

# Research Update

Economic Analysis and Research Department

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## Editorial

by Doris Ritzberger-Grünwald  
Director of the Economic Analysis and Research Department

### Do good and talk about it

Senior managers, politicians, and VIPs know how to do it: They promote their activities all the time. If they have had success, if they have earned money, if they want to go on, they speak about it.

And this works quite well, as we all know.

But when it comes to the European Union, things are completely different. Hardly anybody speaks about the EU. And if so, the EU is blamed for things which are not going so well. Food retailers blame the EU for setting ridiculous standards which have to be met by, say, cucumbers. Tourism managers blame the EU for menus which have to list all possible ingredients, but are mainly confusing.

Economic policymakers tend to behave in a similar way, by putting the responsibility for somehow unpopular measures on European institutions. Supervisors are blaming the EU for demanding high capital adequacy ratios. Central bankers are blaming Brussels for the decision not to print 500 EUR banknotes any longer. Fiscal policymakers are blaming the EU for setting rigid benchmarks which have to be met by all countries.

As a result, many people have lost their EU enthusiasm. If you have to ask them one day if they would prefer to stay or to leave, you may end up with more Leave than Yes votes.

So, please stop blaming the EU and start to explain. Or, even better, talk about the many advantages which go along with this project. To do so, the coming holidays are a good opportunity. Traveling without the need to change money in the last minute, without paying incredibly high banking fees, or without queuing endlessly at the Italian border – this was not always the case. So enjoy your holidays and the EU – and talk about it!

Doris Ritzberger-Grünwald

## Economic recovery in 2016 after four years of weak growth

### Economic outlook for Austria from 2016 to 2018 (June 2016)

According to its economic outlook of June 2016, the Oesterreichische Nationalbank (OeNB) expects the Austrian economy to stage a modest recovery, with GDP growth accelerating to 1.6% in 2016 after four years with growth rates below 1%. The increase in growth is driven in particular by two special domestic factors which both generate growth by stimulating demand: the coming into force of the income tax reform in January 2016 and the deficit-financed expenditure on asylum seekers and recognized refugees. For both 2017 and 2018, GDP growth is currently projected to reach 1.5%. Compared with its previous economic outlook of December 2015, the OeNB has thus revised downward its growth forecast for 2016 and 2017 by 0.3 percentage points. HICP inflation is expected to reach 1.0% in 2016, reflecting low oil and commodity prices, but will climb thereafter, to 1.7% in 2017 and 1.9% in 2018. The unemployment rate (Eurostat definition) will rise to 6.0% in 2016 and peak at 6.1% in 2017, before easing back slightly to 6.0% in 2018.

economies of the U.S.A., Japan and the United Kingdom in late 2015 and in early 2016 undershot expectations more or less considerably. Despite the confluence of a range of stimulating effects, global GDP growth is projected to remain below average at under 3% in 2016.

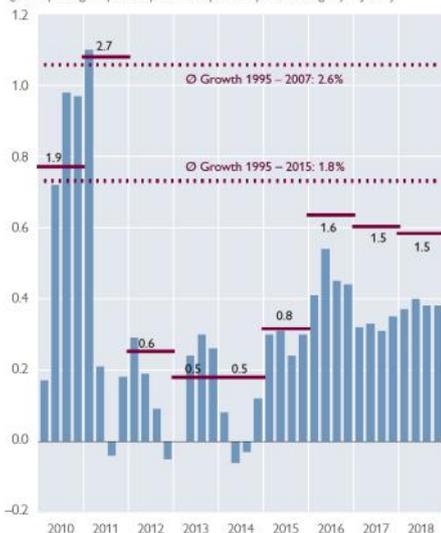
Austrian GDP growth will accelerate to well above 1% for the first time in four years. In view of the very modest pace of growth in the world economy, the recovery of the Austrian economy is attributable to two special domestic factors: the income tax reform that took effect in early 2016 and the additional (deficit-financed) public expenditure on refugees. These two factors will support GDP growth in 2016 by stimulating private and government consumption. The positive effects of the income tax reform will materialize gradually in the course of 2016. Compared with the December 2015 outlook, the assessment of the reform's impact remains fundamentally unchanged, as does the fact that some of the

compensatory measures designed to finance the tax reform must not be taken into account according to ESCB rules, which means that the impact on growth will tend to be overestimated. By contrast, the extent of the impact of additional public expenditure on refugees was revised downward compared with the December 2015 outlook. The simulation calculations now reflect the maximum intake of asylum applications announced by the Austrian government for the period from 2016 to 2018, which is visibly lower than the assumptions of December 2015. In addition, low inflation will contribute to a significant rise in real disposable income, causing both private consumption and the saving ratio to increase markedly in 2016.

#### Main results of the forecast

##### Real GDP growth

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



Source: WIFO, Statistics Austria, OeNB June 2016 outlook.

##### Harmonised Index of Consumer Prices (HICP)

Annual change in %



##### Unemployment rate



In early 2016, growth in the world economy was hit by the further decline in oil and commodity prices and by the turmoil in Chinese equity markets and its fallout on global equity markets. The widely anticipated further slowdown in the pace of economic growth in China and other emerging markets did not occur, however. In the end, growth in emerging markets – particularly in China – in both the fourth quarter of 2015 and the first quarter of 2016 was in line with expectations prevailing in December 2015. By contrast, growth in the major industrialized

In the area of investment in equipment, whose cycle leads the business cycle, growth had accelerated already in the course of 2015. By early 2016, investment in equipment was exceeding the levels attained in early 2008 in all subsegments. In other words, the economic crisis was over in this area. By contrast, investment in housing and, particularly, civil engineering continues to remain below pre-crisis levels. Housing investment should gather momentum in both 2017 and 2018 in view of the housing initiative announced by the government, whereas growth

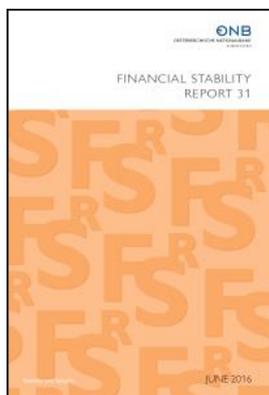
in investment in equipment is expected to taper off. As a result, the investment cycle is therefore expected to remain muted on the whole. The contribution made by net exports to GDP growth will even be negative in 2016, as import growth will exceed export growth due to the high import share of investment and private consumption. Once the special economic factors subside, causing growth in consumer demand to soften again, and once the investment cycle tapers off as expected, import growth will slacken in 2017, while export growth should continue to pick up until 2018. As a result, the contribution of net exports to GDP growth will be positive in both 2017 and 2018, despite small losses in export market shares.

As in recent years, labor market growth will be marked by a steep rise in labor supply over the entire forecast horizon, reflecting the growing number of recognized

asylum seekers and other migrants as well as the rising share of older and female labor force participants. Despite persistently high employment growth, unemployment, will continue to climb in both 2016 and 2017 and only drop slightly in 2018. Owing to the renewed fall in oil prices in early 2016, inflation will continue to ease until mid-2016 before rebounding slowly thereafter. Against this backdrop, average HICP inflation is expected to be 1.0% in 2016 and to climb to 1.9% by 2018. In view of the aforementioned special factors, the general government budget balance will deteriorate to  $-1.8\%$  of GDP in 2016 and subsequently improve to  $-1.1\%$  of GDP by 2018. The government debt ratio will shrink to 80.9% of GDP by 2018.

For further details (in German language only) see: <https://www.oenb.at/Presse/20160606.html>

## Austrian banking sector continues necessary adaptation process



In the first few months of 2016, the international financial markets saw a rise in volatility. Still, the nonstandard monetary policy measures the Eurosystem has taken over the last few years have, in general, contributed to restoring confidence in the financial markets. Moreover, they have facilitated the transmission of ECB key interest rate cuts, driving down lending rates across the euro area – a key prerequisite for favorable dynamics in the real economy, according to the 31st issue of the OeNB's Financial Stability Report.

In Austria, investment activity has started to recover since mid-2015, accompanied by an expansion of external financing in the corporate sector, to which both equity and debt contributed in roughly equal measure in 2015. The growth dynamics of corporate lending have remained rather subdued. While banks have tightened their lending conditions in the past few years, this move has not constrained corporate financing in Austria as corporate loan demand is still weak.

Housing loans to households have picked up since mid-2015, however. Yet, the pace of their expansion remained below the increase in residential property prices, which accelerated noticeably in the second half of 2015. In view of the high and still rising real estate prices the OeNB is paying special attention to housing finance. In this context, the OeNB supports the Financial Market Stability Board's recommendation to take preventive action by expanding the macroprudential toolkit in place for regulating real estate lending.

Austrian banks' profitability recovered significantly in 2015 as risk provisioning and write-downs decreased against 2014 and their CESEE subsidiaries made higher profits. Net interest income, which is the cornerstone of Austrian banks' business models, was still under pressure, however. In Austria, the decline of banks' net interest income was largely driven by a reduction in total assets, while in most CESEE countries, shrinking margins played a greater role. Banks will have to adjust their cost structures further to match lower business volumes. Currently, this mismatch is reflected in an unfavorable cost-to-income ratio by international comparison. Moreover, some CESEE subsidiaries of Austrian banks continue to carry high shares of nonperforming loans on their books.

The common equity tier 1 (CET1) ratio of the Austrian banking system improved further in 2015 through a combination of capital increases and a reduction in risk-weighted assets. The improvement was even more pronounced than that recorded by Austrian banks' European peers. However, additional efforts will be required to catch up with their international peers in this respect. Moreover, banks must prepare to fulfill the new regulatory requirements – e.g. the liquidity coverage ratio, the systemic risk buffer or the minimum requirement for own funds and eligible liabilities – that will (gradually) take effect in the years to come.

The OeNB's biannual Financial Stability Report provides regular analyses of financial stability-related developments in Austria and the international environment. In addition, it includes studies offering in-depth insights into specific topics related to financial stability.

For further details see [https://www.oenb.at/dam/jcr:9c2b972c-6ab9-44d3-a893-4100701553b0/fsr\\_31.pdf](https://www.oenb.at/dam/jcr:9c2b972c-6ab9-44d3-a893-4100701553b0/fsr_31.pdf)

## 200 years OeNB: President Draghi and Professors Eichengreen and Goodhart discuss past challenges and future perspectives of central banking

On June 1, 1816, Emperor Francis I. signed two decrees laying the foundation for the Oesterreichische Nationalbank. To celebrate its 200th birthday, the OeNB held an anniversary ceremony on June 2, 2016. After congratulatory addresses by Governor Nowotny, President Fischer and Chancellor Kern, three distinguished guests took the occasion to discuss the past and the future of central banking.



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Under the title “Delivering a symmetric mandate with asymmetric tools” ECB-President Mario Draghi elaborated on the challenges posed by the need to raise inflation when policy rates are close to the lower bound. He argued that while unconventional monetary policies come with additional complications – notably that given their novelty the public knows less about transmission channels and effects – they will ultimately be able to stimulate the economy even when policy rates cannot be lowered anymore.

Professor Eichengreen from UC Berkeley looked at the long-run evolution of central bank mandates. These mandates, for a long time rather simple exchange rate and later inflation targets, have recently become much more complex reflecting thereby the growing complexity of the economy. The need to fulfil several objectives now requires a reorganization of the decision making processes, raises the possibility of conflicting targets, makes communication with the public more delicate, and finally may lead to a redefinition of central bank independence.

In a similar vein, Professor Goodhart (London School of Economics) asked the question “Whither Central Banking?”. Over the last 150 years, he claimed, the history

of central banks has swung between periods of consensus and uncertainty. More recently, the 2008 financial crisis has ended the Great Moderation and the associated consensus on inflation targeting and central bank independence and has ushered in a new period of uncertainty. New instruments were introduced while the broadening of the mandate to include financial stability and notably macroprudential policies raise questions about the relationship between central bank and government. He concluded that the contours of the future consensus cannot be discerned yet.

You can watch the entire high ranking session as well as two interviews with Professors Eichengreen and Goodhart [here](#). Governor Nowotny’s introduction is available at the [OeNB website](#), while President Draghi’s speech can be downloaded from the [ECB](#).



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## First OeNB-University of Vienna Anniversary Visiting Professor Paul Mizen



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This year OeNB and the University of Vienna jointly welcomed the first “OeNB-University of Vienna Anniversary Visiting Professor” Paul Mizen from the University of Nottingham. Professor Mizen is a leading expert in monetary policy and his research interests span monetary economics, corporate finance and central banking. Paul Mizen has taught at numerous institutions, including the European University Institute in Florence and Princeton University. He has been a visiting scholar to the U.S. Federal Reserve, the European Central Bank, and the International Monetary Fund, among other institutions.

OeNB looks back at over a decade of regular Visiting Professors to the Bank. During these years the visiting professors were invited and hosted by our economic research division. The visiting professors used to give a series of academic lectures on key central bank topics to bank staff and the public. Starting in 2001 OeNB hosted many outstanding scholars under this program, among them Berry Eichengreen, Paul de Grauwe, Hyun Song Shin, Peter Bossaerts, Peter Howitt, Markus Brunnermeier, Andrea Galeotti, Jean Charles Rochet and Robert Townsend and most recently, Nobuhiro Kiyotaki. To mark the 200 year’s anniversary of the Austrian Central Bank

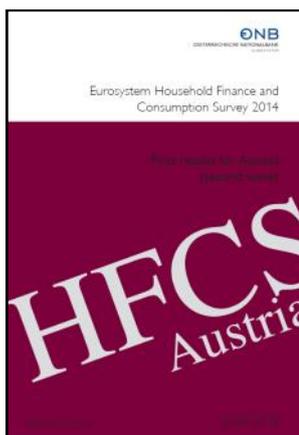
(OeNB), the bank has decided to continue this tradition on a broader basis and created - in cooperation with the Faculty of Business, Economics and Statistics of the University of Vienna – the “OeNB Anniversary Visiting Professorship in Monetary and Financial Economics.”

Professor Mizen visited Vienna during May 2016. During his stay at Vienna, he taught a PhD-course in monetary economics at the University of Vienna, gave a public lecture, a research seminar, participated in a public policy discussion and discussed ongoing research projects with staff at the University and at OeNB.

The public lecture “What Lessons Can We Learn from the Global Financial Crisis?” which he gave on May 11 at the beginning of his stay, gave a panoramic overview of the many interlocked problems that lead to the big financial crisis of 2007/2008 and discussed the policy options that central banks and policy makers more generally have now. The public policy discussion, which stood at the end of his stay, addressed the question “Does Monetary Policy Work Anymore?” In this discussion Paul Mizen defended the broad policy stance that central banks have taken since the crisis and engaged in a very lively debate with the audience.

The next “OeNB-University of Vienna Anniversary Visiting Professor” will be Professor Charles Calomiris from Columbia University who will be visiting Vienna in 2017.

## OeNB Workshop “Eurosystem Household Finance and Consumption Survey 2014: First Results for Austria,” June 20, 2016



The OeNB-Workshop on the 20th of June 2016 gave a first overview of the [results of the second wave of the Eurosystem HFCS in Austria](#).

The HFCS provides an extensive data source to examine a wide range of issues in monetary policy and financial stability. While almost all households hold financial assets, less than one-half of Austrian households

own their main residence. Only about a third of households have debt, most commonly in the form of collateralized loans to finance the main residence. The amount of real assets exceeds that of financial assets held by households.

About 16% of households have debt collateralized by their main residence. The median of about EUR 60,000 and the mean of around EUR 90,000 mainly reflect the current status of repayment of loans taken out to finance homes.

Some 21% of households have uncollateralized debt. Households having large debt are not necessarily those that could pose a risk to financial stability. As a rule, they can easily service their debt or, if necessary, have sufficient financial assets to repay it. Conversely, the households that are most likely to have difficulties in meeting payments are usually those that have particularly low debts incurred for consumption purposes. Overall, household debt is in general relatively low in Austria. This is true both for the percentage of indebted households and the level of debt, which is mainly due to the high share of the rental housing market in the country. For this reason, the risks to financial stability in Austria are low.

At the beginning of the Workshop Andrea Brandolini, Head of the Statistical Analysis Directorate from the Banca d'Italia, gave a presentation with the title [„Wealth Distribution and Central Banks“](#).

For further details see also: [www.hfcs.at](http://www.hfcs.at)

## Workshop & VOSTA-Fridayseminar: “The Use of Cash and Payment Behavior,” June 28, 2016

The past two decades have seen tremendous technological advances in the area of point-of sale payments, and the dynamics of change continue to be very high. In this context, the question arises whether cash will disappear? An answer to this question requires knowledge about the use of cash.

To shed light on these issues, the research department and the payment strategy department jointly organized a workshop on June 28. Michaela Baldassari and Anton Schautzer, both from the OeNB, discussed facts about recent currency circulation as well as results from surveys that the OeNB has conducted about the use of cash and large denominations. Heike Wörle from the Deutsche Bundesbank presented evidence about the payment behavior of the German population as well as hypotheses about why Germany is a cash-intensive economy. Helmut Stix from the OeNB argued that demand for cash has increased in many economies over the past decade – which is at odds with the ongoing innovations in payment technologies. His research shows that the observed increases are to a large extent related to financial and banking crises and that foreign demand and domestic hoarding supersede the transactional demand for cash.

Finally, Friedrich Schneider (Johannes Kepler University Linz) gave a Friday seminar lecture on the relationship between shadow economic activities and the use of cash. Specifically, he presented results from a recent survey that was conducted in Austria as well as some estimates about the use of cash for tax evasion and for various criminal activities. He concluded that, albeit cash plays an important role for such activities, its role is considerably overestimated.



M. Baldassari, H. Wörle, M. Summer, F. Schneider, S. Augustin, H. Stix, A. Schautzer (from right to left).

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## „Schwerpunkt Außenwirtschaft 2015/2016“



On June 14, 2016, the fifth edition of “Schwerpunkt Außenwirtschaft” (“Focus on External Trade”) was presented to the public at a half-day conference at the OeNB. This annual publication discusses issues relevant for Austria’s external sector, both regarding current developments and specific topical themes. The publication is produced jointly by the OeNB and

the Austrian Economic Chamber, reflecting both institutions’ keen interest and expertise in Austria’s external economic relations.

The special topic of this year’s edition is the so-called “Transatlantic Trade and Investment Partnership” or “TTIP”. Since the unanimous adoption of the mandate for negotiation by the 28 EU Member States, 13 negotiation rounds between the EU and the US on TTIP have been held until now. 16 internationally renowned scientists,

policy advisers and policy makers share their insights on this important, complex and quite controversial trade arrangement in nine contributions on over 140 pages of analysis. The special topic covers economic and legal analyses of TTIP and offers explanations for the political dynamics of the negotiations. The institutional framework of the EU trade policy, the potential economic effects of TTIP, and the EU and US perspectives from a political-science angle are juxtaposed. The sectorial competitiveness of the Austrian export industry is studied as well as the value added of Austrian exports. The EU draft of the investment court is discussed. Finally, a prospective TTIP is compared with the Trans-Pacific Partnership (TPP) of the US with 11 Pacific States. Hard copies of the book can be bought in bookstores; in addition, an electronic version in pdf format can be downloaded for free at:

<https://www.oenb.at/dam/jcr:55df7deb-24e2-4f32-96c5-9fe9562fe962/kronberger%20ausseiwirtschaft%202016%20e.pdf>.

Previous editions can be found at:

<https://www.oenb.at/Publikationen/Volkswirtschaft/schwerpunkt-ausseiwirtschaft.html>.

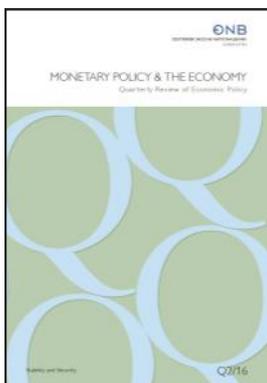
## OENB PERIODICAL PUBLICATIONS

From Q1/2016, OeNB publications will be available in electronic format only (<https://www.oenb.at/en/Publications.html>), as the OeNB has decided to follow the international trend toward digital publishing.

We invite you to subscribe to our newsletter at <https://oenb.at/en/Services/Newsletter.html> to be notified via e-mail that a new issue is available.

<http://www.oenb.at/en/Publications/Economics.html>

### List of all Publications since 2001 (by staff of the Economic Analysis and Research Section)



#### Monetary Policy & the Economy Q2/16 (forthcoming)

[Economic recovery in 2016 after four years of weak growth – Economic outlook for Austria from 2016 to 2018 \(June 2016\)](#) (Christian Ragacs, Klaus Vondra)

[Eurosystem Household Finance and Consumption Survey 2014. First results for Austria \(second wave\)](#) (Pirmin Fessler, Peter Lindner, Martin Schürz)

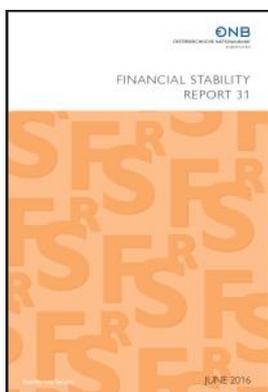


#### Focus on European Economic Integration Q2/16

[The influence of sovereign bond yields on bank lending rates: the pass-through in Europe](#) (Markus Eller, Thomas Reiningger)

[Understanding the drivers of capital flows into the CESEE countries](#) (Markus Eller, Florian Huber, Helene Schuberth)

[See more](#)



#### Financial Stability Report 31

[The distribution of residential property price changes across homeowners and its implications for financial stability in Austria](#) (Nicolás Albacete, Pirmin Fessler, Peter Lindner)

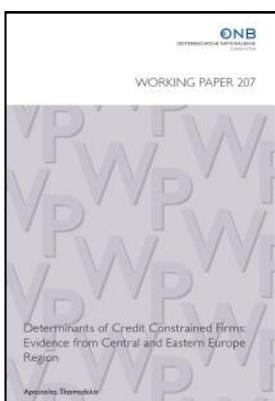
[Minimum requirement for own funds and eligible liabilities \(MREL\) – initial assessment for Austrian banks and selected subsidiaries in the EU](#) (Valentina Metz, Konrad Richter, Philipp Weiss, Bernhard Rottensteiner, Daniel Unterkofler, Johannes Langthaler, Patrick Pechmann)

[Corporate financing in Austria in the run-up to capital markets union](#) (Helmut Elsinger, Robert Köck, Marcel Kropp, Walter Waschiczek)

[See more](#)

## WORKING PAPERS

<http://www.oenb.at/en/Publications/Economics/Working-Papers.html>



### Determinants of Credit Constrained Firms: Evidence from Central and Eastern Europe Region

Apostolos Thomadakis ([Working Paper 207](#))

Based on survey data covering 6,547 firms in 10 Central and Eastern European countries we examine the impact of the banking sector environment, as well as the institutional and regulatory environment, on credit constrained firms. We find that small and foreign-owned firms are less likely to demand credit compared to audited and innovative firms. On the other hand, small, medium, publicly listed, sole proprietorship and foreign-owned firms had a higher probability of being credit constrained in 2008–2009 than in 2012–2014. The banking sector's environment analysis reveals that firms operating in more concentrated banking markets are less likely to be credit constrained. However, higher capital requirements, increased levels of loan loss reserves and a higher presence of foreign banks have a negative impact on the availability of bank credit. The evaluation of the institutional and regulatory environment in which firms operate shows that credit information sharing is negatively correlated with access to credit. Furthermore, we show that banking sector contestability can mitigate this negative effect. Finally, we find that in a better credit information sharing environment, foreign banks are more likely to provide credit.

## FRANZ WENINGER AWARD 2016

**Award for master's and doctoral theses in the field of monetary theory and monetary policy**

The Oesterreichische Nationalbank grants the Franz Weninger Award for outstanding master's and doctoral theses in the field of monetary theory and monetary policy. Three one-time prizes of EUR 3,000 each may be conferred for such theses every year. For more information, please refer to the [Conditions for Participation](#).

## 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 macroeconomics, international economics or financial economics and/or with a regional focus on Central, Eastern and Southeastern Europe.

See also: [Visiting Research Program 2016](#)

## EXTERNAL PUBLICATIONS BY STAFF MEMBERS

### Collateral, liquidity and debt sustainability

**Stefan Niemann, Paul Pichler (2016).** In: *Economic Journal*, accepted manuscript, DOI: 10.1111/eoj.12384

We study Markov-perfect optimal fiscal policy in an economy with financial frictions and sovereign default in the form endogenously determined haircuts on outstanding debt. Government bonds facilitate tax smoothing, but also provide collateral and liquidity services that mitigate financial frictions. There exists a debt Laffer curve, which induces the government to issue bonds to a point where marginal debt has negative welfare effects. Debt positions in the order of magnitude of annual output remain sustainable despite the option to default. When default happens, liquidity on the bond market is impaired, which can trigger extended periods of recurrent haircuts.

## UPCOMING AND RECENT EVENTS

The following events are organized by the OeNB. Please note that attendance is by invitation only. If you are interested in participating in one or more of the events, please send an e-mail to [OeNB.ResearchUpdate@oenb.at](mailto:OeNB.ResearchUpdate@oenb.at) or take a look at <http://www.oenb.at/en/Calendar.html>

UPCOMING	
August 22–26, 2016	OeNB Summer School 2016 Andreas Peichl (ZEW, University of Mannheim): Microsimulation methods for policy evaluation
October 7, 2016	Anna Samarina (University of Groningen): Mortgages and Credit Cycle Divergence in Eurozone Economics
October 14, 2016	Sven Seuken (University of Zürich): Clearing Payments in Financial Networks with Credit Default Swaps
October 21, 2016	Thomas Breuer (FH Vorarlberg, Forschungszentrum PPP): Stress Testing Model Risk
November 25, 2016	Completing Economic and Monetary Union (by invitation only)
November 28, 2016	Paul Collier (University of Oxford): Global Economy Lecture 2016 „How should Europe meet the Duty of Rescue towards the Displaced and the Poor?“ (by invitation only)

RECENT	
June 26, 2016	Friedrich Schneider (University Linz): Bargeld und Schattenwirtschaft (in German language)
June 24, 2016	Hans Gersbach (ETH Zurich): Money Creation, Monetary Policy, and Capital Regulation
June 9, 2016	Ádám Banai (Magyar Nemzeti Banka): Drivers of household credit demand before and during the crisis
June 1, 2016	Visiting Professor Paul Mizen (University of Nottingham): Does Monetary Policy Work Anymore?
May 20, 2016	Visiting Professor Paul Mizen (University of Nottingham): Using financial market signals to predict downturns in real economic activity'
May 13, 2016	Angelo Ranaldo (University of St.Gallen): Fragility of Money Markets
May 11, 2016	Visiting Professor Paul Mizen (University of Nottingham): What can we learn from the Global Financial Crisis?
April 27, 2016	Clemens Jobst (OeNB), Hans Kemberger (WU Wien): Die Bank. Das Geld. Der Staat.
April 22, 2016	Dimitrios Tsomocos (University of Oxford): Debt, Recovery Rates and the Greek Dilemma
April 1, 2016	Rainer Haselmann (Goethe University Frankfurt): The Limits of Model-Based Regulation

## OENB COURSES AT THE JOINT VIENNA INSTITUTE (JVI)

For further details see: [www.jvi.org](http://www.jvi.org)

October 10 –14, 2016	Macro-Financial Stability in Central, Eastern and Southeastern Europe
November 21–23, 2016	Cash Circulation and Payment Systems in Austria
November 28 – December 2, 2016	Monetary and Financial Statistics Collected and Compiled by the ESCB

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