality understate the level of inequality and the growth of inequality.

The following section is built on the matching procedure used by Eurostat (see also Lamarche, 2017), which we slightly adapted to our purpose of describing income and consumption jointly with wealth as proposed by the Stiglitz-Sen-Fitoussi Commission (2009). See the annex 3 for details on the matching procedure.[17]

We use the findings derived from matching the data from the HFCS, the Austrian part of the EU-SILC as well as the HBS in Austria for cross-checks with the findings from the HFCS alone.

Table 5 reports the share of households as well as the level of net wealth depending on the position of a household in the joint distribution of income and consumption. We group households for both income and consumption into three groups: the bottom 20%, the middle 60% and the top 20% of the distribution. This yields nine cells.

According to the results of the matching process, most households (35%) are in the middle 60% of both the income and the consumption distribution, with the net wealth levels selected to the 60%/60% cell spanning the broad range from about EUR 3,000 for the 10th percentile to about EUR 510,000 for the 90th percentile. The distribution around this middle of the income and consumption space shows an interesting symmetry: roughly the same share of households – namely 5% to 6% – was mapped to the top 20% income/top 20% consumption corner as well as to the bottom 20% income/bottom 20% consumption corner. Only 2% to 3% of all households were classified in the top 20% income/bottom 80% consumption corner and vice versa. Net wealth levels are relatively diverse across the board. However, they generally increase with both consumption and income. We accordingly

---

[16] *Note that this definition of income differs from the income used in the analysis, as e.g. developments in the valuation of real estate or transfers are not taken into account in the income concept in the empirical analysis.*

[17] *We use the hotdeck command in Stata provided by Adrian Mander for the matching procedure.*

Table 5

Joint distribution of wealth, income and consumption

|	Consumption		
	Bottom 20%	Middle 60%	Top 20%
Income	%		
Bottom 20%			
Share of households	5.3	10.4	2.8
	EUR thousand		
P10 net wealth	−0.4	0.7	2.4
Median net wealth	9.8	25.0	74.3
Mean net wealth	55.2	109.7	197.8
P90 net wealth	165.8	285.9	459.6
Middle 60%	%		
Share of households	11.3	35.0	10.3
	EUR thousand		
P10 net wealth	0.5	3.1	10.8
Median net wealth	28.7	92.3	202.9
Mean net wealth	152.1	243.2	392.9
P90 net wealth	371.0	512.7	723.5
Top 20%	%		
Share of households	2.0	10.9	5.7
	EUR thousand		
P10 net wealth	1.1	5.6	19.0
Median net wealth	66.6	191.2	272.8
Mean net wealth	175.4	331.5	512.4
P90 net wealth	472.8	737.4	941.0

Source: HFCS Austria 2017, OeNB; EU-SILC 2016, HBS 2014/15, Statistics Austria.

Note: This table shows net wealth levels as reported in the HFCS by group of income and consumption based on EU-SILC and HBS data. A complete match of the underlying micro data is not possible with the described matching strategy, hence the share of households does not sum up to 100%. Income and consumption information are equivalized based on the OECD method.

find the highest levels of wealth in the cell with the highest level of income and consumption. A case in point is the 90th percentile with close to EUR 1 million in this cell, which is also the cell with the highest median (around EUR 270,000).

Looking at the whole distribution of net wealth (chart 15) we group households in the following way. The first group (denoted as group I) is defined as belonging to the bottom 20% in either income or consumption and comprises about 32% of the total household population. Therefore, this group combines households in the first row and column of table 5. The second group (denoted as group II) is given by the households belonging to the middle of the distribution in both dimensions (middle cell with about 35% of households). All remaining households (about 27% of the household population) form the third group (denoted as group III).

The wealth levels of households are very diverse across all three groups in terms of both income and consumption. In each of the three categories, the distribution of wealth starts in the negative range and goes up to more than EUR 1 million. Belonging to a higher stratum in terms of income and consumption comes with relatively higher levels of net wealth. The line for group III (dark blue) in chart 15 lies above the one for group II (red), which in turn is above group I (light blue line). The latter, however, merely reflects a positive correlation of the three

Chart 15

Joint distribution: net wealth by income-consumption groups

EUR thousand
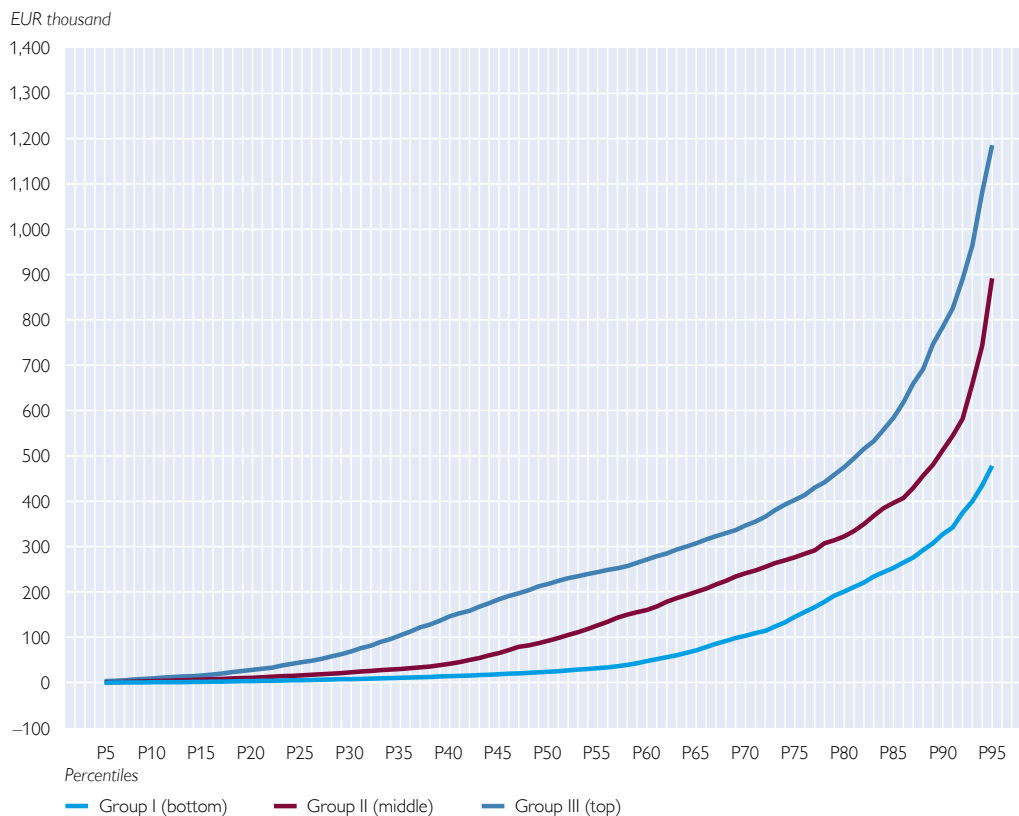
Source: HFCS Austria 2017, OeNB; EU-SILC 2016, HBS 2014/15, Statistics Austria.

indicators under consideration. The result seems to be more pronounced for the higher wealth levels.

Investigating the same information based solely on the HFCS (see annex 3, table A9) reveals a higher share of households, relative to the matched data, in the two extremes of the bi-dimensional distribution of income and consumption (bottom-bottom as well as top-top). It seems that some form of mean tendency is inherent in the matching technique even if the information available in all underlying datasets allows for a relatively fine stratification in the matching procedure. The result for the diversity of wealth levels across the three groups defined by the income-consumption space, however, remains largely unchanged.

4 Concluding remarks

The HFCS data are informative for analyses of the wealth distribution. Wealth is a lot more unequally distributed than income. A large heterogeneity across households is a main feature of the distribution of wealth.

Wealth inequality in Austria is high in comparison to other European countries and has remained rather stable across the three waves of the HFCS from 2010 to 2017. The share held by the top 10% of households in total net wealth was 56.4% in 2017, which is a slight increase compared with the second wave in 2014.

The level of indebtedness of Austrian households is rather low. More than two-thirds of Austrian households do not have any debt.

Subjective perceptions of income and wealth have become increasingly important in economics. We show the importance of households' self-perception of wealth for their saving behavior. With regard to preferences, re-introducing an inheritance tax in Austria – as recommended by the OECD – was opposed by a majority of reference persons.

In Austria, even wealthy households tend to invest rather conservatively. The largest share of wealthy households in Austria does not invest in risky assets at all, and if they do so, they do not invest a higher share of their financial assets than low wealth households.

For the first time, Austrian data on income, consumption and wealth coming from different surveys have been matched. Qualitatively the results based on the HFCS alone were found to be very similar to the findings obtained with the matching exercise. Thus, our conclusion is that the HFCS is adequate for an analysis of the joint distribution of income, consumption and wealth, but that further theoretical work is needed.

An issue that remains is that the HFCS is fraught with serious difficulties regarding the measurement of the top of the wealth distribution.

References

Albacete, N., M. Andreasch and P. Lindner. 2018a. Verschuldung der privaten Haushalte in Österreich. Statistiken Sonderheft. OeNB.

Albacete, N., S. Dippenaar, P. Lindner and K. Wagner. 2018b. Household Finance and Consumption Survey 2017. Methodological Notes for Austria (third wave). OeNB.

Andreasch, M. and P. Lindner. 2016. Micro- and macrodata: a comparison of the Household Finance and Consumption Survey with financial accounts in Austria. In: Journal of Official Statistics 32(1).

Davies, J. B., and A. F. Shorrocks. 2000. The distribution of wealth, In: Atkinson, A. and F. Bourguignon (eds.). Handbook of income distribution. Elsevier. Chapter 11. 605–75.

D'Orazio, M., M. Di Zio, and M. Scanu. 2006. Statistical matching – theory and practice, John Wiley & Sons Ltd. West Sussex. England.

Dimmel, N., Hofman, J., Schenk, M. and M. Schürz 2017. (eds.) Handbuch Reichtum. Neue Erkenntnisse der Ungleichheitsforschung. Studienverlag.

ECB. 2009. Survey data on household finance and consumption. Research summary and policy use. Occasional Paper Series 100. January.

ECB. 2016. The Household Finance and Consumption Survey: results from the second wave, Statistical Paper Series. December (18).

ECB. 2016b. Methodological Report. Statistical Paper Series. December (17).

Fessler, P., P. Lindner and M. Schürz. 2016. Eurosystem Household Finance and Consumption Survey 2014 – first results for Austria (second wave), In: OeNB Monetary Policy & the Economy Q2/16. 34–95.

Fessler, P., P. Mooslechner and M. Schürz. 2012. Household Finance and Consumption Survey of the Eurosystem 2010 – first results for Austria. In: OeNB Monetary Policy & the Economy Q3/12. 24–62.

Fessler, P. and M. Schürz. 2015. Reich bleiben in Österreich in: Wirtschaft und Gesellschaft 39 (3). 343–360.
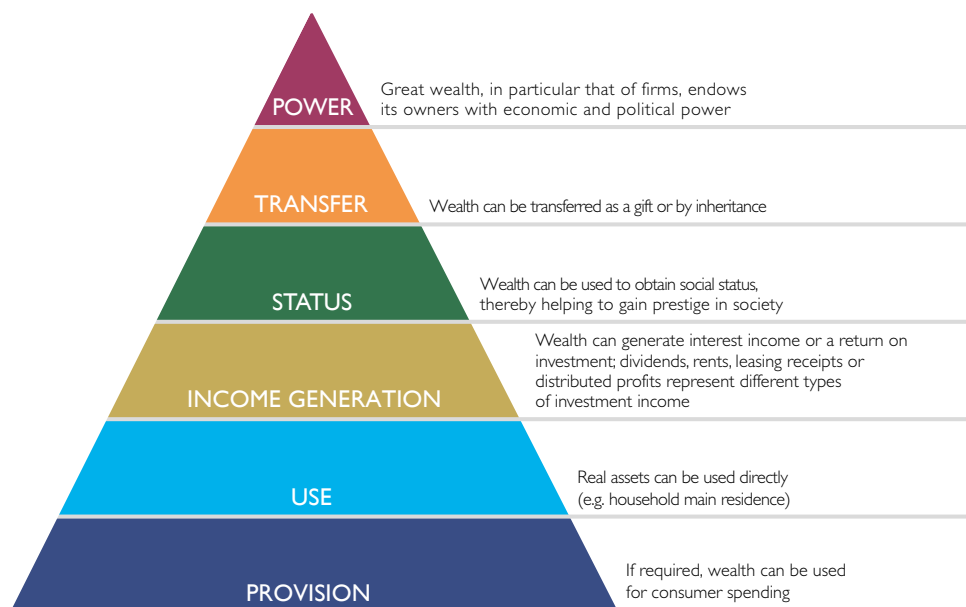
Fessler, P. and M. Schürz. 2017. Zur Verteilung der Sparquoten in Österreich. In: OeNB Monetary Policy & the Economy Q3/17. 13–33.

Fessler, P. and M. Schürz. 2018a. Private wealth across European countries: the role of income, inheritance and the welfare state. In: Journal of Human Development and Capabilities 19 (4). 521–49. https://www.tandfonline.com/doi/full/10.1080/19452829.2018.1507422.

Fessler, P. and M. Schürz. 2018b. The functions of wealth: renters, owners and capitalists across Europe and the US. OeNB Working paper 223.

Kennickell, A. B. 2018. The tail that wags: differences in effective right tail coverage and estimates of wealth inequality. Mimeo.

Lamarche, P. 2017. Measuring income, consumption and wealth jointly at the micro-level. Mimeo.

OECD. 2013. OECD framework for statistics on the distribution of household income, consumption and wealth. OECD Better Life Initiative.

OECD. 2017. Economic Surveys. Austria.

OECD. 2018. The role and design of wealth taxes.

Statistics Austria. 2017. Standard-Dokumentation Metainformationen (Definitionen, Erläuterungen, Methoden, Qualität) zu EU-SILC 2016.

Statistics Austria. 2018. Standard-Dokumentation Metainformationen (Definitionen, Erläuterungen, Methoden, Qualität) – Konsumerhebung 2014/15. Forthcoming.

Stiglitz-Sen-Fitoussi Commission. 2009. Report by the Commission on the measurement of economic performance and social progress. www.insee.fr/fr/publications-et-services/dossiers_web/stiglitz/doc-commission/RAPPORT_anglais.pdf.

Vermeulen, P. 2016. Estimating the top tail of the wealth distribution. ECB Working Paper 1907.

Annexes
Annex 1

Functions of wealth

POWER — Great wealth, in particular that of firms, endows its owners with economic and political power

TRANSFER — Wealth can be transferred as a gift or by inheritance

STATUS — Wealth can be used to obtain social status, thereby helping to gain prestige in society

INCOME GENERATION — Wealth can generate interest income or a return on investment; dividends, rents, leasing receipts or distributed profits represent different types of investment income

USE — Real assets can be used directly (e.g. household main residence)

PROVISION — If required, wealth can be used for consumer spending

Note: As wealth increases, the number of the possible functions of wealth also tends to increase.

Annex 2
Net wealth over socio-economic characteristics

Net wealth by size of household

	Share	Median	Mean	Mean-to-median ratio
	%	EUR thousand	EUR thousand	
Singles	37.0	19.7	147.9	7.5
Two persons	35.1	141.5	246.7	1.7
Three persons	12.7	159.8	322.4	2.0
Four persons	9.6	208.5	338.0	1.6
5+ persons	5.6	242.5	634.8	2.6

Source: HFCS Austria 2017, OeNB.

<div style="text-align: right">Table A2</div>

Net wealth by age of main respondent

	Share	Median	Mean	Mean-to-median ratio
	%	EUR thousand	EUR thousand	
16–29 years	10.3	14.0	140.2	10.0
30–39 years	15.2	41.4	138.8	3.4
40–49 years	17.3	124.6	291.3	2.3
50–64 years	28.5	158.8	370.3	2.3
65–74 years	15.9	106.4	223.4	2.1
75+ years	12.8	76.4	182.8	2.4

Source: HFCS Austria 2017, OeNB.

<div style="text-align: right">Table A3</div>

Net wealth by education of main respondent

	Share	Median	Mean	Mean-median ratio
	%	EUR thousand	EUR thousand	
Compulsory education or below	14.8	30.8	128.2	4.2
Apprenticeship, vocational school	38.8	53.1	171.9	3.2
Upper secondary, school-leaving certificate	33.5	108.8	286.7	2.6
University, technical college	12.9	228.2	531.9	2.3

Source: HFCS Austria 2017, OeNB.

<div style="text-align: right">Table A4</div>

Net wealth by gender of single households

	Share	Median	Mean	Mean-to-median ratio
	%	EUR thousand	EUR thousand	
Male	15.7	24.7	154.2	6.3
Female	21.3	16.7	143.3	8.6

Source: HFCS Austria 2017, OeNB.

<div style="text-align: right">Table A5</div>

Net wealth by household main residence ownership structure

	Share	Median	Mean	Mean-to-median ratio
	%	EUR thousand	EUR thousand	
Owner	45.9	278.9	476.3	1.7
Renter	46.8	14.4	57.3	4.0
Free usage	7.2	19.1	63.8	3.3

Source: HFCS Austria 2017, OeNB.

Table A6

Net wealth by occupation of main respondent

	Share	Median	Mean	Mean-to-median ratio
	in %	in Tsd EUR	in Tsd EUR	
Self-employed	5.3	254.0	812.0	3.2
(Skilled) blue-collar worker	15.3	34.4	137.2	4.0
White-collar worker	29.1	82.4	233.9	2.8
Civil servant	3.3	215.0	301.0	1.4
Farmer	1.0	896.5	1.993.8	2.2
Pensioner	36.6	97.6	198.7	2.0
Unemployed	4.9	3.1	74.7	23.7
Other	4.6	81.4	284.8	3.5

Source: HFCS Austria 2017, OeNB.

Annex 3
Matching procedure

With a view to measuring the joint distribution of various indicators, all required information would ideally be collected in a single source of data. However, this approach is not always feasible, for various reasons including constraints on the survey response burden. Asking all the questions of the HFCS and all Household Budget Survey questions in one interview would definitely put a lot of the burden onto respondents. If some of the desired information cannot be asked in a single survey but is available from other data sources, matching techniques are an option to generate a single dataset for analysis (if it is not possible to link the data directly using common respondent identifiers, which would be the best of all second-best solutions).

D'Orazio et al. (2006) introduce and summarize the different matching techniques used in the literature. Statistical matching of a pair of datasets uses a type of modeling strategy to assign values from one dataset to another, based on the similarity of characteristics observed in the same way in both datasets. Thus, the accuracy of the match depends on the nature and strength of the relationship between the common variables and the variables to be matched. Generally, such matches are made with uncertainty, and when certain key variables are not available for matching, the matches may also exhibit a bias.

We follow the approach laid out in Lamarche (2017) applying a so-called stratified random hotdeck procedure. For this procedure we generate precisely defined boxes based on the stratification information and then randomly pick one observation from the donor data and attach it to an observation of the recipient dataset of the same stratification box. A donor observation can be picked multiple times, and if there is only one observation in a particular stratum in the donor dataset this observation is picked. This procedure results in a dataset that includes all the desired information.

In our application we take the HFCS and statistically match first the Austrian part of the EU-SILC 2016 and then the most recent HBS (2014) for Austria.[18]

---

[18] See Statistics Austria (2017 and 2018) for the survey documentation for both EU-SILC and HBS.

Matching information

	Description	Number of categories	Coding	Used in the matching of
Matching information				
Age	Age of household head	8	Up to (but excluding) 20 20 to (but excluding) 30 30 to (but excluding) 40 40 to (but excluding) 50 50 to (but excluding) 60 60 to (but excluding) 70 70 to (but excluding) 80 80 and above	HFCS-EU-SILC
	Age of household head	3	Up to (but excluding) 30 30 to (but excluding) 60 60 and above	HFCS-HBS
Education	Level of education of household head	3	Max. apprenticeship Middle eduction level (with a labor market-relevant qualification) University	HFCS-EU-SILC HFCS-HBS
Household structure	Type of household classified with respect to age of household members and their relationship	6	Single – no children Couple – no children More than 3 adults – no children Single with children Couple with children Three or more adults with children	HFCS-EU-SILC HFCS-HBS
Tenure status	Ownership structure of main residence	2	Owner (including free usage) Renter	HFCS-EU-SILC HFCS-HBS
Income	Disposable household income	5	1st quintile 2nd quintile 3rd quintile 4th quintile 5th quintile	HFCS-HBS
Wealth indicator	Size of main residence	5	1st quintile 2nd quintile 3rd quintile 4th quintile 5th quintile	HFCS-EU-SILC HFCS-HBS

Source: HFCS Austria 2017, OeNB; EU-SILC 2016, HBS 2014/15, Statistics Austria.

The stratification is done as outlined in table A7. We take all the appropriate available information into account, which implies that the set of information for stratification is dataset-dependent. Generally, the matching is based on the age and education of the main income earner (household head), household structure, tenure status and information on income and wealth. As we need to categorize continuous information such as income we use quintiles or age brackets for example.

Matching information

There is a tradeoff between how granular the stratification (number of specific boxes as strata) can be and the number of empty strata implying a loss of information due to the lack of donor observations. The loss of information implies a bias in any analysis based on the matched data. Using only very broad and thus fewer strata introduces a bias from the matching process. In this exercise, we aim at having as many strata as possible without losing too many observations, using as much information for stratification as possible and ensuring that matching will yield approximately

Table A8

Number of matching strata

	Matching HFCS and EU-SILC	Matching HFCS and HBS
Number of possible strata	1,440	2,700
Occupied strata in the HFCS	591	819
Occupied strata in donor data	719	1,039
Number of strata in HFCS without any complete cases in donor data	70	164
Number of strata with only 1 complete case	177	348
Number of strata with only 2–5 complete cases	238	356
Approximate number of households with missing matched information	79	159

Source: HFCS Austria 2017, OeNB; EU-SILC 2016, HBS 2014/15, Statistics Austria.

Table A9

Joint distribution of wealth, income and consumption

	Consumption		
	Bottom 20%	Middle 60%	Top 20%
Income	%		
Bottom 20%			
Share of households	7.5	12.0	0.5
	EUR thousand		
P10 net wealth	0.0	0.0	−2.5
Median net wealth	6.6	12.2	17.8
Mean net wealth	78.3	90.8	259.4
P90 net wealth	235.4	262.4	817.8
Middle 60%	%		
Share of households	11.2	41.7	7.1
	EUR thousand		
P10 net wealth	4.2	4.4	8.0
Median net wealth	85.8	75.3	188.5
Mean net wealth	166.6	191.8	310.7
P90 net wealth	422.2	416.2	725.9
Top 20%	%		
Share of households	1.3	11.7	7.0
	EUR thousand		
P10 net wealth	10.0	18.6	20.8
Median net wealth	204.2	219.0	340.6
Mean net wealth	505.7	443.9	760.5
P90 net wealth	1,127.1	932.0	1,445.5

Source: HFCS Austria 2017, OeNB.

Note: This table shows net wealth levels by group of income and consumption based on the HFCS alone. Income and consumption information are equivalized based on the OECD method.

the same number of missing observations from both data sources (EU-SILC and HBS) due to the lack of donor observations. This general idea yields the stratification laid out in table A7.

Table A8 (below) indicates the number of possible, occupied, and empty strata in the matching procedure. The product of the categories used in the stratification

implies a possible or maximum number of strata that is fixed. On average, are about 80 to 160 households (varying across implicates of imputations and depending on the dataset to be matched) with missing matched information. This means that in these cases the stratification from above will not produce any donor household in the donor dataset for matching income and consumption information to the HFCS.

Raw observations without using survey information (i.e. independent of weights and imputation methods) and equivalence scales are the foundations of the matching process. Results in the main paper are based on equalized income and consumption based on the OECD equivalence scale.

Since the joint distribution is based on three datasets, problems related to the statistical matching procedures are likely to multiply.

About 7% of households cannot be matched. However, since their wealth levels range from EUR 1,500 (P10) to EUR 500,000 (P90), they are not concentrated in a particular section of the net wealth distribution.

Table A9 shows the information on the joint distribution based solely on HFCS data and is discussed in the main text.