

Discussion of
**Trade Credit and Transmission of Unconventional
Monetary Policy**

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Paper Overview

1. Research question: Did the ECB's Corporate Sector Purchase Program increase trade credit and lead to real effects?
2. Methodology: Difference-in-differences estimator comparing eligible firms (and their customers) to ineligible firms
3. Main result: Eligible firms increased trade credit to customers \Rightarrow real effects among customers (asset growth, investment)

My discussion

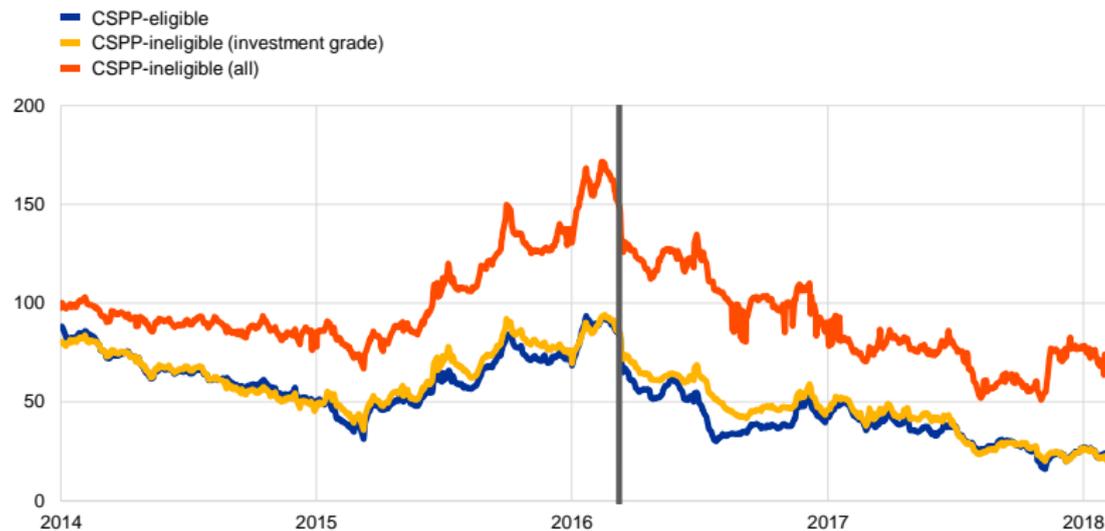
1. Very interesting paper

- Results are intuitive, clear, and well executed
- Contribution to the growing literature on asset purchase programs

2. Main Comments

- Background on ECB's corporate bond purchase program
- Identification strategy
- Implications for bond purchase programs

Why did the ECB purchase corporate bonds?



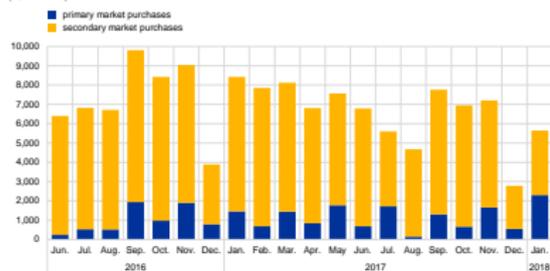
1. Low growth and low inflation in 2015/16 \Rightarrow ECB announced large program (lower interest rates, large asset purchases, TLTRO II)
2. Bond purchase program targeted at increase in bond credit spread
3. Motivation different from other bond purchase programs (e.g., Fed MBS purchases in 2009, COVID bond purchases in 2020)

What did the ECB purchase?

Monthly Purchases

Primary and secondary market net purchases under the CSPP

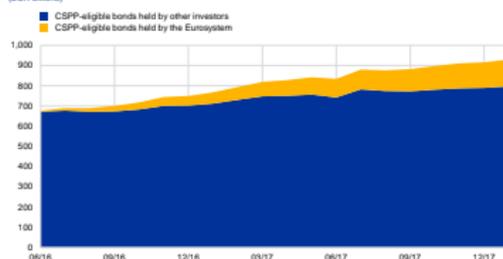
(EUR millions)



ECB Holdings

CSPP-eligible universe and share held by the Eurosystem

(EUR billions)



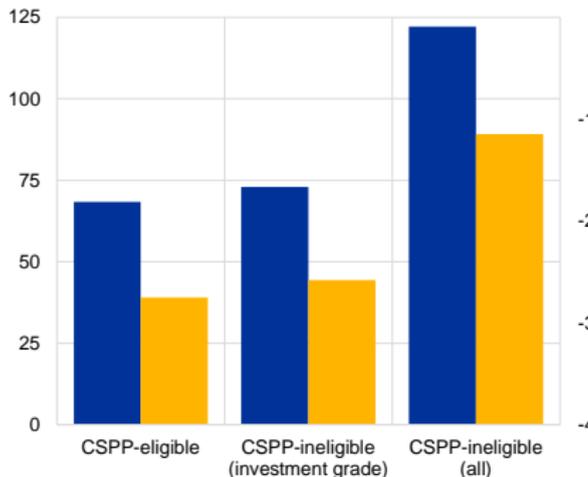
1. Large purchases of investment-grade Eurozone corporate debt
2. ECB built up significant holdings of eligible debt (tilt towards core countries)
3. Firms already eligible for other programs (e.g., LTRO haircut subsidies)

Did ECB purchases reduce bond yields?

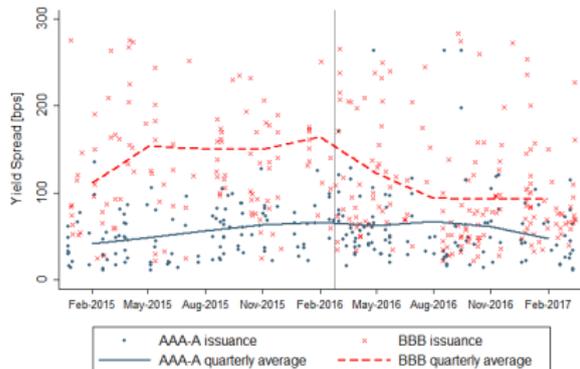
Before-after bond yields

(basis points)

- before CSPP announcement
- after CSPP announcement

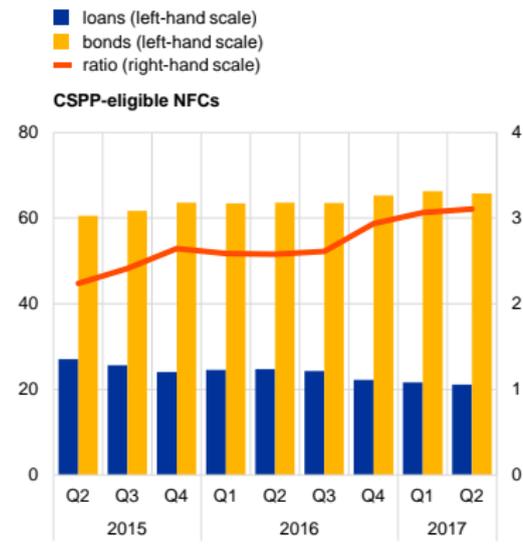


Yield at issuance



1. Drop in bond yields at CSPP announcement
2. Effect larger for firms at the cutoff, i.e., BBB-rated firms (Grosse-Rueschkamp, Steffen, and Streit, 2020)

Did ECB purchases cause bank-bond substitution?



1. Eligible firms substituted from bank borrowing to bond market (Becker and Ivashina, 2014)
2. Banks increased lending to smaller firms (Grosse-Rueschkamp, Steffen, and Streit, 2020; Arce, Mayordomo, and Gimeno, 2021; Ertan, Kleymenova, Tuijn, 2020)

This paper

1. Did large firms provide credit to their customers?
 - Complementary to lending by the banking sector
 - Trade credit significant source of credit in Europe

2. Empirical challenges
 - Data: Requires data on firm balance sheets and supplier-customer relationships
 - Identification: Program targeted largest firms in Europe

Measuring firm relationships

1. Construct supplier-customer from Factset

- Filter all eligible firms that are listed as supplier (e.g., **Deutsche Telekom**)
- Report customer: e.g., Deutsche Telekom reports **Netflix** as customer
- Report supplier: e.g., **Drillisch AG** reports Deutsche Telekom as supplier

2. Potential limitations

- Does not capture smaller firms \Rightarrow underestimate effect
- Relationships are not (necessarily) symmetric (Netflix vs. Drillisch AG)

Empirical strategy

1. Compare eligible and ineligible firms:

$$y_{it} = \alpha_i + \gamma_t + \beta \text{Eligible}_{it} + \delta \text{Controls}_{it} + \varepsilon_{it}$$

y_{it} = Accounts Receivable/Sales or Accounts Payable/Sales

Eligible_{it} = Firm or supplier is eligible for ECB program

Controls_{it} = Firm characteristics

2. Identification assumption: Eligible firms are on similar trends as non-eligible firms
3. Tests: Controls, matching, firm size-time controls, subsamples

Results: Accounts Receivable

$$y_{it} = \alpha_i + \gamma_t + \beta \text{Eligible}_{it} + \delta \text{Controls}_{it} + \varepsilon_{it}$$

	(1)	(2)
<i>Eligible × Post</i>	0.103*** (0.032)	
<i>Eligible × 2014</i>		-0.007 (0.022)
<i>Eligible × 2015</i>		0.046 (0.043)
<i>Eligible × 2016</i>		0.077** (0.038)
<i>Eligible × 2017</i>		0.156** (0.062)

⇒ Eligible firms increase accounts receivable by 10.3% after CSPP
(average accounts receivable is 30.1%)

Results: Accounts Payable

$$y_{it} = \alpha_i + \gamma_t + \beta \text{Eligible}_{it} + \delta \text{Controls}_{it} + \varepsilon_{it}$$

	(1)	(2)
<i>Has Eligible Supplier</i> × <i>Post</i>	0.048*** (0.017)	
<i>Has Eligible Supplier</i> × 2014		0.030 (0.023)
<i>Has Eligible Supplier</i> × 2015		0.039 (0.027)
<i>Has Eligible Supplier</i> × 2016		0.034** (0.016)
<i>Has Eligible Supplier</i> × 2017		0.110*** (0.034)

⇒ Customers of eligible firms increase accounts payable by 4.8% after CSPP (average accounts payable is 22.8%)

Results: Real Effects

$$y_{it} = \alpha_i + \gamma_t + \beta \text{Eligible}_{it} + \delta \text{Controls}_{it} + \varepsilon_{it}$$

	Asset Growth	CAPEX	Δ Inventories	Δ Accounts Receivable
	(1)	(2)	(3)	(4)
<i>Has Eligible Supplier</i> \times <i>Post</i>	0.025* (0.015)	0.005* (0.003)	0.004** (0.002)	0.011** (0.005)

\Rightarrow Customers of eligible firms increase assets by 2.5% and investment by 0.5%

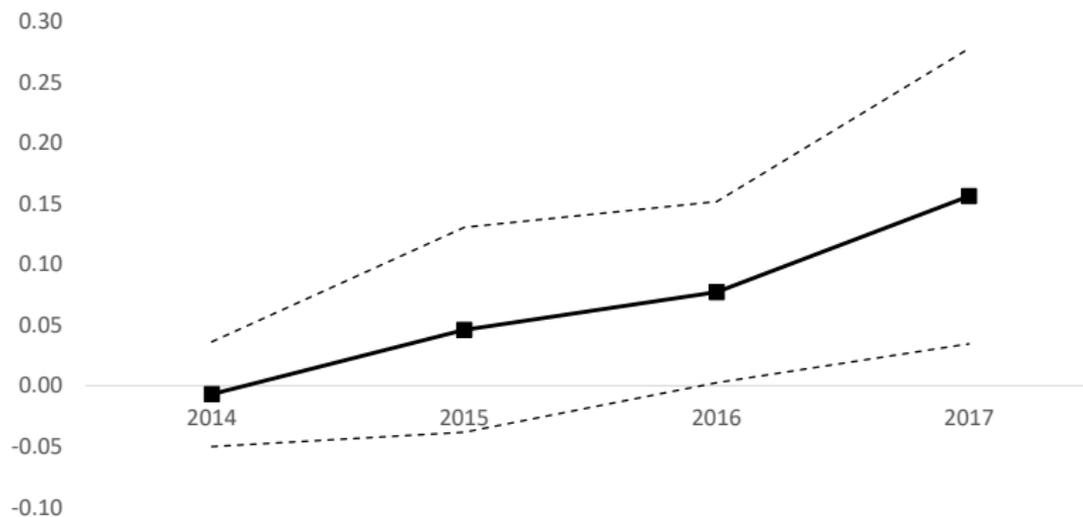
Empirical identification: Parallel trends?

$$y_{it} = \alpha_i + \gamma_t + \beta \text{Eligible}_{it} + \delta \text{Controls}_{it} + \varepsilon_{it}$$

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- Main concern: Eligible firms are very large and on a different trend (only 0.03% of firms are eligible)
- Paper: “We find that treatment and control groups follow parallel trends in the pre-treatment period and that the increase in accounts receivable occurs after the CSPP” (page 12)

Plotting “Eligible \times Year” coefficients



1. Not clear whether there is parallel trend before CSPP
2. Extend year-by-year analysis (matching sample? firm size-time controls?)

How shall we evaluate bond purchase programs?

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 - Drop in credit spreads for eligible firms
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 - Very large firms appear mostly unconstrained
 - Results suggests constraints in European banking sector
 - Could (should?) constraints be addressed directly

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 - Drop in credit spreads for eligible firms
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2. But what is the underlying market failure?
 - Very large firms appear mostly unconstrained
 - Results suggests constraints in European banking sector
 - Could (should?) constraints be addressed directly
3. What are the costs of central bank credit allocation?
 - *“Central bankers confronting the problem of the interest-rate lower bound ... alter general financial conditions in a way that should affect all parts of the economy relatively uniformly.. [and] avoid allocation of credit.”* (Woodford, 2012)
 - Central bank credit to (only) large firms impacts credit allocation in the economy, degree of competition, and corporate governance

Conclusion

1. Corporate bond purchase program increases trade credit to customers of eligible firms
2. Contributes to the growing literature on the impact of asset purchase programs
3. Main Comments
 - More background on ECB programs
 - More work on parallel trend assumption
 - How to evaluate bond purchase programs