Repo Specialness in the Transmission of Quantitative Easing

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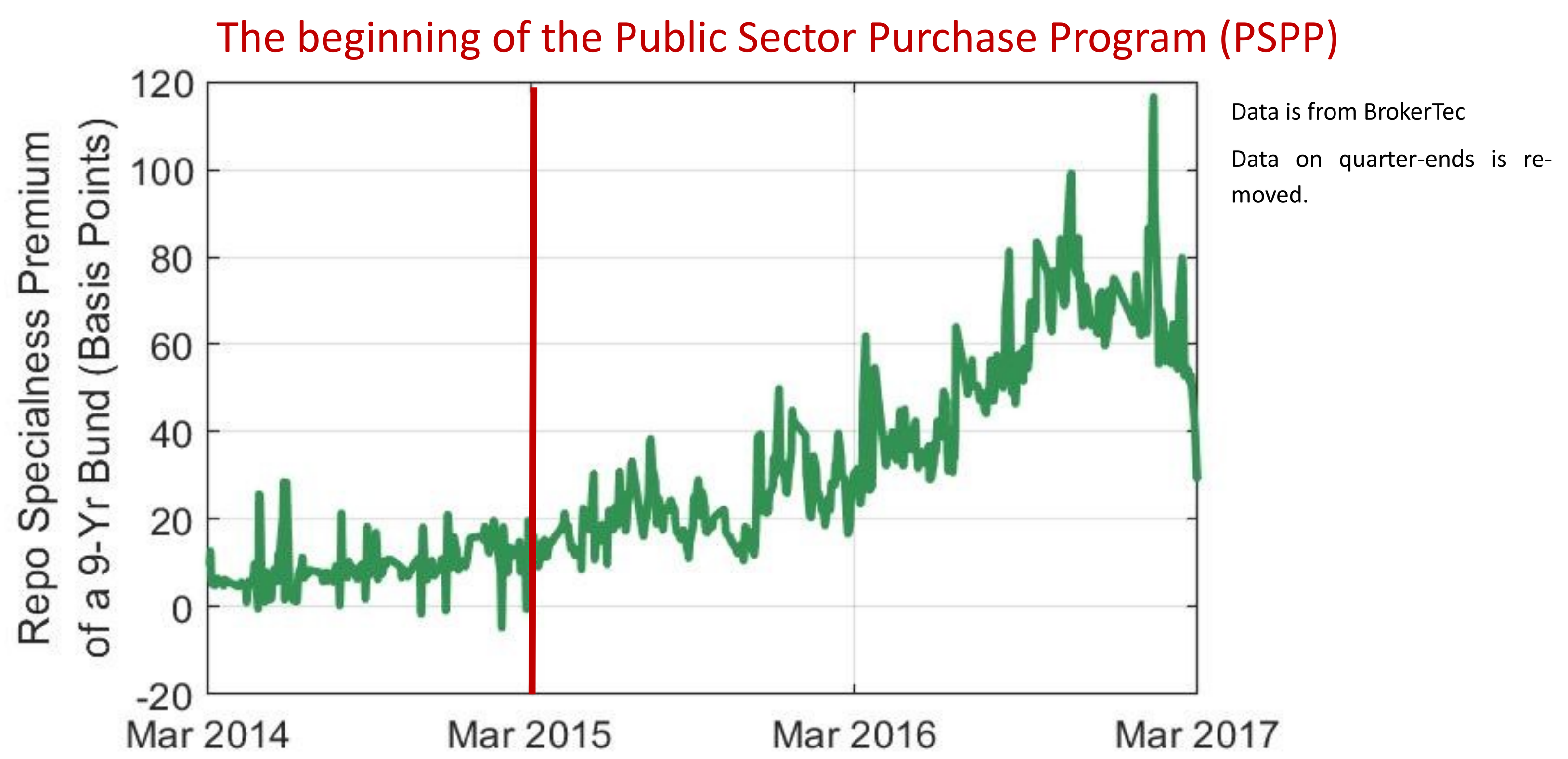
- The repo specialness of sovereign bonds can magnify the transmission of central bank quantitative easing into the real economy.
- Bonds that are special in the repo market are more expensive.
- Investors who cannot take advantage of the repo specialness of government bonds substitute for government bonds into corporate bonds.
- Empirical estimation in the context of the Public Sector Purchase Program (PSPP).

Motivation



The central bank buys government bonds

Should the central bank repo the purchased bonds back to the market?

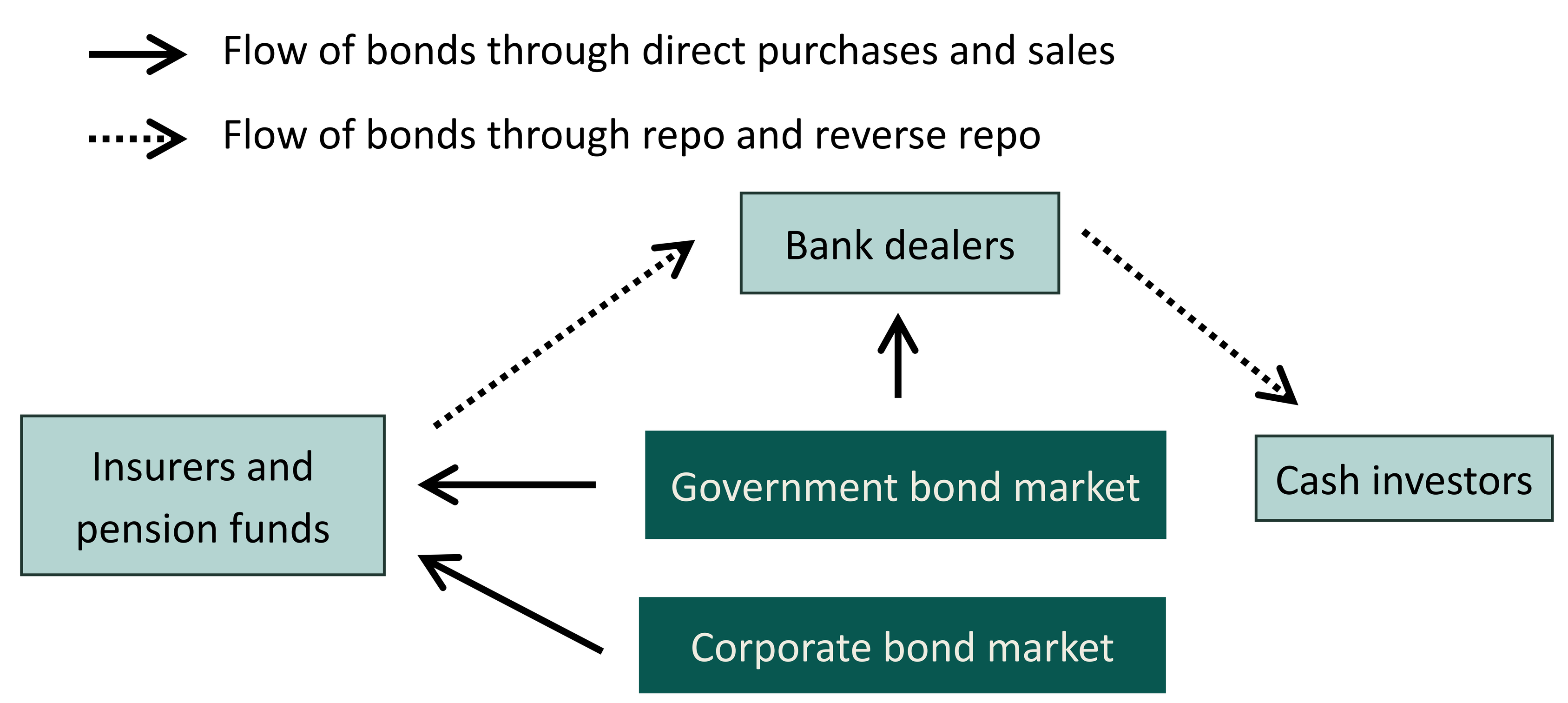
Yes: Reduced supply of bonds only in the cash market

No: Reduced supply of bonds in both the cash market and the repo market

Why Important

- Self-imposed rule: the Eurosystem cannot purchase under the PSPP more than 33% of the outstanding debts of any individual government.
- Size limits are necessary due to the prohibition of monetary financing (Mersch, 2016).
- Useful to increase the stimulus of the program per unit amount of purchase of government bonds.

Overview of the Theory



- Insurers and pension funds (ICPFs) purchase long-term bonds so that the duration of their assets is as long as the duration of their liabilities.
- Relative to banks, ICPFs cannot easily monetize repo specialness (Hill, 2015).
- Bank dealers intermediate the repo market.
- Cash investors demand government bonds for shorting, hedging, settling futures contracts, etc.

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The Non-Neutrality of QE

Departure from the Wallace (1981) neutrality result: a long-term bond gives non-pecuniary benefit to its holders that central bank reserves cannot.

Long-term Bonds are Useful to Hedge against Duration Risk

- ICPFs have very long-dated liabilities.
- Regulations or internal risk management requires ICPFs to match the duration of their assets and liabilities (Domanski, Shin, and Sushko, 2015).
- Long-term bond prices reflect the shadow price of the constraint on duration mismatch.

Government Bonds are Useful Collaterals in the Repo Market

- Collaterals (e.g., government bonds) circulate in the repo market to support a variety of trading activities (e.g., futures contract, shorting).
- Search friction limits the circulation velocity.
- The repo specialness premium reflects the shadow price of the constraint on the collateral velocity.

Theoretical Mechanism

Supply of Government Bonds in the Repo Market ⬇

↓ Search friction (Arrata, Nguyen, Rahmouni-Rousseau and Vari, 2018; Jank and Mönch, 2018; Corradin and Maddaloni, 2019)

Repo Specialness of Government Bonds ⬆

↓ Repo specialness is a source of extra revenue (Duffie, Garleanu, and Pedersn, 2002; D'Amico, Fan, and Kitsul, 2018; D'Amico and Pancost, 2018).

Long-term Government Bond Yields ⬇

↓ The portfolio allocation decision of insurance companies and pension funds

Long-term Corporate Bond Yields ⬇

Empirical Estimation: 2SLS Specification

Simulate the *counterfactual* purchasing decisions of the PSPP had the Eurosystem operated with only exogenous rules.

→ *Counterfactual* daily time series of quantity of bunds still left in the private market (free float)

↓ Aggregate free floats of bunds with remaining maturity close to the corporate bond i (Cahill, D'Amico, Li, and Sears, 2013).

The repo specialness premium of a bund with the same remaining maturity (bonds with similar remaining maturities are more substitutable).

Main instrument

First stage $s_{it} = \alpha_{1i} + \gamma_1 \cdot t + \beta_{1o} \cdot OIS_t + \beta_{1Q} \cdot Q_{it} + \beta_{1L} \cdot L_{it} + \epsilon_{1it}$

Second stage $y_{it} = \alpha_{2i} + \gamma_2 \cdot t + \beta_{2o} \cdot OIS_t + \beta_{2Q} \cdot Q_{it} + \beta_{2L} \cdot \hat{s}_{it} + \epsilon_{2it}$

Yield-to-maturity of corporate bond i