

# The Impact of the ECB Asset Purchases on the European Bond Market Structure: Granular Evidence on Ownership Concentration

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Views expressed are those of the authors and do not necessarily reflect official positions of De Nederlandsche Bank

# Motivation

- 2015Q1: Eurosystem initiates QE with **PSPP** and with its market intervention it aims to “to create as little distortion as possible”
- Emerging empirical literature on **impact of QE**
  - Yields (**Gagnon et al. 2011, IJCB**; **Krishnamurthy & Vissing-Jorgensen 2011, NBER**)
  - Exchange rate (**Neely 2015, JBF**)
  - Macro-economic effects (**Kapetanios et al. 2012, EJ**; **Waele & Wieladek 2016, JME**)
- **Micro market structure evidence missing**
  - We study impact on *individual* bond ownership distribution
  - *Did QE affect the market structure of bond ownership concentration?*

# Theoretical background

- QE purchases market neutral, blind buyer?
- Signalling effects ([Bauer & Rudebusch 2014](#), *IJCB*)
- Portfolio rebalancing ([Vayanos & Vila 2009](#), *NBER*)
  
- **Micro market structure of bond holdings**
  - Impacts transmission ([Christensen & Krogstrup 2016](#), mimeo; [Ferdinandusse et al. 2016](#), mimeo)
  - Liquidity and price shock effects of concentration ([Boermans et al 2016](#), *EL*)
  - Liquidity resilience ([IMF 2015](#); [Valiante 2015](#), mimeo)
  - Scarcity ([Gerba & Macchiarelli 2016](#), mimeo)

# Data

- We use **bond holdings** data collected by euro area central banks  
(see **Boermans & Vermeulen 2016**, *DNB Working Paper 531* for details) [link](#)
- **Individual bonds**, holder-sector holder-country breakdown of euro area investors
  - e.g. NL0000102234: Dutch government 30 yr bond, held by sector  $s$  from country  $j$
- Time span: 2013Q2-2016Q1

# Method

- Difference in difference approach (**Diff-in-Diff**)
  - Several controls, how to define 'correct' trend (around 30.000 individual bonds)?
  - Issue: which segment of the bond market was *not* directly affected by QE?
- Several time period to evaluate impact of PSPP on **ownership concentration**
  - Disentangle signalling from portfolio rebalancing effects
  - Focus on **sovereign debt** only as eligibles (around 2,000 bonds in treatment)
  - Ownership concentration is determined by *HHI* (see **Boermans 2016**, *BIS IFC Bulletin*)

# Preliminary results

- PSPP had **signalling effect**: micro market structure changed in period prior to the actual purchases
  - Concentration increased, yet much less than control group
  - QE may have raised liquidity before the program implementation
- Little evidence for **portfolio rebalancing**: no shifts in market concentration
  - No distortionary effects?
  - 2015Q1-2016Q1 too short/long time period for rebalancing?
- Overall, economic effect QE on “network disruptions” in bond ownership rather limited!

# Concluding

- Granular information on portfolio holdings
- Impact of PSPP on micro market structure: *ownership concentration affected?*
- Preliminary outcome:
  - *Relative decline in concentration before the onset of PSPP, no impact during program*
- Possible explanations:
  - Did foreigners buy eligible assets? (**Kooijen et al. 2016**, BdF Working paper)
  - Ramifications for market liquidity (see **Boermans et al. 2016, EL**)
  - Role of scarcity on the eligible government bonds

# Discussion

- How to determine optimal “control group”; what is ‘correct’ trend?
  - unweighted, weighted by holdings or amount outstanding
  - Estimating “rest of the world” holdings, unobservable impact?
- Correct time frame to test theories?
  - Did signalling and rebalancing effects occur more rapidly (if so, we underestimate)