

Report on DNB Research programme 2016

The DNB Research programme 2016 had five themes:

1. *Monetary strategy, business cycles, and price stability;*
2. *Financial stability and macro-prudential supervision;*
3. *Micro-prudential supervision and conduct of financial institutions; and*
4. *Financial literacy and behaviour of households and companies.*
5. *Modelling and forecasting.*

All projects are available at: <http://www.dnb.nl/en/onderzoek-2/dnb-onderzoeksbeleid/index.jsp>.

Appendix 1 provides an overview of the status of the projects included in the 2016 DNB research programme.

Table 1 summarizes the progress made on individual projects. In 2016 14 (out of 69) projects were stopped for various reasons, mostly due to lack of sufficient results or the fact that some researchers have left DNB. The latter applies especially to projects in the third theme of the DNB research programme. In 2017 29 projects of the research programme 2016 will be continued.

Table 1. Overview of the status of the projects in 2016 DNB research programme

Theme:	Total number of projects:	Published as WP or under review:	Will soon be published:	Will be continued in 2017:	Stopped:
1.	19	10	1	7	1
2.	8	3	0	3	1
3.	24	2	2	11	10
4.	14	5	1	7	1
5.	4	1	1	1	1
Total	69	21	5	30	14

For forecasting purposes, extensive use has been made of DELFI – our macro model of the Dutch economy (see <http://www.dnb.nl/en/publications/dnb-publications/economische-ramingen/index.jsp>).

DELFI has been made available to the general public (see <http://delfi.dnb.nl/>). The DELFI tool allows users to examine the effects of changes in economic policy or the (international) economic environment on the economy of the Netherlands. In 2016 the DELFI tool has been updated to account for re-estimation of parts of the model and re-calibration of some of the scenarios. A taskforce that has worked on extending DELFI with a special focus on the interaction of the real and the financial sector has made much progress in developing a model for the banking sector, which will be incorporated in DELFI. DELFI has also been used extensively in 2016 for other policy purposes than forecasting:

- Scenarios for bank stress testing have been developed in collaboration with the Financial Stability Division.
- DELFI has been used to work out scenarios for the housing market for the Supervision Division.
- The model has been utilized to gauge the impact of the low-interest rate environment and non-standard monetary policy measures on the Dutch economy.
- DELFI has been employed to assess the impact of the rise in mortgage debt on the Dutch economy over past decades.
- The model has been used to quantitatively investigate the channels through which wage increases affect the Dutch economy.

In 2016 49 DNB working papers have been published, compared to 39 in 2015. Working papers can be downloaded at:

<http://www.dnb.nl/en/onderzoek-2/publications/dnb-working-paper-series/index.jsp>.

Appendix 2 provides an overview. DNB Working papers are available in REPEC and are also included in SSRN, which has increased the number of downloads substantially; see:

http://papers.ssrn.com/sol3/JELJOUR_Results.cfm?form_name=journalbrowse&journal_id=193427

1.

Table 2 provides an overview of publications in international journals, while table 3 summarizes the number of books and contributions to books. All published and forthcoming articles in journals and books and book contributions can be found at the DNB website:

<http://www.dnb.nl/en/onderzoek-2/publications/dnb-published-articles/index.jsp>.

Substantial progress has been made to realise our ambition to increase the quality and quantity of scientific contributions. The number of papers in A and B journal that have already been accepted is promising.

Table 2. Journal publications by DNB staff in 2009-2016

	A journals	B journals	C journals	Others
2009	3	15	4	4
2010	3	19	2	11
2011	4	16	9	3 ¹
2012	3 (2)	19 (12)	9 (8)	11 (8)
2013	6 (4)	27 (19)	10 (5)	16 (11)
2014	5 (4)	17 (14)	8 (5)	7 (6)
2015	3 (3)	18 (17)	9 (8)	6 (5)
2016	5 (4)	20 (14)	7 (7)	9 (3)
Forthcoming ²	7 (7)	18 (9)	4 (1)	2 (1)

¹ Includes one publication in journal that has A-status on TI list.

² Measured at the end of January 2017 (includes papers already published in 2017).

In parentheses the number of publications by staff of Economic Policy and Research is shown. Forthcoming papers have been accepted for publication but have not yet been published. As it sometimes takes very long before papers are published, acceptances in a particular year and publications in that same year do not coincide.

Table 3. Books and contributions in books by DNB staff in 2010-2015

	Books (monographs and edited volumes) by publishers on DNB list	Other books	Contributions in books by publishers on DNB list	Other contributions
2010	1	--	7	1
2011	1	--	2	2
2012	2 (2)	--	4 (4)	6 (2)
2013	1 (1)	--	3 (3)	1 (1)
2014	1 (0)	--	1 (1)	--
2015	1 (1)	1 (0)	4 (4)	7 (0)
2016	--	--	1 (0)	--
Forthcoming	2 (0)	--	5 (4)	--

In parentheses the number of publications by staff of Economic Policy and Research is shown.

In 2016 the following Occasional Studies have been published:

1. A shock to the system? Market illiquidity and concentrated holdings in European bond markets
2. Time for Transition - an exploratory study of the transition to a carbon-neutral economy
3. Inflation in the euro area and why it matters
4. Perspectief op groei: De Nederlandse economie in beweging
5. The Return on Equity of Large Dutch Banks

In 2016 the DNB Visiting Scholar Programme was again very successful. We were able to attract a number of excellent scholars who gave seminars and/or policy lectures and interacted with DNB staff. Table 4 gives an overview of the visiting scholars who visited DNB in 2016.

Table 4. Visiting scholars 2016

Name:	Affiliation:
Francesco Zanetti	University of Oxford
Thomas Lubik	Federal Reserve Bank of Richmond
Skander van den Heuvel	Federal Reserve Board
Jules van Binsbergen	University of Pennsylvania

In 2016 the following conferences and workshops have been organised or hosted:

- 21-22 April 2016 DNB Payments Conference 2016 Retail Payments: Mapping Out The Road Ahead (selected contributions will be published in a special issue of the *Journal of Financial Services Research*)
- 22-23 April 2016 DNB hosted *Economic Policy's* Policy Panel
- 9-10 June 2016 DNB/CEPR Conference on Bank Equity over the Cycle (organizer: Enrico Perotti)
- 2 September 2016 DNB workshop on Estimating and Interpreting Financial Cycles
- 6-8 September 2016 DNB hosted: Learning Conference - Expectations in Dynamic Macroeconomic Models, organized by the University of Amsterdam
- 29-30 September 2016 DNB Annual Research Conference Inflation in the 21st Century: New Policies for New Challenges?

Details about these conferences are available at:

<http://www.dnb.nl/en/onderzoek-2/test-conferences/index.jsp>.

In 2016 there were 38 seminars by external speakers (see Appendix 3) and about 30 seminars by internal speakers. All seminars are announced at the website of DNB and are frequently attended by DNB policy makers and external visitors.

An important ambition is to increase the interaction and synergy of research and policy. Several initiatives have been taken. First, each quarter the management team (MT) of the Division Economic Policy and Research assesses the policy relevance of DNB Working Papers (on a scale of one to five) and the extent to which policy notes have incorporated insights of (DNB) research. Working Papers should at least score 3.5. This objective is also included in the annual performance review targets for researchers. Second, in 2016 several project teams of policymakers and researchers worked on important policy issues. Good examples are the Occasional Studies on energy transition and inflation. In 2017 several project teams will be working on important topics, such as the position of middle-income groups, energy transition, and future monetary policy (inflation dynamics, low interest environment, and the future of asset purchase programs). Third, a so-called "Regiegroep Onderzoek" has been created, consisting of several directors of policy divisions. Important tasks of this committee are to discuss the annual research programme and to come up with a so-called research agenda, which outlines the main issues for research in the near future in view of the policy environment.

Appendix 1. Research projects 2016

1. Monetary strategy, business cycles and price stability

1. Monetary policy: changes and challenges

Alan Blinder (Princeton University), Jakob de Haan, Michael Ehrmann (Central Bank of Canada), David-Jan Jansen

Status: published as DNB WP 525.

2. Regime-switching fiscal and monetary policy under monetary union

Dennis Bonam, Bart Hobijn (Arizona State University)

Status: published as DNB WP 524.

3. Inflation expectations across the euro area

Dennis Bonam, Eric Bartelsman (Vrije Universiteit, Tinbergen Institute)

Status: will be continued in 2017.

4. Fiscal multipliers at the extensive margin (started in 2015)

Andrea Colciago, Vivien Lewis (University of Leuven), Lorenza Rossi (University of Pavia)

Status: will be continued in 2017.

5. Who creates jobs over the business cycle? (started in 2014)

Andrea Colciago, Antonella Trigari (Bocconi University)

Status: will soon be published.

6. Unintended consequences of unconventional monetary policy

Jakob de Haan, Yimin Xu (intern University of Groningen)

Status: published as DNB WP 529.

7. Measuring asymmetry in the macroeconomic effects of changes in regulatory loan-to-value limits

Jasper de Jong, Emmanuel de Veirman

Status: will be continued in 2017.

8. Lending shocks and macroeconomic stability (started in 2015)

Emmanuel de Veirman

Status: will be continued in 2017.

9. Formation of inflation expectations – new insights from heterogeneity in a high-frequency survey (started in 2014)

Gabriele Galati, Richhild Moessner (BIS)

Status: will be continued in 2017.

10. Measuring deflation risk in the euro area

Gabriele Galati, Richhild Moessner (BIS), Zion Gorgi, Chen Zhou

Status: published as DNB WP 509.

11. Wage dynamics after the crisis (started in 2015)

Marco Hoeberichts

Status: will be continued in 2017.

12. Communicating dissent on monetary policy

David-Jan Jansen, Richhild Moessner (BIS)

Status: published as DNB WP 512.

13. Household inflation expectations in a context of low inflation (started in 2015)

David-Jan Jansen, Matthias Neuenkirch (University of Trier)
Status: will be continued in 2017.

14. FDI and international business cycle synchronization: a structural analysis (started in 2012)
Jos Jansen, Ad Stokman
Status: stopped.

15. Anticipation and materialization of credit default risk (started in 2015; previously: *Loan default risk in the banking sector and macroeconomic stability*)
Sebastiaan Pool
Status: published as DNB WP 518.

16. How does the public respond to helicopter money?
Maarten van Rooij, Jakob de Haan
Status: published as DNB WP 538.

17. The signalling content of asset prices for inflation: implications for Quantitative Easing
Leo de Haan, Jan Willem van den End
Status: published as DNB WP 516.

18. Sectoral allocation and macroeconomic imbalances in EMU
Niels Gilbert, Sebastiaan Pool
Status: published as DNB WP 536.

19. Cyclical and structural imbalances in the euro area
Mark Mink, Jakob de Haan, Jan Jacobs (University of Groningen)
Status: published as DNB WP 540.

2. Financial stability and macro-prudential supervision

1. Newton meets Van Leeuwenhoek: Identifying international investors' common currency preferences
Martijn Boermans, Robert Vermeulen
Status: published in journal.

2. Investor heterogeneity and international portfolio holdings: Estimating a gravity model with security-by-security data
Martijn Boermans, Robert Vermeulen
Status: published as DNB WP 531.

3. The liquidity of financial instruments (started in 2015)
Clemens Bonner, Iman van Lelyveld
Status: will be continued in 2017.

4. Effective macroprudential policy: Cross-sector substitution from price and quantity measures
Janko Cizel, Jon Frost, Aerd Houben, Peter Wierds
Status: published as DNB WP 498.

5. Measuring systemic risk in OTC-derivatives markets (started in 2015)
Anouk Levels, Svetlana Borovkova
Status: will be continued in 2017.

6. Bank relationships after foreign takeover
Steven Poelhekke, Razvan Vlahu, Vadym Volosovych (EUR)
Status: will be continued.

7. *Shadow banking and macroeconomic stability* (started in 2015; previously: *Inherent instability in the financial sector*)

Sebastiaan Pool

Status: will be continued in 2017.

8. *Identifying the determinants of competitiveness: A value added trade share perspective* (started in 2013)

Robert Vermeulen, Martin Schmitz (ECB)

Status: stopped.

3. Micro-prudential supervision and conduct of financial institutions

1. *Crowded trades, shared portfolios and price instability*

Assaf Almog (Lorentz Leiden), Diego Garlaschelli (Lorentz Leiden), Iman van Lelyveld

Status: will be continued in 2017.

2. *X-efficiency of Dutch pension providers*

Gosse Alserda (EUR), Jaap Bikker, Fieke van der Lecq (EUR)

Status: will soon be published.

3. *Dynamic adjustment of stock prices to the fundamental value: An error correction approach* (started in 2014)

Jaap Bikker, Laura Spierdijk (University of Groningen)

Status: stopped.

4. *Bank profitability in a low interest rates environment*

Jaap Bikker, Laura Spierdijk (University of Groningen), Tobias Vervliet (intern, University of Groningen)

Status: will soon be published.

5. *Competition in the non-life insurance industry: a cross-country comparison* (started in 2014)

Jaap Bikker, Thomas Maas (University of Utrecht)

Status: stopped.

6. *Early warning and forecasting performance of HAMs in housing markets* (started in 2015)

Wilko Bolt, Maria Demertzis, (DNB/European Commission), Cees Diks (CeNDEF, UvA Amsterdam), Cars Hommes (CeNDEF, UvA Amsterdam), Marco van der Leij (CeNDEF, UvA Amsterdam)

Status: will be continued in 2017.

7. *Regular equivalence in interbank markets* (started in 2012)

Wilko Bolt, Rod Garratt (University of California Santa Barbara), Iman van Lelyveld

Status: stopped.

8. *Liquidity regulation and monetary policy operations in normal times*

Clemens Bonner, Iman van Lelyveld

Status: will be continued in 2017.

9. *Behaviour of the Secured Euro Interbank Repo Market*

Svetlana Borovkova (VU/DNB), Tim Wolterink (VU), Ronald Heijmans

Status: externally published.

10. *Time evolution and properties of the Dutch multi-layer LVPS payment network*

Svetlana Borovkova (VU/DNB), Monika Furdyna (VU), Richard Heuver

Status: stopped.

11. Network models of derivatives markets and the consequences of central clearing

Svetlana Borovkova (VU/DNB), Robert Jan van Leijden, Anouk Levels

Status: will be continued in 2017.

12. Strategic defaults: An empirical identification (started in 2015)

Margherita Bottero (BoI), Steven Poelhekke, Razvan Vlahu

Status: stopped.

13. Pension funds and variations in the illiquidity premium

Dirk Broeders, Kristy Jansen (Netspar, TiU), Theo Nijman (Netspar, TiU), Bas Werker (Netspar, TiU)

Status: will be continued in 2017.

14. A return analysis of pension fund investment portfolios

Dirk Broeders, Arco van Oord, David Rijsbergen

Status: will be continued in 2017.

15. The role of foreign banks in trade (started in 2015)

Stijn Claessens (IMF), Omar Hassib (Maastricht University), Neeltje van Horen

Status: stopped.

16. Spoilt for choice? Firm-bank matching in local credit markets (started in 2015)

Ralph de Haas (EBRD), Neeltje van Horen

Status: stopped.

17. SME access to finance during a financial crisis: Are bank credit and trade credit substitutes or complements? (New title: The resilience of young firms during the financial crisis)

Ralph de Haas (EBRD), Neeltje van Horen (Bank of England), Vincent Sterk (University College London), Jasper de Winter

Status: will be continued in 2017.

18. Internal asset transfers and risk taking in financial conglomerates (started in 2015)

Natalya Martynova

Status: stopped.

19. Regulation, supranational bank supervision, and the corporate structure of foreign affiliates

Natalya Martynova, Razvan Vlahu

Status: will be continued in 2017.

20. The determinants of the lifecycle investment profile of interest rate risk

Roel Mehlkopf, Servaas van Bilsen (UvA), Ilja Boelaars (University of Chicago), Lans Bovenberg (TiU, Netspar)

Status: will be continued in 2017.

21. What drives the markets' view on bank capitalization? (started in 2015)

Mark Mink (DNB), Jakob de Haan (DNB), Eric van Loon (Ministry of Finance)

Status: stopped.

22. The invisible hand of the government. Moral suasion during the European sovereign debt crisis (started in 2015; previously: To increase or not to increase? The determinants of banks' sovereign debt holdings)

Steven Ongena (University of Zurich), Alexander Popov (ECB), Neeltje van Horen

Status: stopped.

23. Entropy-based implied volatilities and its information content

Xiao Xiao (EUR), Chen Zhou

Status: will be continued in 2017.

24. Timing of banks' loan loss provisioning during the crisis

Leo de Haan, Maarten van Oordt (Bank of Canada)

Status: published as DNB WP 513.

4. Financial literacy and behaviour of households and companies

1. Using point-of-sale payment data for estimating household consumption (started in 2015)

Wilko Bolt, Carin van der Cruijssen, Roy Verbaan

Status: will be continued in 2017.

2. Mode effects on self-reported household financial data (started in 2015)

Wändi Bruine de Bruin (Leeds University Business School), Wilbert van der Klauw (Federal Reserve Bank of New York), Maarten van Rooij, Federica Teppa, Klaas de Vos (CentERdata)

Status: published as DNB WP 506.

3. Trust and economic expectations

Dimitris Christelis (CSEF), Dimitris Georgarakos (Bundesbank), Tullio Jappelli (University of Naples), Maarten van Rooij

Status: published as DNB WP 537.

4. Consumers' bank switching behaviour (new title To stay or leave)

Maaïke Diepstraten (Tilburg University), Carin van der Cruijssen

Status: will be continued in 2017.

5. Housing price shocks and trust in financial advice (started in 2014)

Dimitris Georgarakos (Goethe University Frankfurt), Roman Inderst (Goethe University Frankfurt), Maarten van Rooij

Status: stopped.

6. Frequency of diary survey participation: less is more?

Lola Hernandez

Status: will soon be published.

7. Intraday payment choices: mainstream vs. payments innovations (previously: Cash management and intraday cash balances), (started in 2014)

Lola Hernandez, Nicole Jonker

Status: will be continued in 2017.

8. How wide is the Dutch border: assessing the effects of increases in excise duties on cross-border trade filling stations (started in 2015)

David-Jan Jansen, Nicole Jonker

Status: published as DNB WP 519.

9. Financial literacy and pension expectations

Remko Struik, Maarten van Rooij, Rob Alessie (University of Groningen)

Status: will be continued in 2017.

10. The role of information on the formation and revision of subjective survival expectations

Federica Teppa, Susan Thorp (University of Sydney), Hazel Bateman (UNSW)

Status: will be continued in 2017.

11. Payment data and consumers' privacy

Carin van der Cruijssen

Status: will be continued in 2017.

12. Payment behaviour: the role of socio-psychological factors

Carin van der Cruijssen, Frank van der Horst

Status: published as DNB WP 532.

13. Flat or flexible pension? Consumers' expenditures before and after retirement (started in 2015)

Carin van der Cruijssen, Nicole Jonker

Status: published as DNB WP 535.

14. Economic and institutional determinants of mortgage default (started in 2015)

Razvan Vlahu, Irina Stanga (University of Groningen), Jakob de Haan

Status: will be continued in 2017.

5. Modelling and forecasting

1. Modelling spending under conditions of low inflation/deflation (started in 2015)

Robert-Paul Berben, Ad Stokman

Status: published in journal.

2. Modelling the business and financial cycle in a multivariate time series model for the G7 and the euro area (started in 2014)

Irma Hindrayanto, Jasper de Winter, Siem Jan Koopman (VU University)

Status: will soon be published.

3. Forecasting with large panel data sets (started in 2015)

Andreas Pick

Status: will be continued in 2017.

4. Trade financing practices before, during and after the Great Recession

Ad Stokman

Status: stopped.

Appendix 2 DNB Working Papers in 2016

- 1 No. 493 **Jacob Bikker, Dirk Gerritsen and Steffie Schwillens**, Competing for savings: how important is creditworthiness during the crisis?
- 2 No. 494 **Jon Danielsson and Chen Zhou**, Why risk is so hard to measure
- 3 No. 495 **Gabriele Galati, Irma Hindrayanto, Siem Jan Koopman and Marente Vlekke**, Measuring financial cycles with a model-based filter: Empirical evidence for the United States and the euro area
- 4 No. 496 **Dimitris Christelis, Dimitris Georgarakos, Tullio Jappelli and Maarten van Rooij**, Consumption uncertainty and precautionary saving
- 5 No. 497 **Marco Hoeberichts and Ad Stokman**, Price level convergence within the euro area: How Europe caught up with the US and lost terrain again
- 6 No. 498 **Janko Cizel, Jon Frost, Aerd Houben and Peter Wierds**, Effective macroprudential policy: Cross-sector substitution from price and quantity measures
- No. 499 **Frank van der Horst, Martina Eschelbach, Susann Sieber and Jelle Miedema**, Does banknote quality affect counterfeit detection? Experimental evidence from Germany and the Netherlands
- 8 No. 500 **Jochen Mierau and Mark Mink**, A descriptive model of banking and aggregate demand
- 9 No. 501 **Clemens Bonner, Daniel Streitz and Michael Wedow**, On the differential impact of securitization on bank lending during the financial crisis
- 10 No. 502 **Mijntje Lückcrath-Rovers and Margriet Stavast-Groothuis**, The changing composition of the supervisory boards of the eight largest banks and insurers during 2008-2014 and the impact of the “4+4 suitability screenings”
- 11 No. 503 **Dirk Broeders, Damiaan Chen, Peter Minderhoud and Willem Schudel**, Pension funds’ herding
- 12 No. 504 **Ronald Heijmans, Richard Heuver and Zion Gorgi**, How to monitor the exit from the Eurosystem’s unconventional monetary policy: Is EONIA dead and gone?
- 13 No. 505 **Steven Ongena, Alexander Popov and Neeltje Van Horen**, The invisible hand of the government: “Moral suasion” during the European sovereign debt crisis
- 14 No. 506 **Wändi Bruine de Bruin, Wilbert van der Klaauw, Maarten van Rooij, Federica Teppa and Klaas de Vos**, Measuring expectations of inflation: Effects of survey mode, wording, and opportunities to revise
- 15 No. 507 **Jos Jansen and Jasper de Winter**, Improving model-based near-term GDP forecasts by subjective forecasts: A real-time exercise for the G7 countries
- 16 No. 508 **Malka de Castro Campos and Federica Teppa**, Individual inflation expectations in a declining-inflation environment: Evidence from survey data
- 17 No. 509 **Gabriele Galati, Zion Gorgi, Richhild Moessner and Chen Zhou**, Deflation risk in the euro area and central bank credibility
- 18 No. 510 **Christiaan Pattipeilohy**, A comparative analysis of developments in central bank balance sheet composition
- 19 No. 511 **Guido Ascari, Andrea Colciago and Lorenza Rossi**, Determinacy analysis in high order dynamic systems: The case of nominal rigidities and limited asset market participation
- 20 No. 512 **David-Jan Jansen and Richhild Moessner**, Communicating dissent on monetary policy: Evidence from central bank minutes
- 21 No. 513 **Leo de Haan and Maarten van Oordt**, Timing of banks’ loan loss provisioning during the crisis
- 22 No. 514 **Cenkhan Sahin**, Macroeconomic effects of mortgage interest deduction
- 23 No. 515 **Karsten Staehr and Robert Vermeulen**, How competitiveness shocks affect macroeconomic performance across euro area countries
- 24 No. 516 **Leo de Haan and Jan Willem van den End**, The signalling content of asset prices for inflation: Implications for Quantitative Easing
- 25 No. 517 **Daniël Vullings**, Contingent convertible bonds with floating coupon payments: fixing the equilibrium problem.
- 26 No. 518 **Sebastiaan Pool**, Credit Defaults, Bank Lending and the Real Economy

- 27 No. 519 **David-Jan Jansen and Nicole Jonker**, Fuel tourism in Dutch border regions: are only salient price differentials relevant?
- 28 No. 520 **Jon Frost, Jakob de Haan and Neeltje van Horen**, International banking and cross-border effects of regulation: lessons from the Netherlands
- 29 No. 521 **Wilko Bolt and Maarten van Oordt**, On the value of virtual currencies
- 30 No. 522 **David-Jan Jansen**, Housing and mortgage dynamics: evidence from household surveys
- 31 No. 523 **Michelle Bongard, Gabriele Galati, Richhild Moessner and William Nelson**, Connecting the dots: market reactions to forecasts of policy rates and forward guidance provided by the Fed
- 32 No. 524 **Dennis Bonam and Bart Hobijn**, Generalized stability of monetary unions under regime switching in monetary and fiscal policies
- 33 No. 525 **Alan Blinder, Michael Ehrmann, Jakob de Haan and David-Jan Jansen**, Necessity as the mother of invention: monetary policy after the crisis
- 34 No. 526 **Raymond Chaudron**, Bank profitability and risk taking in a prolonged environment of low interest rates: a study of interest rate risk in the banking book of Dutch banks
- 35 No. 527 **Steven Poelhekke**, Financial globalization and foreign direct investment
- 36 No. 528 **Marco van der Leij, Daan in 't Veld and Cars Hommes**, The formation of a core-periphery structure in heterogeneous financial networks
- 37 No. 529 **Yimin Xu and Jakob de Haan**, Does the Fed's unconventional monetary policy weaken the link between the financial and the real sector?
- 38 No. 530 **Jakob de Haan and Jan-Egbert Sturm**, Finance and income inequality: A review and new evidence
- 39 No. 531 **Martijn Boermans and Robert Vermeulen**, International investment positions revisited: Investor heterogeneity and individual security characteristics
- 40 No. 532 **Carin van der Crujzen and Frank van der Horst**, Payment behaviour: the role of socio-psychological factors
- 41 No. 533 **Ralph De Haas and Steven Poelhekke**, Mining matters: Natural resource extraction and local business constraints
- 42 No. 534 **Mark Mink**, Aggregate liquidity and banking sector fragility
- 43 No. 535 **Carin van der Crujzen and Nicole Jonker**, Pension profile preferences: the influence of trust and expected expenses
- 44 No. 536 **Niels Gilbert and Sebastiaan Pool**, Sectoral allocation and macroeconomic imbalances in EMU
- 45 No. 537 **Dimitris Christelis, Dimitris Georgarakos, Tullio Jappelli and Maarten van Rooij**, Trust in the central bank and inflation expectations
- 46 No. 538 **Maarten van Rooij en Jakob de Haan**, Will helicopter money be spent? New evidence
- 47 No. 539 **Jakob de Haan and Sylvester Eijffinger**, The politics of central bank independence
- 48 No. 540 **Mark Mink, Jan Jacobs and Jakob de Haan**, Euro area imbalances
- 49 No. 541 **Jack Bekooij, Jon Frost, Remco van der Molen and Krzysztof Muzalewski**, Hazardous tango: Sovereign-bank interdependencies across countries and time

Appendix 3. Overview of seminars in 2016

1	12 January	Loan Sales and Bank Liquidity Management: Evidence from a U.S. Credit Register	Ralf Meisenzahl, Federal Reserve Board
2	26 January	Mobile Money, Trade Credit and Economic Development: Theory and Evidence	Burak Uras, Tilburg University
3	9 February	Payment Delays and Contagion	Dilyara Salakhova, Bank of France
4	1 March	Does a Larger Menu Increase Appetite? Collateral Eligibility and Bank Risk-Taking	Sjoerd van Bakkum, Erasmus School of Economics
5	3 March	An Estimated DGSE Model for the Netherlands with Unemployment	Adam Elbourne, Netherlands Bureau for Economic Policy Analysis
6	8 March	Mortgages and Credit Cycle Divergence in Eurozone Economics	Anna Samarina, University of Groningen
7	15 March	Sticker Shocks: Using VAT Changes to Estimate Upper-Level Elasticities of Substitution	Bart Hobijn, Carey School of Business
8	22 March	Optimism Propagation	Florian Peters, University of Amsterdam
9	29 March	Sovereign debt exposure and the bank lending channel: impact on credit supply and the real economy	Margherita Bottero, Bank of Italy
10	5 April	Asymmetries in labor market fluctuations	Francesco Zanetti, University of Oxford
11	14 April	Indeterminacy and Learning: An Analysis of Monetary Policy in the Great Inflation	Thomas Lubik, Federal Reserve Bank, Richmond
12	19 April	The Welfare Effects of Bank Liquidity and Capital Requirements	Skander van den Heuvel, Federal Reserve Board
13	21 April	The Source of Monetary Instability	Robert Aliber, Chicago University
14	26 April	Benefits and Costs of Bank Capital	Lev Ratnovski, IMF
15	10 May	Interacting Prudential and Monetary Policies in an Agent-based Model	Joeri Schasfoort and Dirk Bezemer, University of Groningen
16	17 May	Do National Borders Slow Down the Diffusion of New Technological Fields? The Case of Big Data in Europe	Bas Straathof, Netherlands Bureau for Economic Policy Analysis
17	24 May	Matching Capital and Labor	Jules van Binsbergen, University of Pennsylvania

18	7 June	Financial Repression in the European Sovereign Debt Crisis	Bo Becker, Stockholm School of Economics
19	14 June	Portfolio Compression in OTC Derivatives Markets	Tarik Roukny, Free University of Brussel
20	21 June	Do Firms Mitigate or Magnify Capital Misallocation? Evidence from Plant-Level Data	Matthias Kehrig, University of Texas at Austin
21	5 July	On the Value of Virtual Currencies	Maarten van Oordt, Bank of Canada
22	14 July	Do Markets React to Dots or Guidance?	William Nelson, Federal Reserve System
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36	24 November	Low inflation and monetary policy in the euro area	Stefano Neri, Bank of Italy

37	29 November	Bank business models at zero interest rates	Julia Schaumburg, VU Amsterdam
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