

# Research Update

## Economic Analysis and Research Department

### Content

Saving, portfolio and loan decisions of households when interest rates are very low – survey evidence for Austrian households..... 2

Joint OeNB and University of Vienna Visiting Professorship: Paul Mizen..... 3

Two books on 200 years of central banking in Austria..... 4

OeNB Summer School 2016..... 5

Visiting Researcher at the OeNB: Professor Steve Ambler..... 5

Martin Wolf: Why has growth slowed? Demography, productivity and demand..... 8

#### Save the date

Global Economy Lecture 2016..... 3

Completing Economic and Monetary Union..... 8

Franz Weninger Award..... 6

Visiting Research Program..... 6

OeNB Periodical Publications..... 7

OeNB Working Papers..... 7

Upcoming and Recent Events..... 9

OeNB Courses at the Joint Vienna Institute (JVI)..... 9

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### Editorial

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

#### The difficulty of being European

Recent monetary policy measures have been met with a mixed response: banks and savers are struggling with the ultra-low interest rates, bearing the brunt of diminishing returns. On the flip side, lending and investment activity have not gained much momentum yet (see the results of our survey on the next page). Indebted firms and households, who are benefiting most, are pleased with the new situation, but do not gloat over it. As a result, the fan club of the ECB is limited.

That interest rates have to be so low because (aggregate euro area) inflation rates are too low, is also hard to drive home. Most textbooks will tell you that inflation is a bad thing as the threat of hyperinflation is just around the corner. How come that now central bankers want to see more of this monster?

The situation in Austria is even more difficult, given that our inflation rate is above the EU average. Conventional wisdom would have it that inflation has to become smaller when our competitiveness is at stake.

To get a better grasp of of the current situation, two things would be helpful: to study experimental economics or to bring “Europe” into this equation. Too bad, really, that in times of Brexit\* and Europe’s migration crisis, i.e. in a climate where solidarity is limited or frequently considered old-fashioned or too costly, “Thinking European“ is not a popular concept.

Doris Ritzberger-Grünwald

\* P.S.: We would certainly miss you.

## Saving, portfolio and loan decisions of households when interest rates are very low – survey evidence for Austrian households

Paper by Christian Beer, Ernest Gnan, Doris Ritzberger-Grünwald

published in OeNB: Monetary Policy & the Economy Q1/16

In this paper, the authors analyzed whether the current low interest rates affect savings, portfolio choice and loan decisions of Austrian households using data from a special OeNB barometer survey conducted in spring 2015.

The theoretical effects of interest rates on savings are ambiguous a priori because income and wealth effects that incentivize more savings if interest rates decrease might offset or even out-weigh the intertemporal substitution effect that implies a drop in savings in times of low interest. Our survey suggests that Austrian households' propensity to save dropped compared to three years before the survey because the fraction of households that indicated that they were saving less is higher than the fraction of households that were saving more. However, closer inspection of the survey results revealed that low interest rates were only one of several relevant factors that prompted households to save less.

### Reasons for changes in savings behavior

#### Why is your household saving more?

	%
Change in household income	39
Larger purchases	32
Personal reasons	16
Low interest rates	14
Other	30
Don't know/no answer	6

#### Why is your household saving less?

	%
Increase in price level	67
Higher consumption expenditures	54
Low interest rates	45
Higher real estate prices/rent	41
Other	61
Don't know/no answer	1

Source: Authors' calculations based on the OeNB barometer survey.

Note: Multiple answers possible.

The survey data suggest that only a relatively small fraction of Austrian households adjusted their portfolio composition in response to ultra-low interest rates. Among these households, safe haven motives, i.e. the flight to real assets like real estate, gold, and other tangible assets, seem to have played a role. The extent of portfolio rebalancing into riskier assets (e.g. shares) has been limited. Households have used investment funds to shift into riskier investments, though. Households' reluctance to adapt their portfolio composition despite potentially higher returns could be explained by the uncertain macroeconomic environment, the high volatility of stock markets, bad experiences with investment during the crisis as well as other factors such as transaction costs, stickiness of behavior, the changed tax treatment of valuation gains and limitations to financial literacy.

Furthermore, low interest rates would be expected to boost demand for loans. Although a large fraction of Austrian households regards the current circumstances as favorable for taking out a loan, only a relatively small number of surveyed households indicated that they have taken out a loan or intended to do so. Clearly, ultra-low interest rates are not a sufficient condition to prompt, or enable, households to take out a loan just for their own sake. If interest rates were to increase again, resulting in higher loan installments, most indebted households indicate in the survey that they would react by cutting consumption expenditures.

Even though the survey data allow only statements about participation (percentages of respondents) and not about volumes (amounts of savings or investments), the limited empirical support for a reduction in savings and portfolio rebalancing toward riskier assets suggests limits to the effectiveness of ultra-low interest rates in stimulating aggregate demand through the risk-taking and portfolio rebalancing channels, at least the demand of households in Austria. The effectiveness of ultra-low interest rates in any potential loan-financed increase in consumption or (housing) investment by households appears to be limited as well. The data suggest that other factors play a more important role in Austrian households' decision making.

For details see:

<https://www.oenb.at/en/Publications/Economics/Monetary-Policy-and-the-Economy.html>

## Joint OeNB and University of Vienna Visiting Professorship in Monetary and Financial Economics



© P. Mizen

The OeNB and its research division look back at over a decade of regular Visiting Professors to the Bank. 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 Nobuhiro Kiyotaki.

To mark the 200 year's anniversary of the OeNB, in cooperation with the Faculty of Business, Economics and Statistics of the University of Vienna, has decided to continue this tradition on a broader basis and created the "OeNB Anniversary Visiting Professorship in Monetary and Financial Economics." The purpose of the new and broader format of the OeNB Visiting Professorship is to give important impulses to research, to initiate and inform public debate, and to improve graduate education on monetary and financial economics in Vienna.

The first visiting Professor under the new Programme is Professor Mizen from the University of Nottingham.

**Paul Mizen** is a leading expert in monetary policy and his research interests span monetary economics, corporate finance and central banking. Professor 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. Professor Mizen will be visiting Vienna during May 2016 to discuss with staff at the OeNB, to give public lectures, and to teach a PhD course at the University of Vienna.

We are happy to announce three events that are open to a broader public:

- Wednesday, May 11 2016, 4:45 p.m.: "What can we learn from the Global Financial Crisis?" Public Lecture by Paul Mizen followed by a reception. Venue: Faculty of Business, Economics and Statistics 1090 Vienna, Oskar-Morgenstern-Platz 1, Lecture Hall 1. For this event, please register at: <http://wirtschaftswissenschaften.univie.ac.at/veranstaltungen/paul-mizen>
- Friday, May 20, 2016, 11:00 a.m.: VOSTA Friday Seminar "Using financial market signals to predict downturns in real economic activity". Venue: Oesterreichische Nationalbank, Otto Wagner Platz 3, 1090 Wien, Raum N5040.
- Wednesday, June 1, 2016, 7:00 p.m.: Money Talks: "Does Monetary Policy Work Anymore?" Public Lecture by Paul Mizen followed by a reception. Venue: Faculty of Business, Economics and Statistics 1090 Vienna, Oskar-Morgenstern-Platz 1, Sky Lounge 12th floor. For this event, please register at: <http://wirtschaftswissenschaften.univie.ac.at/veranstaltungen/paul-mizen>

## SAVE THE DATE

### Paul Collier, Professor at the University of Oxford, will deliver the Global Economy Lecture 2016 on November 28, 2016

Topic: How should Europe meet the Duty of Rescue towards the Displaced and the Poor?

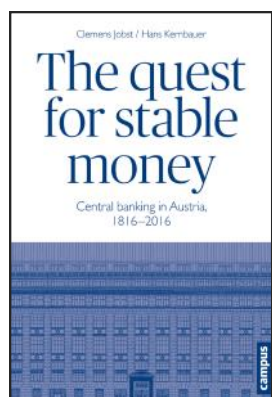
The Global Economy Lecture is an annual event jointly organized by Oesterreichische Nationalbank (OeNB) and The Vienna Institute for International Economic Studies (wiiw) since 1999. This lecture has traditionally been held by eminent economists and dedicated to topical issues of global economic developments. The list of speakers includes Jeffrey D. Sachs, Elhanan Helpman, Robert Lawrence, Barry Eichengreen, Lucrezia Reichlin, H el ene Rey to name just a few.

On the occasion of this event, the Oesterreichische Nationalbank will also present the 2016 winners of the [Franz Weninger Award](#), the [Klaus Liebscher Award](#) and the [Olga Radzyner Award](#).

For more information concerning the awards, please visit <https://www.oenb.at/en/About-Us/Research-Promotion/Grants.html>.

## Two books on 200 years of central banking in Austria

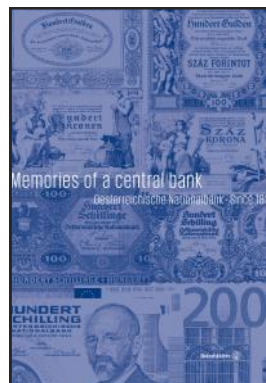
Do you know when your central bank created a business area specifically tasked with “economic analysis” and “statistical analysis”? At the Oesterreichische Nationalbank, this memorable date was 1898, at a time when today’s OeNB still operated under the name of the Austro-Hungarian Bank. And the reason this date is known within our bank and beyond today is that, during the past few years, a team of economists and historians delved into a vast amount of internal and external records with a view to drafting two “bicentennial books” to mark the OeNB’s 200th anniversary in 2016.



The scholarly part of the OeNB’s bicentennial books is [The Quest for Stable Money, Central Banking in Austria 1816–2016](#), published by Campus (Germany). Reading the past in the light of the present, the two authors – Clemens Jobst (OeNB) and Hans Kernbauer (Vienna University of Economics and Business) – produced impressive evidence

that despite the ongoing changes in the framework in which the OeNB operates, today’s challenges are in fact recurring themes in the narrative of the OeNB’s history.

The book also casts new light on the evolution of the OeNB from the treasury’s banker to the banker’s bank; and it is the first book to offer a compact overview of the past 50 years of Austrian monetary policy.



This scholarly book is complemented by [Memories of a Central Bank, Oesterreichische Nationalbank, Since 1816](#), also published recently, by Brandstätter (Austria). Mainly authored by the OeNB’s Bank History Archives team, this book was designed to tell the story of the OeNB in an engaging manner, with lots of pictures and with insights into workaday

life at the bank. Thus, the book includes chapters on the changing role of women at the OeNB and articles on pioneering achievements of the OeNB in banknote printing. It tells the OeNB’s story through its building history and offers vignettes of eventful money transports or the bank’s first company physician. To set the scene, each chapter also adds the political, economic and social backdrop against which the OeNB operated.

The OeNB’s actual “birthday,” by the way, was June 1, 1816.

## ANNOUNCEMENT

### The OeNB’s Conference Volume “Boosting European Competitiveness“ will be published by Edward Elgar in fall 2016

In the global financial crisis, competitiveness gaps between Euro area countries caused additional strain. This book discusses the various dimensions of competitiveness, with a special focus on emerging Central, Eastern and Southeastern European countries. For Europe to proceed with convergence and to resist global competitive pressures, it argues that policies to boost productivity and innovation are vital. With products becoming ever more technically sophisticated and global interconnectedness on a relentless rise, it also demonstrates that quality, customer orientation and participation in global production networks and global value chains are at least as important as relative costs and prices.

This book delves into the literature and dissects the complexity of competitiveness, aiming to offer tangible policy advice focussed on how well the European economy is performing and how it could improve. The key findings of the book, from a mix of academics and policymakers, constitute a state-of-the-art assessment of competitiveness that may change traditional perceptions of how economies can return to a path of sustainable growth.

Comprehensive and forward-looking, this enlightening book will appeal to academics, researchers and policymakers with a particular interest in European economies and economic integration.

OeNB Summer School 2016; Professor Andreas Peichl, Vienna, August 22–26, 2016

## Microsimulation methods for policy evaluation

### Course Description

'Microsimulation' is a technique that uses quantitative and statistical methods, and large and complex datasets, to project ex ante the effects and implications of policy reforms or demographic change. Microsimulation methods have been implemented progressively in a broad range of policy applications over the last decade: for example, microsimulation techniques have been applied to the evaluation of tax and welfare policy; labor markets; pensions systems; company behavior; regional and spatial modelling; population dynamics; education; health service provision; income poverty and disadvantage.

What are the likely employment effects of the new tax credit policies? How might road user charge alter patterns of transport use? Can a change in the provision of pensions affect the decision to retire? How much do policy reforms cost? To what extent are initial costs reduced through policy-induced changes in behavior? These are the sorts of questions that the microsimulation approach is able to address. Recent advances have extended the method beyond simple 'next day' effects, to account for behavioral and dynamic (inter-temporal) responses of economic agents to policy reform. These are valuable developments that broaden our capacity to fully evaluate the impacts of new policy initiatives.

This course will introduce the main methods of microsimulation, with an emphasis on the practical development of policy applications. The course will explore basic techniques in static microsimulation for use in the distributional analysis across representative samples

of economic agents – for example, individuals, households or companies. Extensions will be covered that account for behavioral responses to policy reform, with applications to employment and labor supply choices, education and retirement decisions. Other course elements will cover specification testing; validation and calibration; structural economic models in microsimulation; statistical properties; and the evaluation of welfare gains/losses from policy reform. Materials will be illustrated with practical training, primarily through instruction in the use of STATA.

### Provisional Schedule

- Day 1: Microsimulation methods: introduction, motivation and context, basic (static) methods
- Day 2: Behavioral microsimulation: discrete versus continuous, structural versus reduced form
- Day 3: Measuring welfare gains/losses in microsimulation – deadweight loss (DWL), equivalent and compensating variation, revenue costs/savings from policy reform; ETI as sufficient statistic?
- Day 4: Using microsimulation for macroeconomic questions: automatic stabilization, output/labor demand shocks, application fiscal equalization/fiscal union in the euro area
- Day 5: Further issues in microsimulation: statistical issues, dynamic microsimulation, simulating demographic change, linking microsimulation models with partial/general equilibrium models

## Visiting Researcher at the OeNB: Steve Ambler (Université du Québec à Montréal)

From September 2015 to March 2016 **Professor Steve Ambler** from Université du Québec à Montréal visited the Economic Analysis Division in the OeNB. Prof. Ambler is a renowned researcher in monetary economics and has published extensively in the fields of monetary policy strategy and open-economy macroeconomics. During his visit at the OeNB he collaborated with **Fabio Rumler** on a joint project which evaluates the effectiveness of the unconventional monetary policy measures in the euro area.

### The Effectiveness of Unconventional Monetary Policy in the Euro Area: An Event and Econometric Study

**Abstract:** We use data on market-based inflation expectations to measure the effectiveness of unconventional monetary policy (UMP) in the euro area

by looking at the effects of policy announcements on ex-ante real interest rates. Most empirical work on the effectiveness of UMP since the financial crisis has tried to measure the impact of policy changes on the term structure of nominal interest rates: evidence that UMP is pushing down medium-term nominal interest rates is taken as evidence of its effectiveness. We argue that this is potentially misleading. The transmission mechanism of monetary policy goes through real interest rates and their effect on aggregate demand, and it is possible for real interest rates to fall even if nominal interest rates rise with a sufficient change in inflation expectations. Our econometric evidence uncovers significant impacts of ECB policy announcements on real interest rates at horizons of five and ten years that operate mainly by raising inflation expectations.

## Why has growth slowed? Demography, productivity and demand

Martin Wolf, Associate Editor & Chief Economics Commentator, Financial Times  
Speech held at the OeNB on April 25, 2016

One of the probably most influential economic commentators, Martin Wolf gave at OeNB an enlightening speech on a pressing topic of global interest. The world economy is currently going through an important slowdown. Taking a look at various supply-side determinants of growth, Wolf concluded that demography may be one of the main culprits but since demographic changes were expected, growth rates well below expectations need additional reasoning. The decline in economic growth is also due to a decline in productivity growth. Since the 1970s, average growth (in the U.S.) has declined to levels not seen since the beginning of the 19th century. In stark contrast, between 1920 and 1970, growth rates were almost twice as high as in the periods before and after.



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Private capital investment has been rather low in many advanced countries (e.g. Germany, U.S.), which has led to lower contributions from capital deepening to overall growth. The most striking feature, however, is that the contribution from total factor productivity (TFP) has been particularly low. Thus, Wolf reckons, we are not living in an age of rapid technical change. Even though the influence of technological change may not yet have been translated into higher growth contributions from digitalization, the argument is not entirely persuasive. Output, for instance, has always been underestimated not just recently, and much of the economy may be relatively immune to technological change.

With respect to the euro area, the picture is a little different than for the U.S. Here, according to Wolf, deficient demand is clearly responsible for sluggish growth rates. The problem rests in the absence of a mechanism to correct internal imbalances within the euro area (countries with low domestic demand and high current account surpluses vs. countries with high domestic demand and high current account deficits). However, none of the observed trends is going to change in the near future, so policy makers need to adjust to a different economic environment. For instance, all available policy instruments should be used to revive growth: monetary, fiscal and structural policies. In addition, systems should be adjusted to lower achievable growth in such a way that distribution problems do not become viral.

## FRANZ WENIGER 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](#)

## 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 Q4/15

[Saving, portfolio and loan decisions of house-holds when interest rates are very low – survey evidence for Austrian households](#) (Christian Beer, Ernest Gnan, Doris Ritzberger- Grünwald)

[The Stability and Growth Pact since 2011: More complex – but also stricter and less procyclical?](#) (Doris Prammer, Lukas Reiss)

[See more](#)



#### Focus on European Economic Integration Q1/16

[Modeling the evolution of monetary policy rules in CESEE](#) (Martin Feldkircher, Florian Huber, Isabella Moder)

[A monetary policy rule for Russia, or is it rules?](#) (Iikka Korhonen, Riikka Nuutilainen)

[Weathering global shocks and macrofinancial vulnerabilities in emerging Europe: Comparing Turkey and Poland](#) (Markus Eller, Florian Huber, Helene Schuberth)

[See more](#)

## WORKING PAPERS

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



#### Background Indicators

Burkhard Raunig ([Working Paper 204](#))

Indicators of latent variables are usually assumed to be driven by the latent variable and some random noise. Background indicators are in contrast also systematically driven by variables outside the structural model of interest. This paper assesses instrumental variable estimates of effects of latent variables when a background indicator is substituted for the latent variable. It turns out that such estimates become inconsistent in empirically important cases. In certain cases the estimates capture causal effects of the indicator rather than effects of the latent variable. A simulation experiment that considers the effect of economic uncertainty on aggregate consumption illustrates some of the results.

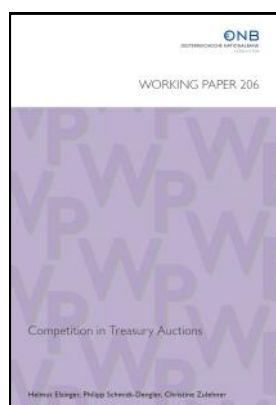
## WORKING PAPERS



### US Monetary Policy in a Globalized World

Jesús Crespo Cuaresma, Gernot Doppelhofer, Martin Feldkircher, Florian Huber  
([Working Paper 205](#))

We analyze the interaction between monetary policy in the US and the global economy proposing a new class of Bayesian global vector autoregressive models that accounts for time-varying parameters and stochastic volatility (TVP-SV-GVAR). We find that a contractionary US monetary policy shock leads to a persistent fall in international output, a drop in global inflation rates, a rise in international interest rates and a strengthening of the US dollar in real terms. There is considerable evidence for heterogeneity of spillovers across countries, as well as for changes in the transmission of monetary policy shocks over time. We also examine the reverse question, namely how US monetary policy responds to international shocks. Here we find that US short-term rates decrease significantly in response to a monetary policy tightening abroad or a negative shock to foreign real GDP growth.



### Competition in Treasury Auctions

Helmut Elsinger, Philipp Schmidt-Dengler und Christine Zulehner  
([Working Paper 206](#))

We investigate the role of competition on the outcome of Austrian Treasury auctions. Austria's EU accession led to an increase in the number of banks participating in treasury auctions. We use structural estimates of bidders' private values to examine the effect of increased competition on auction performance: We find that increased competition reduced bidder surplus substantially, but less than reduced form estimates would suggest. A significant component of the surplus reduction is due to more aggressive bidding. Counterfactuals establish that as competition increases, concerns regarding auction format play a smaller role.

Also published as: SAFE Working Paper, No. 127; WIFO Working Paper, No. 512/2016; CEPR Discussion Paper, DP10983, December 2015

## SAVE THE DATE

### Forum “Completing Economic and Monetary Union,” November 24 (evening) and 25, 2016

Keynote speaker: Valdis Dombrovskis, Vice-President of the European Commission

The EMU forum will bring together academics, experts and policymakers in order to debate the political economy of the euro area. The resilience of Economic and Monetary Union (EMU) hinges on its capability to reduce and distribute risks among its Member States. Hence, the rationale for EMU deepening is to enable long-term convergence via ex-ante coordination and swift crisis management via strong institutions. Following the “Five Presidents’ Report – Completing Europe’s Economic and Monetary Union” the Forum will explore ways to complement the single currency by an economic, financial, fiscal and political union. This event, organized by the OeNB together with the Euro50 Group and the Vienna Institute for International Economic Studies (wiiw), builds on last year’s workshop “Toward a Genuine Economic and Monetary Union” (<https://www.oenb.at/en/Publications/Economics/Workshops/2015/Workshop-No.-21.html>).

The OeNB will host this event on its premises. Please note that attendance is by invitation only. If you are interested in participating, please send an e-mail to [EMU-Forum@oenb.at](mailto:EMU-Forum@oenb.at).



## 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	
May 20, 2016	Visiting Professor Paul Mizen (University of Nottingham): Using financial market signals to predict downturns in real economic activity'
June 1, 2016	Visiting Professor Paul Mizen (University of Nottingham): Does Monetary Policy Work Anymore?
June 9, 2016	Ádám Banai (Magyar Nemzeti Banka): Drivers of household credit demand before and during the crisis
June 24, 2016	Hans Gersbach (ETH Zurich): Money Creation, Monetary Policy, and Capital Regulation
June 26, 2016	Friedrich Schneider (University Linz): Bargeld und Schattenwirtschaft (in German language)
August 22–26, 2016	OeNB Summer School 2016 Andreas Peichl (ZEW, University of Mannheim): Microsimulation methods for policy evaluation
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	
May 13, 2016	Angelo Rinaldo (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 Kemberauer (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
March 18, 2016	Gaël Giraud (Paris School of Economics): Debt, Inequality, and Capital in a Non-linear Macrodynamics
March 4, 2016	Ekkehard Köhler (Walter Eucken Institut): Re-convergence of Interest Rate Spreads of the GIIPS: Empirical Evidence of Fiscal and Monetary Actions and Interventions
February 26, 2016	East Jour Fixe on Ukraine, "Ukraine – Progress of Reforms and Challenges Ahead", jointly organized with wiw

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

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

May 9–13, 2016	Challenges for Candidate and Potential Candidate Countries in the EU and EMU Accession Process
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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