#### **Report on DNB Research programme 2015**

This report consists of two parts. The first part offers a discussion how research at DNB can contribute to policy, while the second part provides details about the status of individual research projects, working papers, publications and conferences and seminars in 2015.

### 1. How research can contribute to policy

Over the past year, research conducted at DNB has provided a number of interesting insights that can be useful for monetary policy, financial stability and other policy areas in the Netherlands and the euro area. This part of the report presents a selection of these contributions. The aim is not to provide a comprehensive list of research findings and their policy relevance but rather to illustrate with concrete examples research/policy interactions.

In this part, six DNB Working Papers published in the course of 2015 are discussed covering the main themes in the DNB Research programme 2015: Monetary strategy, business cycles, and price stability (A); Financial stability and macro-prudential supervision (B); Micro-prudential supervision and conduct of financial institutions (C); Financial literacy and behaviour of households and companies (D); Modelling and forecasting (E).

### Are households' inflation expectations well anchored? (A)

With HICP inflation stuck at levels close to 0% in the euro area, the success of the ECB in achieving price stability hinges on inflation expectations remaining well anchored. It is notoriously difficult to measure inflation expectations and hence assess their anchoring. Existing measures rely on surveys of professional forecasters or on the prices of inflation-linked products traded on financial markets, both of which have shortcomings. Importantly, we know very little about how households are forming their inflation expectations, even though their behavior is crucially important. In fact, forward guidance has been seen as a way to steer households' expectations.

Federica Teppa, Maarten van Rooij and a team from the New York Fed tackle this issue by analyzing a novel data source on inflation expectation by households in the Netherlands over the period 2008-2014.<sup>1</sup> They find that survey measures of households' inflation expectation depend crucially on the wording of survey questions. A careful survey design shows that are over past years inflation expectations have declined but consumers are not viewing deflation as likely.

Regionalization and globalization in international banking (B)

<sup>&</sup>lt;sup>1</sup> Wändi Bruine de Bruin, Wilbert van der Klaauw, Maarten van Rooij, Federica Teppa and Klaas de Vos (2016) "Measuring expectations of inflation: Effects of survey mode, wording, and opportunities to revise", Mimeo, DNB. The data come from a CenterERdata online survey.

In response to the global financial crisis and the sovereign debt crisis in Europe, policy makers created a European banking union that coordinates at a regional level entry, regulation, supervision and resolution of internationally active EU banks. Regional coordination should have a positive direct effect on financial stability but it may also lead to a stronger "regionalization" of the European banking system. This could imply limited diversification and consequently a less stable global banking system. To assess the overall implications for financial stability, it is therefore important to have a better understanding of the drivers of regionalization, or more in general fragmentation, of banking sectors.

A new paper by Stijn Claessens and Neeltje van Horen addresses these issues from a global perspective and analyzes developments in international banking after the global financial crisis.<sup>2</sup> They examine developments in local foreign bank presence (so-called "brick and mortar" investments) by some 5000 banks in more than 100 countries over the period 2007-2013. They find a global trend towards fewer entries of foreign banks in domestic banking sectors after the crisis. However, the global banking system is not becoming more fragmented. Rather, it has come to encompass a more diverse set of players – most notably from emerging markets and developing countries – and have a more regional focus.

# Financial stress indicators and financial crises (B)

Macroprudential policy instruments – such as the counter-cyclical capital buffer – are typically designed to be forward looking and require early warning indicators for future systemic crises, which would trigger an activation of these tools. One way to find such predictors is to develop financial stress indices (FSI) that measure the level of stress within the financial system, and then identify the index that performs best as warning indicator for future crises.

In two working papers, Robert Vermeulen, Marco Hoeberichts, Jakob de Haan and their co-authors examine a myriad of financial variables to construct a financial stress index (FSI) for 28 OECD countries using a novel database on financial crises. They document that sharp increases in this FSI and its various sub-components are associated with financial crises, i.e. the FSI is a good "thermometer" of financial distress. They also show that their FSI does not work well as a "barometer" of financial distress, i.e. it does not perform well in predicting financial crises.

These results show the limitations of using FSIs as early warning indicators. They also provide suggestive evidence in favor of the so-called paradox of instability: the financial system is most unstable when it looks most stable, i.e. when a financial stress index is lowest.<sup>3</sup>

<sup>&</sup>lt;sup>2</sup> Stijn Claessens and Neeltje van Horen (2015) "The impact of the global financial crisis on banking globalization", DNB WP No.459 (forthcoming in IMF Economic Review).

<sup>&</sup>lt;sup>3</sup> The paradox of instability (also called the paradox of volatility) is prominent in the work of Borio (Change and constancy in the financial system. BIS WP 237, 2009), Minsky (The Financial Instability Hypothesis. Levy Economics Institute Working Paper No. 74, May 1992) and Danielsson (Global Financial Systems. Stability and Risk, 2013).

# The Comprehensive Assessment and private sector confidence in the soundness of euro area banks and the quality of their balance sheets (C)

On 26 October 2014 ECB published the outcomes of its Comprehensive Assessment of banks in the euro area, which scoured banks' books for hidden problems, tested their ability to withstand crises, and forced weak banks to raise more capital. The ECB hopes that this assessment will strengthen private sector confidence in the soundness of euro area banks and the quality of their balance sheets. If that is indeed the case, one would observe limited reactions from financial markets on the banks being assessed.

To validate this, a paper by Cenkhan Sahin and Jakob de Haan examines financial markets' reactions to the publication of the ECB's Comprehensive Assessment.<sup>4</sup> They find that on average for euro area banks, stock prices and CDS spreads generally did not react to this news, while CDS spreads of Dutch banks tended to increase, albeit by very small amounts. The overall limited market reaction shows that the outcomes of the assessment were in line with market expectations and consequently supports for conducting such assessments repeatedly.

# Contingent capital (CoCos) can increase banks' risk-taking, unless triggers for their conversion are designed to be high (C)

An important novelty of Basel III is that it allows banks to use contingent convertible capital instruments (CoCos or "contingent capital" in short), which are hybrid capital securities that absorb losses when the capital of the issuing bank falls below a certain level. The policy debate has highlighted that the design of these CoCos may affect banks' incentives to take risks. However, there is little research on whether and how CoCos would change banks' risk taking incentives.

A new paper by Natalya Martynova and Enrico Perotti contributes to filling this gap.<sup>5</sup> They find that to reduce banks' risk taking incentives, it is optimal to set a high trigger for CoCo. On the contrary, high conversion ratio (or "equity dilution") may worsen risk incentives. Hence, for a given yield of CoCo, regulators should only accept CoCos with sufficiently high triggers as regulatory capital.

# Account number portability reduce barriers for consumers to switch between banks (D)

Policymakers around the world call for more competition in the banking sector. One barrier to achieving this goal is the currently limited flexibility for consumer to switch across different bank services.

Research by Carin van der Cruijsen and Maaike Diepstraten analyzes bank switching behavior of consumers and the effectiveness of policies to ease this switching.<sup>6</sup> They find that the propensity to switch varies across banking products. Policies geared towards reducing the hassle of switching, such

<sup>&</sup>lt;sup>4</sup> Cenkhan Sahin and Jakob de Haan (2015) "Market reactions to the ECB's Comprehensive Assessment", DNB WP No. 463 (forthcoming in Economics Letters).

<sup>&</sup>lt;sup>5</sup> No. 480 Convertible bonds and bank risk-taking (Natalya Martynova and Enrico Perotti)

<sup>&</sup>lt;sup>6</sup> Carin van der Cruijsen and Maaike Diepstraten (2015) "Banking products: you can take them with you, so why don't you?" DNB WP No. 490.

as allowing for account number portability (enabling customers to retain their account number when changing banks), will be effective in easing switching. They also show that it will be especially hard for foreign banks to attract Dutch consumers.

The work has already been used in policy, and will be used in future meetings with the NVB and the AFM.<sup>7</sup> It is one of the studies that Minister Dijsselbloem will use to answer the questions in resolution 31789-60 (Anke de Vries en Wouter Koolmees, April 2015).

# 2. Detailed report about activities

The DNB Research programme 2015 has 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: <u>http://www.dnb.nl/en/onderzoek-2/dnb-onderzoeksbeleid/index.jsp</u>. Appendix 1 provides an overview of the status of the projects included in the 2015 DNB research programme.

Table 1 summarizes the progress made on individual projects. In 2015 12 (out of 71) projects were stopped for various reasons, mostly lack of sufficient results. In 2016 34 projects of the Research programme 2015 will be continued.

Theme:	Total number	Published as WP	Will soon be	Will be continued	Stopped:
	of projects:	or under review:	published:	in 2016:	
1.	19	4	2	10	3
2.	12	3	3	4	2
3.	20	5	2	10	3
4.	13	3	2	7	1
5.	7		1	3	3
Total	71	15	10	34	12

Table 1. Overview of the status of the projects in 2015 DNB research programme

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

<sup>&</sup>lt;sup>7</sup> These include the Werkgroep Betalingsverkeer, MOB Werkgroep Toegankelijkheid en Bereikbaarheid, meeting with de Betaalvereniging, answering questions from the parliament.

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 2015 a taskforce has worked on extending the model with a special focus on the interaction of the real and the financial sector, which has led to several changes. Most importantly, much progress has been made in developing a model for the banking sector, which will be incorporated in DELFI. Furthermore, a new model for the pension sector has been incorporated in DELFI. Revised National Accounts required re-estimation of the entire model.

DELFI has also been used extensively in 2015 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 assess the impact of changes in taxation.
- Scenarios for credit supply presented in the Occasional Study "Bank lending and capital" have been updated.
- The analysis of the consequences of further reducing the LTV-ratio has been updated.
- Scenarios have been made for analyzing the credit-to-GDP ratio.

In 2015 39 DNB working papers have been published. Working papers can be downloaded at: <a href="http://www.dnb.nl/en/onderzoek-2/publications/dnb-working-paper-series/index.jsp">http://www.dnb.nl/en/onderzoek-2/publications/dnb-working-paper-series/index.jsp</a>.

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=1934271.

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 on the DNB internet site: 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.

	A journals	B journals	C journals	Others
2009	3	15	4	4
2010	3	19	2	11
2011	4	16	9	38
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)
Forthcoming <sup>9</sup>	7 (6)	17 (11)	8 (8)	5 (3)

Table 2. Journal publications by DNB staff in 2009-2015

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)
Forthcoming	2 (0)		3 (2)	

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

In 2015 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 2015.

<sup>&</sup>lt;sup>8</sup> Includes one publication in journal that has A-status on TI list.

<sup>&</sup>lt;sup>9</sup> Measured at the end of January 2016 (includes papers already published in 2016).

Name:	Affiliation:
Andrew Rose	University of California
Franzesco Zanetti	University of Oxford
Jan Groen	Federal Reserve Bank of New York
Rafael Repullo	CEMFI
Renee Adams	University of New South Wales
Vincent Sterk	University College London
William Nelson	Board of Governors of the Federal Reserve System
Hiro Ito	Portland State University
Eric van Wincoop	University of Virginia
Guido Ascari	University of Oxford

Table 4. Visiting scholars 2015

In 2015 the following conferences and workshops have been organised:

- 29-30 January 2015: Conference on Macroprudential Regulation: From Theory to Implementation (jointly organized with EBC of Tilburg University; selected papers will be published in special issue of *Journal of Financial Stability*)
- 21-22 May 2015: Conference on the New Normal in the Post-Crisis Era at City University of Hong Kong (jointly organized with City University HK and JIMF; selected papers will be published in special issue of the *Journal of International Money and Finance*)
- 29-30 October 2015 Structural Reforms. Moving the Debate Forward (jointly organized with the IMF; selected papers will be published in a conference volume to be published by Springer).
- 19-20 November 2015 18th Annual DNB Research Conference on "Distributional implications of the crisis and policy responses.

Details about these conferences are available at:

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

In 2015 there were 36 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.

# Appendix 1. Research projects 2015

### 1. Monetary strategy, business cycles and price stability

1. Fiscal multipliers at the extensive margin Andrea Colciago, Vivien Lewis (University of Leuven), Lorenza Rossi (University of Pavia) Status: will be continued in 2016.

2. Who creates jobs over the business cycle? (started in 2014) Andrea Colciago, Antonella Trigari (Bocconi University) Status: will be continued in 2016.

*3.Structural reforms in time of crisis* Andrea Colciago, Tiziano Ropele (Bank of Italy) Status: stopped.

4.Survey on communication about unconventional monetary policy (started in 2014) Jakob de Haan, David-Jan Jansen, Richhild Moessner Status: published as DNB WP 475.

5.Lending shocks and macroeconomic stability Emmanuel de Veirman Status: will be continued in 2016.

6.*Firm volatility and the Phillips curve* (project started in 2014) Emmanuel de Veirman Status: stopped.

7.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 2016.

8. *Inflation differentials in the euro area: the role fiscal policy in real time* Niels Gilbert, Jasper de Jong Status: stopped.

9. Wage dynamics after the crisis Marco Hoeberichts Status: will be continued in 2016.

10. Household inflation expectations in a context of low inflation David-Jan Jansen, Matthias Neuenkirch (University of Trier), Edith Neuenkirch (University of Marburg) Status: will be continued in 2016.

11.FDI and international business cycle synchronization: a structural analysis (started in 2012) Jos Jansen, Ad Stokman Status: will be continued in 2016.

12. Cyclical and structural imbalances in the euro area Mark Mink, Jakob de Haan, Jan Jacobs (University of Groningen) Status: will soon be published as DNB Working Paper.

13.Loan default risk in the banking sector and macroeconomic stability

Sebastiaan Pool Status: will be continued in 2016.

14.The role of monetary authorities in (de)stabilizing the financial sector Sebastiaan Pool Status: will be continued in 2016.

15.How does the market respond to a government announcement? (started in 2014) Ayako Saiki, Jeffrey Frankel (Harvard University) Status: under review.

16.The impact of income equality and business cycle Ayako Saiki Status: will soon be published.

17.Comparison of the income distribution effect of unconventional monetary policy – UK, US, Germany, and Japan Ayako Saiki Status: will be continued outside DNB.

18. *The formation of European inflation expectations: One learning rule does not fit all* Christina Strobach (WHU - Otto Beisheim School of Management), Carin van der Cruijsen Status: published as DNB WP 472.

19.Effectiveness of central bank balance sheet as monetary policy tool Jan Willem van den End, Christiaan Pattipeilohy Status: published as DNB WP 473.

# 2. Financial stability and macro-prudential supervision

*1.The liquidity of financial instruments* Clemens Bonner, Iman van Lelyveld Status: will be continued in 2016.

2. Following the herd or leading it? Portfolio allocation of Dutch occupational pension funds Dirk Broeders, Peter Minderhoud, Willem Schudel Status: will soon be published.

*3.A theory of bazookas, or "how to design large-scale official support"* (started in 2013) Jon Frost Status: published as DNB WP 479.

*4.Financial crises and macroeconomic performance* (started in 2011) Gabriele Galati, Chen Zhou Status: stopped.

*5.Sovereign-bank interdependencies: an empirical exploration* (started in 2013) Krzysztof Muzalewski, Remco van der Molen, Jon Frost Status: will soon be published.

6.*Measuring systemic risk in OTC-derivatives markets* Anouk Levels Status: will be continued in 2016.

7. Financial sector development and external shocks in small open economies (started in 2012)

Steven Poelhekke, Thorsten Beck (Cass Business School) Status: will soon be published.

8.*Inherent instability in the financial sector* Sebastiaan Pool Status: will be continued in 2016.

9.Demand and supply of mortgage credit Alex van de Minne (UvA), Federica Teppa, Johan Verbruggen Status: published as DNB WP 486.

10.Identifying the determinants of competitiveness: A value added trade share perspective (started in 2013)Robert Vermeulen, Martin Schmitz (ECB)Status: will be continued in 2016.

11.Transmission of shock in capital flows and competiveness in selected European economies (started in 2014)Robert Vermeulen, Karsten Staehr (Eesti Pank)Status: will soon be published.

12.Price-based measures of systemic importance (started in 2014) Nikola Tarashev (BIS), Chen Zhou Status: stopped.

# 3. Micro-prudential supervision and conduct of financial institutions

*1.X-efficiency of Dutch pension providers* Gosse Alserda (EUR), Jaap Bikker, Fieke van der Lecq (EUR) Status: will soon be published.

2.Developing secondary legislation: the Achilles heel of the EU's framework on financial services? Niels van der Bijl Status: stopped.

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: will be continued in 2016.

4. Competition in the non-life insurance industry: a cross-country comparison (started in 2014) Jaap Bikker, Thomas Maas (University of Utrecht) Status: will be continued in 2016.

5. Early warning and forecasting performance of HAMs in housing markets 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 2016.

6.*Regular equivalence in interbank markets* (started in 2012) Wilko Bolt, Rod Garratt (University of California Santa Barbara), Iman van Lelyveld Status: will be continued in 2016.

7. Strategic defaults: An empirical identification

Margherita Bottero (BoI), Steven Poelhekke, Razvan Vlahu Status: will be continued in 2016.

8.A return analysis of pension fund investment portfolios Dirk Broeders, Arco van Oord, David Rijsbergen Status: will be continued in 2016.

9. *The role of foreign banks in trade* Stijn Claessens (IMF), Omar Hassib (Maastricht University), Neeltje van Horen Status: will be continued in 2016.

10.The robustness of risk measures in market risk regulation Jon Danielsson (LSE), Chen Zhou Status: under review.

11.Recovery measures of underfunded pension funds: contribution increase, no indexation, or pension cut? (started in 2014)Leo de HaanStatus: published as DNB WP 485.

12.Spoilt for choice? Firm-bank matching in local credit markets Ralph de Haas (EBRD), Neeltje van Horen Status: will be continued in 2016.

13.Internal asset transfers and risk taking in financial conglomerates Natalya Martynova Status: will be continued in 2016.

14.Convertible bonds and bank risk taking Natalya Martynova, Enrico Perotti (UvA) Status: published as DNB WP 485.

15. What drives the markets' view on bank capitalization? Mark Mink (DNB), Jakob de Haan (DNB), Eric van Loon (Ministry of Finance) Status: will be continued in 2016.

16.To increase or not to increase? The determinants of banks' sovereign exposure Steven Ongena (Zurich University), Alex Popov (ECB), Neeltje van Horen Status: under review.

17.Do banks lend to countries with overvalued currencies? (started in 2014) Ayako Saiki, Dennis Quinn (Georgetown University) Status: will soon be published.

18.Securitization and insolvency risk (started in 2014)Maarten van OordtStatus: stopped (author left DNB).

19.Board functioning: A multilevel perspective on the determinants of effective board behaviour in financial institutions (started in 2012) Dennis Veltrop, Jakob de Haan Status: published as DNB WP 488.

20. Understanding the effects of qualitative supervision policies (started in 2012) Aloys Wijngaards, David-Jan Jansen Status: stopped.

## 4. Financial literacy and behaviour of households and companies

1. Using point-of-sale payment data for estimating household consumption Wilko Bolt, Carin van der Cruijsen, Nicole Jonker Status: will be continued in 2016.

2.Mode effects on self-reported household financial data 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: will be continued in 2016.

3. Uncertainty about future consumption and precautionary saving Dimitris Christelis (CSEF), Dimitris Georgarakos (Goethe University Frankfurt), Tullio Jappelli (University of Naples), Maarten van Rooij Status: will soon be published.

4. Housing price shocks and trust in financial advice (started in 2014) Dimitris Georgorakos (Goethe University Frankfurt), Roman Inderst (Goethe University Frankfurt), Maarten van Rooij Status: will be continued in 2016.

5.Intraday payment choices: mainstream vs. payments innovations (started in 2014) Lola Hernandez, Nicole Jonker Status: will be continued in 2016.

6.How wide is the Dutch border: assessing the effects of increases in excise duties on cross-border trade filling stations David-Jan Jansen, Nicole Jonker Status: will be continued in 2016.

7.*Inflation expectations and household behaviour* Malka de Castro Campos, Federica Teppa (DNB) Status: will soon be published.

8. *Friends, family and framing: An international comparison of longevity expectations formation* Hazel Bateman (University of New South Wales); Federica Teppa; Susan Thorp (University of Sydney) Status: published as DNB WP 491.

9. *In love with the debit card but still married to cash* Carin van der Cruijsen, Lola Hernandez, Nicole Jonker Status: published as DNB WP 461.

10.Flat or flexible pension? Consumers' expenditures before and after retirement Carin van der Cruijsen, Nicole Jonker Status: will be continued in 2016.

11.Changing payment patterns at point-of-sale: their drivers Carin van der Cruijsen, Mirjam Plooij Status: published as DNB WP 471.

*12.On the value of virtual currencies* Maarten van Oordt, Wilko Bolt Status: stopped (author left DNB).

13.Economic and institutional determinants of mortgage default Razvan Vlahu, Jakob de Haan Status: will be continued in 2016.

# 5. Modelling and forecasting

1.Modelling spending under conditions of low inflation/deflation Robert-Paul Berben, Ad Stokman Status: will be continued in 2016.

2.A labour market indicator for the Netherlands Wilko Bolt, Johan Verbruggen Status: stopped.

3.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 be continued in 2016.

4.Improving short-run predictions of GDP by statistical methods by subjective information (started in 2013)Jos Jansen, Jasper de WinterStatus: will soon be published.

*5.Natural resource dependence of the Dutch economy* Jante Parlevliet, Robert Vermeulen Status: stopped (will become part of Occasional Study).

6.*Forecasting with large panel data sets* Andreas Pick Status: will be continued in 2016.

7.*Trade financing practices before, during and after the Great Recession* Ad Stokman Status: stopped.

# Appendix 2. DNB Working Papers in 2015

No. 454	Mauro Mastrogiacomo and Rob Alessie, Where are the retirement savings of self- employed? An analysis of 'unconventional' retirement accounts
No. 455	Clemens Bonner and Paul Hilbers, Global liquidity regulation - Why did it take so long?
No. 455	
No. 456	Leo de Haan, Jan Willem van den End and Philip Vermeulen, Lenders on the storm of wholesale funding shocks: Saved by the central bank?
No. 457	Wilko Bolt and David Humphrey, Assessing bank competition for consumer loans
No. 458	Robert Beyer and Michael Stemmer, From progress to nightmare - European regional
1101 120	unemployment over time
No. 459	Stijn Claessens and Neeltje van Horen, The impact of the global financial crisis on banking
110. 437	globalization
No. 460	0
10.400	Francisco Blasques, Falk Bräuning and Iman van Lelyveld, A dynamic network model of
No. 461	the unsecured interbank lending market
No. 461	Carin van der Cruijsen, Lola Hernandez and Nicole Jonker, In love with the debit card but
	still married to cash
No. 462	Koen van der Veer, Loss shocks and the quantity and price of private export credit
	insurance: Evidence from a global insurer
No. 463	Cenkhan Sahin and Jakob de Haan, Market reactions to the ECB's Comprehensive
	Assessment
No. 464	Melanie de Waal, Floor Rink and Janka Stoker, How internal and external supervisors
	influence employees' self-serving decisions
No. 465	Andrea Colciago and Lorenza Rossi, Firms entry, oligopolistic competition and labor
	market dynamics
No. 466	Peter Heemeijer and Ronald Heijmans, Central bank intervention in large value payment
	systems: An experimental approach
No. 467	Natalya Martynova, Effect of bank capital requirements on economic growth: a survey
No. 468	Melle Bijlsma and Robert Vermeulen, Insurance companies' trading behaviour during the
	European sovereign debt crisis: Flight home or flight to quality?
No. 469	Robert Vermeulen, Marco Hoeberichts, Bořek Vašíček, Diana Žigraiová, Kateřina
	Šmídková and Jakob de Haan, Financial stress indices and financial crises
No. 470	Nicole Jonker, Mirjam Plooij and Johan Verburg, Does a public campaign influence debit
	card usage? Evidence from the Netherlands
No. 471	Carin van der Cruijsen and Mirjam Plooij, Changing payment patterns at point-of-sale: their
	drivers
No. 472	Christina Strobach and Carin van der Cruijsen, The formation of European inflation
	expectations: One learning rule does not fit all
No. 473	Jan Willem van den End and Christiaan Pattipeilohy, Central bank balance sheet policies
1101 175	and inflation expectations
No. 474	Dirk Broeders, Arco van Oord and David Rijsbergen, Scale economies in pension fund
	investments: A dissection of investment costs across asset classes
No. 475	Richhild Moessner, David-Jan Jansen and Jakob de Haan, Communication about future
110. 175	policy rates in theory and practice: A Survey
No. 476	Bořek Vašíček, Diana Žigraiová, Marco Hoeberichts, Robert Vermeulen, Kateřina
110.470	Šmídková and Jakob de Haan, Leading indicators of financial stress: New evidence
No. 477	Rasmus Wiese, Richard Jong-A-Pin and Jakob de Haan, Are expenditure cuts the only
110.477	effective way to achieve successful fiscal adjustment?
No. 179	5
No. 478	Maarten van Oordt and Chen Zhou, Systemic risk of European banks: Regulators and
NI 470	markets
No. 479	Jon Frost, A theory of bazookas, or; "when (and when not) to use large-scale official sector
NL 400	support"
No. 480	Natalya Martynova and Enrico Perotti, Convertible bonds and bank risk-taking
No. 481	Dorinth van Dijk and Marc Francke, Internet search behavior, liquidity and prices in the
	housing market

No. 482 Simas Kucinskas, Liquidity creation without banks

- No. 483 Reinder Haitsma, Deren Unalmis and Jakob de Haan, The impact of the ECB's conventional and unconventional monetary policies on stock markets
- No. 484 Damiaan Chen, Roel Beetsma and Dirk Broeders, Stability of participation in collective pension schemes: An option pricing approach
- No. 485 Leo de Haan, Recovery measures of underfunded pension funds: higher contributions, no indexation, or pension cuts?
- No. 486 Alex van de Minne and Federica Teppa, Demand and supply of mortgage credit
- No. 487 Yakov Ben-Haim and Maria Demertzis, Decision making in times of uncertainty: An infogap perspective
- No. 488 Irene Mostert, Dennis Veltrop, Paula van Veen-Dirks and Jakob de Haan, Pawn or Vigilant Watchdog? How board vigilance and board tenure moderate the effects of executive tenure on board functioning
- No. 489 Patty Duijm and Sophie Steins, Short-termism of long-term investors? The investment behaviour of Dutch insurance companies and pension funds
- No. 490 Carin van der Cruijsen and Maaike Diepstraten, Banking products: you can take them with you, so why don't you?
- No. 491 Federica Teppa, Susan Thorp and Hazel Bateman, Family, friends and framing: A crosscountry study of subjective survival expectations
- No. 492 Jante Parlevliet, What drives public acceptance of reforms? Longitudinal evidence from the run-up of the increase of the Dutch retirement age

## Appendix 3. Overview of research seminars 2015

10 February 2015 Ralph Koijen, London Business School Shadow Insurance

3 March 2015 Rossana Merola, International Labour Office Consumption and Credit Constraints: A Model and Evidence for Ireland

17 March 2015 Jan Jacobs, University of Groningen Modeling Multivariate Data Revisions

24 March 2015 Michael Massmann, VU University Estimating Structural Parameters in Regression Models with Adaptive Learning

31 March 2015 Andrew Rose, University of California Domestic Bond Markets and Inflation

2 April 2015 Francesco Zanetti, University of Oxford Financial Shocks and Labor Market Fluctuations

7 April 2015 Dion Bongaerts, Erasmus University The Economics of Investor-Paid Credit Rating Agencies

14 April 2015 Sweder van Wijnbergen. University of Amsterdam Cocos, Contagion and Systemic Risk

21 April 2015 Michael Ehrmann, Bank of Canada Targeting Inflation from Below - How do Inflation Expectations Behave?

30 April 2015 Saki Bigio, Columbia University Banks, Liquidity Management and Monetary Policy

6 May Jan Groen, Federal Reserve Bank of New York Short-Term Forecasting of U.S. Growth Rates: Pooling Forecasts Using Higher Frequency Factors

12 May 2015 Rafael Repullo, CEMFI Search for Yield

20 May 2015 Michael Hutchison, University of California Fiscal Rules and Business Cycles in Emerging and Developing Economies

26 May 2015

Agnieszka Markiewicz, Erasmus University Top Incomes, Rising Inequality, and Welfare

2 June 2015 Renée Adams, University of New South Wales Women in Finance

9 June 2015Joan Muysken, Maastricht UniversityThe Deposit Financing Gap, the Current Account Surplus and Other Anomalies in the Dutch Economy

11 June 2015 Vincent Sterk, University College London The Dark Corners of the Labor Market

16 June 2015 Robin Lumsdaine, University of Portsmouth The Intrafirm Complexity of Systemically Important Financial Institutions

23 June 2015 Job Boerma, University of Minnesota, Openness and the (Inverted) Aggregate Demand Logic

18 Augustus 2015 William Nelson, Board of Governors of the Federal Reserve System Federal Reserve Monetary Policy Normalization

31 Augustus 2015Hiro Ito, Portland State UniversityClamoring for Greenbacks: Explaining the Resurgence of the US Dollar in International Public Debt

8 September 2015 George Pennacchi, University of Illinois A Reexamination of Contingent Convertibles with Stock Price Triggers

9 September 2015 Eric van Wincoop, University of Virginia/ NBER Self-Fulfilling Debt Crises: Can Monetary Policy Really Help?

15 September 2015 Artashes Karapetyan, Norges Bank Collateral versus Informed Screening during Banking Relationships

16 September 2015Wandi Bruine de Bruine, Leeds UniversityExpectations of inflation: Effects of Wording, Mode, and Opportunities to Revise

22 September 2015 Dirk Schoenmaker, Duisenberg School of Finance Regulating the Financial Cycle: An Integrated Approach with a Leverage Ratio

13 October Taylor Begley, London Business School The Strategic Under-Reporting of Bank Risk 20 October 2015 Skerdilajda Zanaj, University of Luxembourg Tax havens or Safe havens. What differences does it make for the removal of bank secrecy?

27 October 2015 Florian Sniekers, VU Buying First or Selling First in Housing Markets

29 October 2015 Seppo Honkapohja, Bank of Finland Targeting Prices or Nominal GDP: Forward Guidance and Expectation Dynamics

2 November 2015 Yasushi Hamao, Columbia Business School Selective Disclosure: The Case of Nikkei Preview Articles

3 November 2015 Pascal Golec, University of Amsterdam A Review on Safe Assets

10 November 2015 Albert Menkveld, VU Crowded Trades: An Overlooked Systemic Risk for Central Clearing Counterparties

24 November 2015 Gerhard Runstler, ECB Business and Financial Cycles: an Unobserved Components Models Perspective

3 December 2015 Susan Thorp, University of Sydney First Impressions Matter: An Experimental Investigation of Online Financial Advice

8 December 2015 Vadym Volosovych, Erasmus University Nationally Representative Firm Level data from the ORBIS Global Database: Construction and Some Applications for International Economics and Finance