

# ECB FORUM ON CENTRAL BANKING

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NYU | STERN

TESTING THE PORTFOLIO  
REBALANCING CHANNEL  
OF QUANTITATIVE  
EASING



EUROPEAN CENTRAL BANK

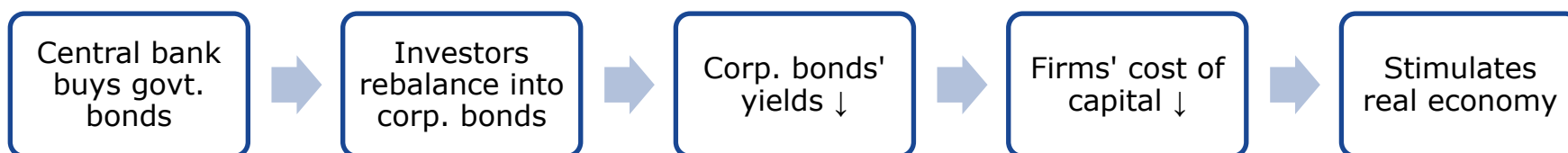
EUROSYSTEM

# Testing the Portfolio Rebalancing Channel of Quantitative Easing

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## The Portfolio Rebalancing Channel

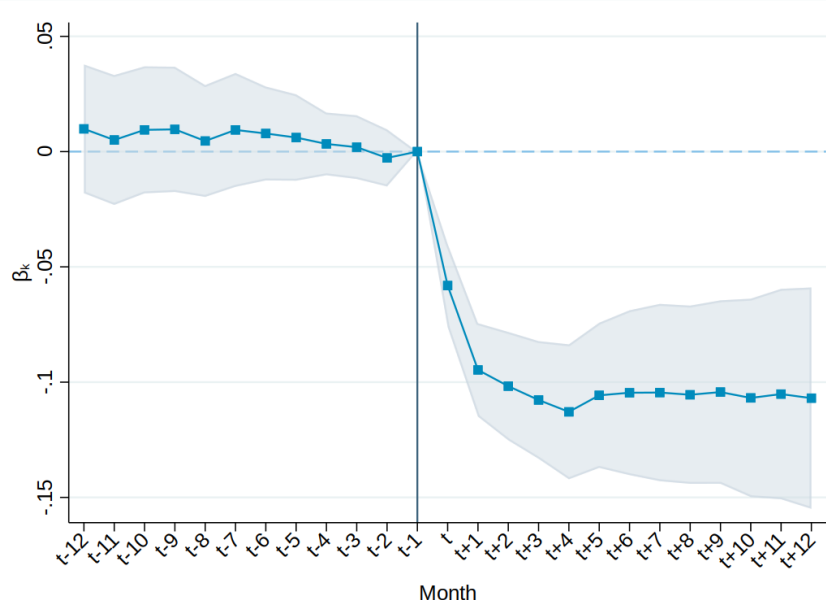


Question: Does QE lower firms' cost of capital via the portfolio rebalancing channel? If so, by how much?

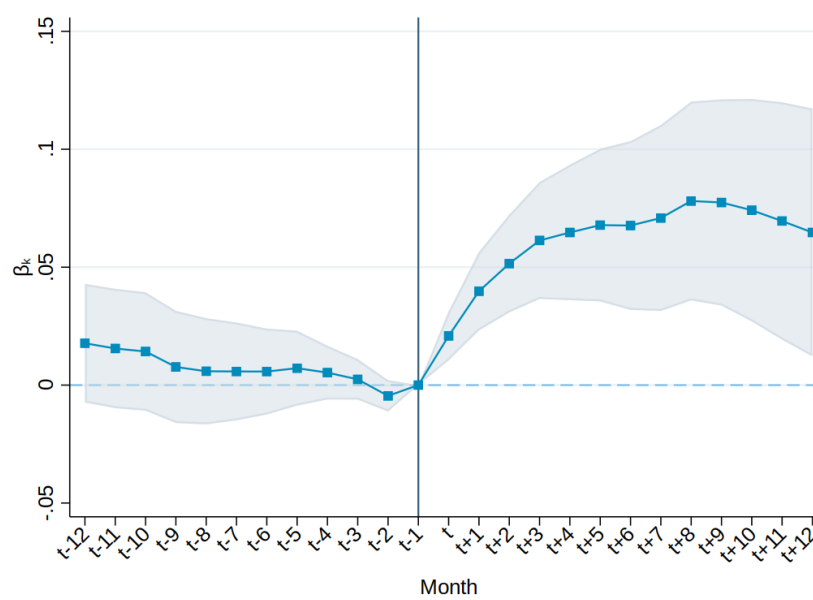
## Empirical Strategy

- Construct a novel QE shock that captures unexpected QE purchases of individual gov. bonds
- Combine security-level QE shock with portfolio holdings data for mutual funds
- Test the effect of experiencing a greater QE shock on a funds' rebalancing
  - Fund-level shock:  $QEShock_{f,t} = \sum_i w_{i,f,t-1} \times QEShock_{i,t}$
- Test the effect of rebalancing on corporate bond yields, issuance, and firm outcomes
  - Issuer-level shock:  $QEShock_{i,t} = \sum_{f \in F} \frac{Holdings_{f,i,t-1}}{AmountOutstanding_{i,t-1}} \times QEShock_{f,t}$
- Extend Vayanos-Vila model and calibrate using reduced form moments to obtain aggregate effect on yields

## Investors Rebalance out of Government Bonds and into Corporate Bonds



Effect on Rebalancing in Treasuries the Fed Buys

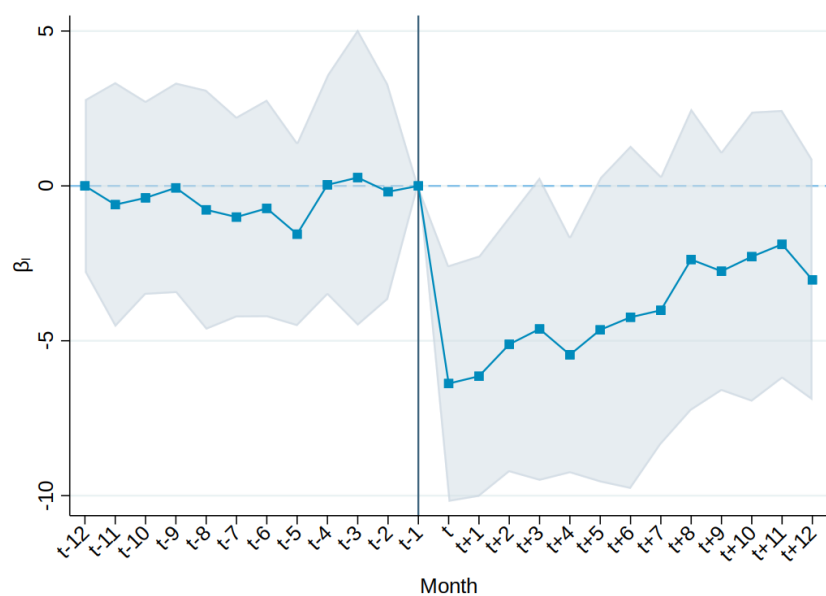


Effect on Rebalancing in Corporate Bonds

$$\Delta Holdings_{f,t-1 \rightarrow t+\tau}^A = \sum_{\ell=-12}^{12} \beta_{\ell} QEShock_{f,t+\ell} + \gamma_{\ell} + \lambda_f + \lambda_t + \epsilon_{f,t,\tau}$$

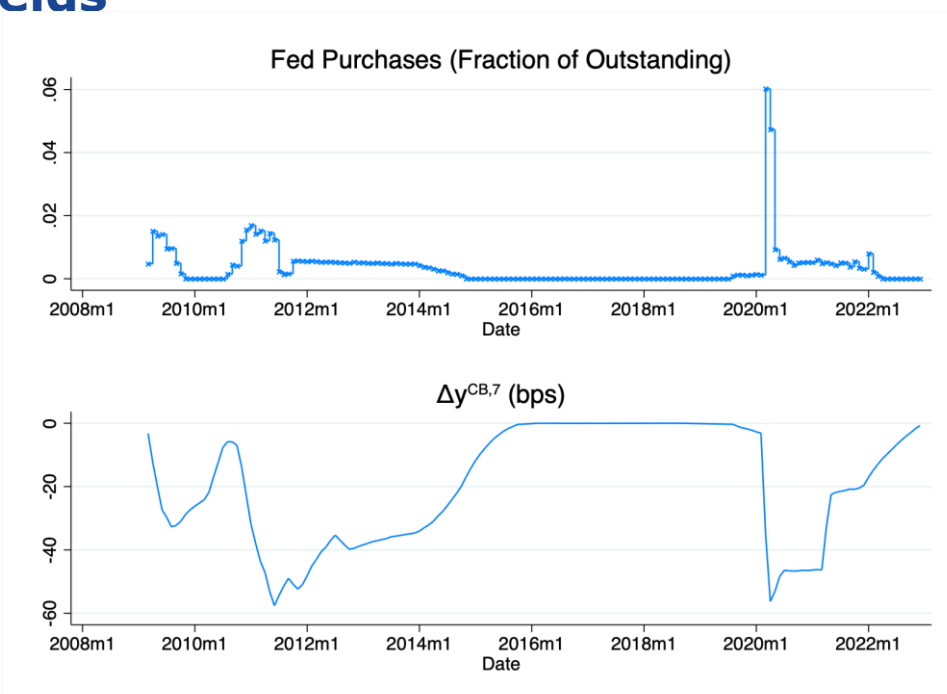
- Mutual funds rebalance ~60% of Treasury sale proceeds into corporate bonds
- More into corporate bonds of issuers they already own and of similar maturities to Fed-bought Treasuries

## Rebalancing Lowers Corporate Bond Yields



Effect of Rebalancing on Yields of Issuers

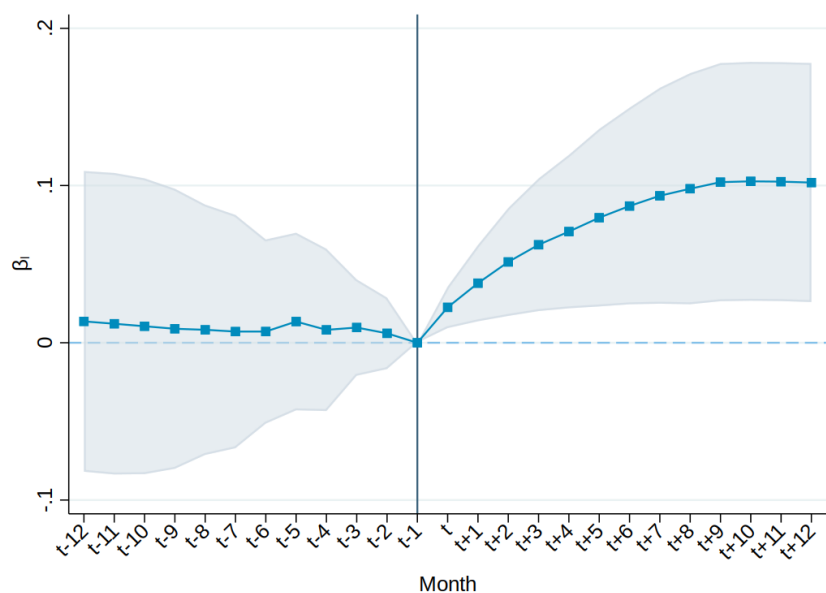
$$\Delta y_{b,t-1 \rightarrow t+\tau} = \sum_{\ell=-12}^{12} \beta_{\ell} QEShock_{i(b),t+\ell} + \lambda_{\ell} + \lambda_b + \lambda_t + \epsilon_{b,t,\tau}$$



Aggregate Effect of Channel on all Corporate Yields

- \$100bn of Treasury QE lowers corporate bond yields by 8bps on impact

## Firms Issue More Corporate Bonds and Invest More



Effect of Rebalancing on New Issuance

$$Issuance_{i,t-1 \rightarrow t+\tau} = \sum_{\ell=-12}^{12} \beta_{\ell} QEShock_{i,t+\ell} + \lambda_{\ell} + \lambda_i + \lambda_t + \epsilon_{i,t,\tau}$$

	(1) CAPX	(2) CAPX & R&D	(3) Cash	(4) Cash & ST Inv.
$QEShock \times 1\{\tau = 4\}$	0.0383*** (0.012)	0.0405*** (0.013)	0.0508** (0.019)	0.0693** (0.027)
$R^2$	0.337	0.162	0.301	0.332
$N$	185,122	185,122	185,122	185,122

Effect of Rebalancing on Firm Outcomes

$$y_{i,t-1 \rightarrow t+\tau} = \sum_{\ell=-4}^4 \beta_{\ell} QEShock_{i,t+\ell} + \lambda_{\ell} + \lambda_i + \lambda_t + \epsilon_{i,t,\tau}$$

- Firms facing greater rebalancing demand issue more bonds at lower yields
- Firms use the funds raised to increase their cash buffers (~2/3) and their investment (~1/3)