December 2022
DNB Research Newsletter

DeNederlandscheBank
EUROSYSTEEM

Research highlights

1. Optimal Quantitative Easing in a Monetary Union

This paper explores the optimal allocation of government bond purchases within a monetary union, using a two-region dynamic stochastic general equilibrium (DSGE) model. Regions are asymmetric with respect to portfolio characteristics: substitutability between assets of different maturity and origin, home bias, and levels of government debt. An optimal Quantitative Easing (QE) policy under commitment does not only reflect different region sizes, but is also a function of these portfolio characteristics. By calibrating the model to the euro area, we show that optimal QE favors purchases from the smaller region (Periphery instead of Core), given that the former faces stronger portfolio frictions. Read more

2. 25th Annual Research Conference

The 25th Annual Research Conference took place on 10 and 11 November. The conference theme was: "Inflation Strikes Back: Drivers and Policy Reactions". Here you can get a quick glimpse that will enable you to pretend you were there. Read more

3. Monetary policy effects in times of negative interest rates: What do bank stock prices tell

It is a well-established fact that banks' interest margins are squeezed when central banks reduce their interest rates below zero. This is because retail deposits are characterized by zero lower bound, meaning that banks' funding costs remain relatively high while all interest rates are falling. The full impact of negative rates is hard to establish at an early stage, however, as it takes time to materialize while other factors, such as the shape of the yield curve, also play a role. Read more

4. PhD defense Frank van der Horst

Interview with Frank van der Horst, researcher at the cash division of DNB. On October 10, Frank defended his PhD thesis titled "Factors affecting the probability of detecting a counterfeit banknote" at the Vrije Universiteit Amsterdam. Read more

Publications (since October 2022)

Working Papers

759 - Who participates in the credit market during the COVID-19 pandemic?

Evangelos Charalambakis, Federica Teppa and Athanasios Tsiortas

758 - Intergenerational Sharing of Unhedgeable Inflation Risk
Damiaan H.J. Chen, Roel M.W.J. Beetsma and Sweder J.G. van Wijnbergen

757 - A Literature Review of Securities Holdings Statistics Research and a Practitioner's Guide
Martijn Boermans

756 - The rebalancing channel of QE: New evidence at the security level in the euro area
Tom Hudepohl

755 - The effects of monetary policy across fiscal regimes
Roben Kloosterman, Dennis Bonam, Koen van der Veer

754 - Nowcasting GDP using machine learning methods
Dennis Kant, Andreas Pick, Jasper de Winter

753 - The Effect of Unemployment on Interregional Migration in the Netherlands
Cindy Biesenbeek

752 - Effectiveness of Central Bank Swap Lines in Alleviating the Mispricing of FX Swaps at the Start of the COVID-19 Pandemic
Kai Schellekens, Patty Duijm

751 - Mortgage prepayments and tax-exempted intergenerational transfers: from rich parents to rich children?
Yue Li, Mauro Mastrogiacomo

The effects of climate change on the natural rate of interest: a critical survey
ECB Working Paper 2744
Francesco Paolo Mongelli, Wolfgang Pointner, Jan Willem van den End

Did Insurers Become Risk-Loving During "Low-for-Long"? The Role of Returns, Ratings, and Regulation
IMF Working Paper 2022/202
Jeroen Brinkhoff, Juan Sole

Occasional Studies

Cryptoactiva: evolutie en beleidsrespons
Vera Lubbersen, Peter Wierts

DNB Analyses

Regulering van het middenhuursegment
Robert de Regt, Edi Vording, Cindy Biesenbeek

Lessen van de jaren zeventig en tachtig voor de Nederlandse bankensector
Yvo Mudde

Wisselwerking lonen en prijzen: een negatieve spiraal?
Wilko Bolt, Dennis Bonam, Gerbert Hebbink, Maarten van Rooij, Emmanuel De Veirman, Maikel Volkerink

Bank lending to Dutch non-financial corporations: drivers and dynamics
Paolo Bonomolo, Frank van Hoenselaar, Bahar Öztürk, Irina Stanga

De haalbaarheid en betaalbaarheid van een Nederlands verzekeringsgarantiestelsel
Jeroen Brinkhoff, Inge Neffke, Maarten van Campenhout

Hoe raken de gestegen energiekosten het Nederlandse bedrijfsleven?
Beer Pruijt, Guus Brouwer

Published journal articles

Optimal quantitative easing in a monetary union
Serdar Kabaca, Kostas Mavromatis, Romanos Priftis and Rense Maas
European Economic Review, 2023, 152, 104342

Product diversification as a performance boosting strategy? Drivers and impact of diversification strategies in the property-liability insurance industry
Patty Duijm and Ilke van Beveren
Risk Management and Insurance Review, 2022, 25 (3), 303-328.

A fiscal capacity with endogenous access in a monetary union
Dennis Bonam, Marien Ferdinandusse and Pascal Jacquinot
Economics Letters, 2022, 221, 110916.

Forward guidance and the role of central bank credibility under heterogeneous beliefs
Gavin Goy, Cars Hommes and Kostas Mavromatis
Journal of Economic Behavior and Organization, 2022, 200, 1240-1274.

Forthcoming journal articles

Monetary policy effects in times of negative interest rates: what do bank stock prices tell us?
Joost Bats, Massimo Giuliodori and Aerdt Houben
Journal of Financial Intermediation

Fickle emerging market flows, stable euros, and the dollar risk factor
Martijn Boermans and John Burger
Journal of International Economics

Published books/articles in books

The interaction of monetary and financial tasks in different central bank structures
Aerdt Houben, Jan Kakes, and Annelie Petersen
In: R. Holzmann and F. Restoy (eds.), Central banks and supervisory

architecture in Europe: lessons from crises in the 21st century, 2022, Edward Elgar.

Other publications

How do central bank lending operations interact with equity offering announcements?
Suerf policy brief 444
Massimo Giuliodori, Jan Kakes and Dimitris Mokas

Inflatieverwachtingen werken sterker door in loongroei
Economisch Statistische Berichten 107 (4813).
Andra Smadu en Dennis Bonam

Nederlandse beleggingen in wapenindustrie fors afgenomen
Economisch Statistische Berichten 107 (4815).
Martijn Boermans

For a complete list of publications see our website.

Events

Research seminars

Past

4 October 2022: The pass-through from inflation perceptions to inflation expectations

Daria Minina (University of Amsterdam)

18 October: Dynamic Macroeconomic Implications of Immigration

Karl Walentin (Uppsala University)

15 November: Interest Rates, Market Power and Financial Stability

David Martinez-Miera (Universidad Carlos III de Madrid)

22 November: Transmission of Cyber Risk Through the Canadian Wholesale Payment System
Anneke Kosse (Bank for International Settlements)

29 November: United in Diversity: A HANK2 model of currency areas
Gernot Muller (University of Tuebingen)

13 December 2022: Policymakers' Uncertainty
Michael McMahon (University of Oxford)

Forthcoming

28 Feb 2023: TBA
Aleš Maršál (National Bank of Slovakia)

7 March 2023: TBA
Gabriel Zucman (UC Berkeley)

14 March 2023: TBA
John Lewis (Bank of England)

21 March 2023: TBA
Kasper Rozbach (Norges Bank/RUG)

Workshops and conferences

Past

4 November 2022: Netherlands Economists Day 2022

During this day economists come together to discuss relevant economic themes and to present recent research. A wide variety of academic and policy sessions is offered. Ernst Fehr (University of Zurich) will provide the keynote speech: "The Heterogenous Human Quest for Fairness & Equality". DNB is one of the organizers of the Netherlands Economists day.

10-11 November 2022: DNB annual research conference

Inflation Strikes Back: Drivers and Policy Reactions

The focus of the conference is on driving factors of inflation and challenges for central banks in light of recent economic developments. We aim to provide a platform for researchers from academia, central banks, and other policy institutions to present and discuss their findings related to inflation dynamics.

20 December 2022: XAmsterdam Macroeconomic Workshop

This workshop organized by DNB aims at bringing together leading researchers, junior scholars and experts from the policy community in the field of macroeconomics, and at fostering interactions between economists in the US (or other parts of the world) and economists in the Netherlands or Europe. Accepted papers will be discussed by an expert in the field.

Other news

Wilko Bolt won the Best Lecturer Award for the academic year 2021-2022 at the School of Business and Economics of the Vrije Universiteit Amsterdam.

Daniel Dimitrov defended his PhD thesis at the University of Amsterdam on November 29th. The title of his thesis is "Three Essays on the Optimal Allocation of Risk with Illiquidity, Intergenerational Sharing and Systemic Institutions".

Research highlights, details

1. Optimal Quantitative Easing in a Monetary Union

PSPP and Portfolio Rebalancing

Since its implementation, the Public Sector Purchase Program (PSPP) has triggered substantial intra- and extra euro area portfolio rebalancing. We focus on the former and analyze the effectiveness of QE through the lens of a New-Keynesian two country DSGE model for a monetary union where households in the Periphery and the Core hold short- and long-term government bonds issued in both regions. The model allows for endogenous variation in the term premia which is determined by the relative holdings of short- and long- term securities. Using Securities Holdings Statistics data to calibrate the short and long-term shares in portfolios, we find that the euro area is subject to strong heterogeneity not only in home bias (higher in the Periphery than at the Core), but also in the degree of substitutability between the two types of assets. These asymmetries affect the effectiveness of

QE in each region. In general, the stronger the substitutability between short and long-term assets, the larger the portfolio rebalancing effect on the term premia for a given level of asset purchases. This is because, QE engineers a stronger portfolio rebalancing towards short-term assets in this case, suppressing thereby the term premia faster.

Design of Optimal QE and Policy Implications
In our baseline scenario, we assume that the ECB purchases assets from the Core and the Periphery according to the capital key. As an alternative scenario, we design optimal monetary policy. We show that the ECB should buy relatively more bonds issued in the Periphery than at the Core, given that the former is subject to higher portfolio frictions. In general, optimal policy shows that the ECB should adopt a higher flexibility in the way it conducts its purchases from each region. Asymmetries not only in portfolio characteristics, but also in inflation rates or in the degrees of price stickiness as well as in consumption levels can rationalize deviations from the existing capital key. Overall, the predictions of our model are broadly consistent with the set-up under the Pandemic Emergency Purchase Program (PEPP) of the European Central Bank (ECB), which was launched in March 2020 as a response to the COVID-19 pandemic and which allows for a flexible allocation of purchases across euro area jurisdictions.

Read more? See the publication Optimal quantitative easing in a monetary union in the *European Economic Review* by Serdar Kabaca, Renske Maas, Kostas Mavromatis and Romanos Priftis.
Go to the Top

2. 25th Annual Research Conference

The conference featured two keynote speeches by Lucrezia Reichlin and Fernando Alvarez, a lively policy panel with Janet Henry, Chiara Osbat, and Argia Sbordone, and sixteen high-quality research papers. Klaas Knot opened the conference with an insightful speech in which he highlighted the importance of demand and supply factors driving the current high inflation. He acknowledged that the interaction between the monetary and fiscal policies is just one aspect of the complexity of the policy reaction to the current economic situation.

The invited papers discussed several aspects underlying the conference's theme. We want to bring to your attention two of the key questions addressed in these studies, which provided important takeaways.

In her keynote address, Lucrezia Reichlin (London Business School) used trend-cycle models and factor models to examine various inflation puzzles. One of her findings is that shocks to oil supply have more significant effects on inflation in the euro area than in the United States. She argued that inflation was lower in the euro area in the aftermath of the 2021 oil shock because of the downward effect on inflation stemming from low aggregate demand in the euro area.

One of the conference's sessions focused on the relationship between inflation and uncertainty. Vivien Lewis (Deutsche Bundesbank) presented a general equilibrium model with endogenous price flexibility

that formalizes the idea that shifting to a high-uncertainty regime incentivizes firms to invest in their ability to adjust prices flexibly. She argued that increased resilience to adverse supply shocks dampens the entry-exit multiplier, a channel of demand amplification under sticky prices. Lorenza Rossi (Lancaster University) used a DSGE model with firm heterogeneity and dynamics to show how shocks that increase inflation expectations are followed by a drop in output and an endogenous increase in uncertainty that amplifies the recessionary effect of the shock. She argued that there are asymmetric effects in the transmission of inflation expectations shocks, with those that increase inflation expectations having stronger effects than shocks that reduce inflation expectations.

Read more? An extended summary of the conference and information on the program, papers, presentations, and discussions are available on the conference website.
Go to the Top

3. Monetary policy effects in times of negative interest rates: What do bank stock prices tell us?

Using bank stock prices as a performance measure

This article analyzes the impact of negative interest rates on banks' stock prices. An advantage of using stock prices is that these are forward-looking, which allows an early assessment of the impact of negative rates. Most studies consider actual earnings data, which are more precise but only available after a significant time lag. In addition, stock prices are available at a high frequency, so they can easily be linked to measures of monetary shocks at specific points in time. To explore how the impact of monetary policy evolves in a negative interest rate environment, the study employs rolling regressions.

Central banks should be cautious with negative policy rates

The study shows that a downward shift and a flattening of the short end of the yield curve have persistent negative effects once the interest rate environment is negative. Moreover, this effect is particularly strong for banks that depend most on deposit funding, which confirms that the zero lower bound seems to play a role. At the same time, a surprise movement at the longer end of the yield curve does not affect bank stock prices, which probably reflects that deposit margins are relatively unaffected by such shocks. A policy conclusion may therefore be that central banks should be cautious when deciding on reducing policy rates below zero, while policies affecting longer-term yields – such as quantitative easing and yield curve control – may deserve

special consideration when interest rates are close to the zero lower bound.

Read more? See the publication Monetary policy effects in times of negative interest rates: What do bank stock prices tell us? in the *Journal of Financial Intermediation* by Joost Bats, Massimo Giuliodori and Aerdt Houben.
Go to the Top

4. PhD defense: interview with Frank van der Horst

Congratulations! How was your PhD defense?

My two sons were my paranymphs and they managed to take away my stress. It was rather exciting beforehand, as you have no idea of what kind of questions you will receive. Luckily it went fine and I could enjoy the ceremony. Just like the reception, where I was serenaded by my colleagues

What are the main conclusions of your research?

According to central banks, it is easy to check a note for authenticity. Therefore, it does not seem logical that people sometimes accept counterfeit euro banknotes, especially if these banknotes are not properly mimicked. In the dissertation I propose a model that provides insight into the acceptance or rejection of a counterfeit. This model is based on dual-process theories, which assume that there are two different processes that people use to arrive at their decisions. Fast autonomous processes (Type 1) are assumed to produce standard responses, unless intervened by more analytical thought processes (Type 2). In this case, this means that the default response is an automatic acceptance of a counterfeit (Type 1), which turns into a deliberate authentication process (Type 2) caused by three reasons: (i) low trust (e.g. someone has been faked before) , (ii) an unusual environment in which the cash transaction takes place, or (iii) poor quality of the banknote. Depending on the capabilities of the assessor and the properties of the security features of a genuine banknote, this authentication process may or may not lead to recognizing counterfeit banknotes.

How can you apply your PhD research in your policy work at DNB?
Among other things, our department is involved in policy to reduce the number of counterfeit banknotes and contributes to ideas in a European context about the design of new banknotes.

And now? Will you keep doing research?
I would definitely like that!

Read more? See Frank's Personal page
Go to the Top

This is a DNB-publication of the **Economic Policy and Research Division**

To **subscribe/unsubscribe** to DNB Research Newsletter, please send an email to: office.ebo@dnb.nl.

De Nederlandsche Bank N.V.

DeNederlandscheBank
EUROSYSTEEM