Can unconventional monetary policy contribute to climate action?

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Motivation

- Scaling up private investment is essential to address the climate crisis
- Some central banks are willing to steer monetary conditions in favour of green finance
- The ECB is leading the way: in its recent ***monetary policy strategy review***, it has pledged to "green" its corporate asset purchases
- Through the CSPP, the ECB is an anchor investor in the corporate bond market:
  - Large programme (EUR 333 billion as of Q1 2022)
  - Affects bond prices (De Santis et al., 2019) and issuance (Todorov, 2020)
  - Current implementation, based on "Market neutrality", leaves portfolio skewed towards high emission sectors (Papoutsi et al., 2021)
  - Tilting unconventional monetary policy can serve to redirect capital towards green projects
- This paper studies whether the announcement has:
  1. affected the cost of bond financing for green projects/firms
  2. increased the adoption of green bonds

Timeline

January 25, 2021
- President Christine Lagarde calls for a greater role for sustainable investment and innovation.
- Creation of ECB Climate Change Centre.

June 14, 2021
- Executive Board Member Isabel Schnabel hints at "market efficiency" as guiding principle for greening monetary policy

July 6, 2021
- European Commission proposal for a "European Union Green Bond Standard", aiming at becoming an international standard for the issuance of green bonds.

July 8, 2021
- This is our **event of interest**. Unveiling of the ***monetary policy strategy review***, featuring a roadmap to adapt the corporate bond purchase scheme to include climate considerations.
  - General tone was strong, but no implementation details were given.
  - Unexpected that so much importance would be given to climate issues.
  - Last strategy review had taken place in 2003, so the event was an important one.
  - New symmetric 2% inflation target also announced on that day.

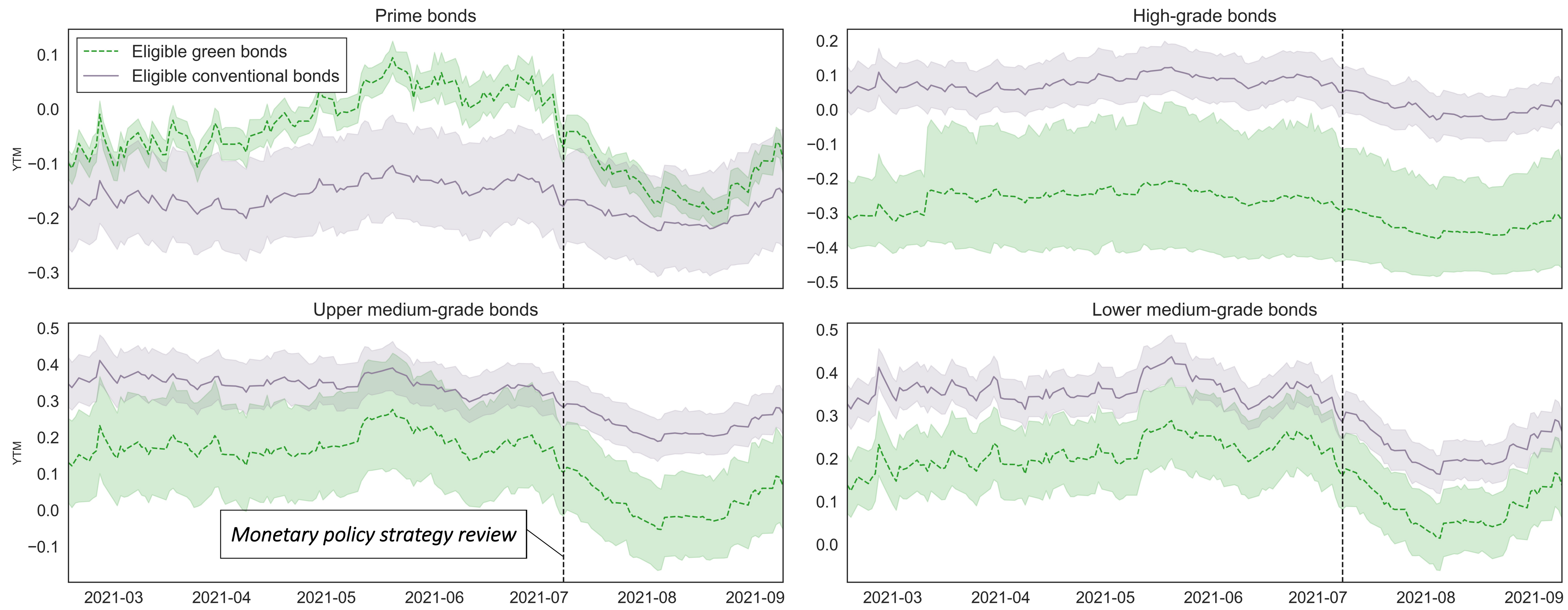
Empirical design

- In order to isolate the "green" component: compare ECB-eligible green bonds with ECB-eligible conventional bonds in terms of change in Yield-to-Maturity (YTM) following the announcement:

$$YTM_{it} = \beta(\textit{Eligible green bond} \times \textit{Post})_{it} + \varepsilon_{it}$$

- Focus on (Euro) Stoxx 600 firms
- Include some bond, week, sector-month and country-month fixed effects

Green bonds' reaction to the CSPP "greening" announcement



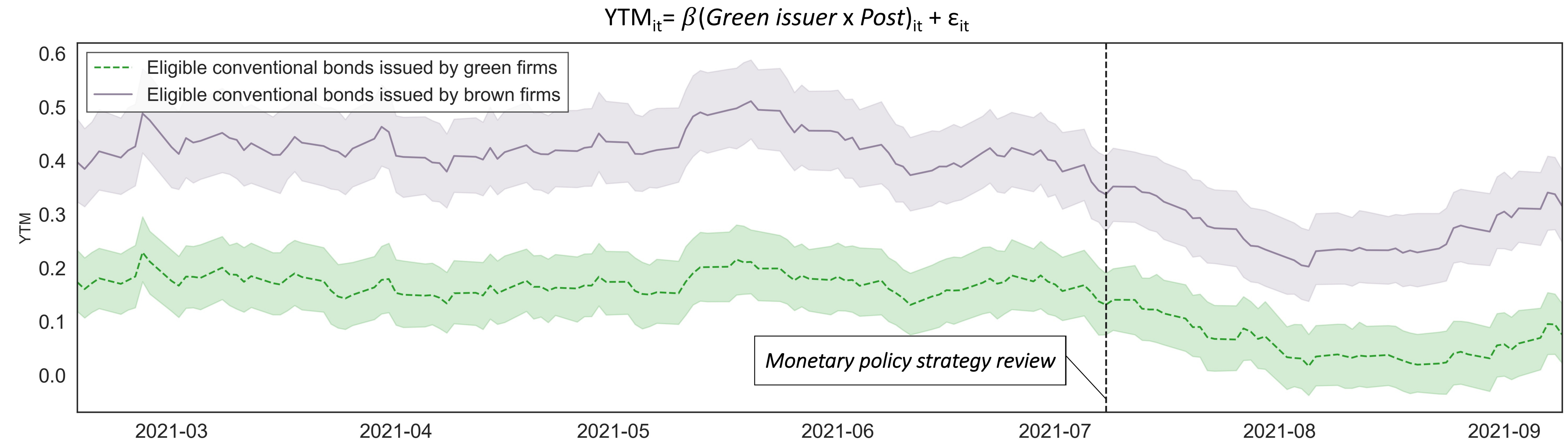
YTMs of ECB-eligible green bonds experienced a significant decrease relative to comparable conventional bonds

- Estimated magnitude varies across rating categories - AAA bonds reacting the strongest with a 6 bp decrease
- Amounts to 25% of the decrease measured at CSPP creation (Bremus et al., 2021)
- Still economically sizeable given: (i) the low interest rate environment, (ii) green bonds trade at lower YTM

Conventional bonds' reaction to the CSPP "greening" announcement

- Compare ECB-eligible conventional bonds issued by green firms, defined as bottom 25% of direct emissions, to those issued by brown firms, defined as top 25% of emissions:

$$YTM_{it} = \beta(\textit{Green issuer} \times \textit{Post})_{it} + \varepsilon_{it}$$



On the contrary, YTMs of ECB-eligible conventional bonds issued by green firms did not react relative to those issued by brown firms

- Shows that this announcement did not shift investors' view on the credibility given to ECB abandoning "market neutrality"

Did lower YTM lead to higher incentives for firms to issue green bonds?

- Focus on the country of incorporation of the issuer, and compare issuers incorporated inside the eurozone to those outside the eurozone
- Use issuer-week total amount of green bonds issued (in USD billions) as the dependent variable

	All green bonds		Investment-grade		Non-investment-grade	
	(1)	(2)	(3)	(4)	(5)	(6)
Treated x *Post strategy review*	0.627***	0.210***	0.488***	0.134	0.622***	0.355***
	(4.85)	(3.20)	(3.41)	(1.43)	(3.59)	(3.08)
Post strategy review	-0.253***	-0.094*	-0.227*	-0.086	-0.260*	-0.156
	(-2.71)	(-1.73)	(-1.90)	(-1.03)	(-1.91)	(-1.62)
Time trend	0.029***	0.009***	0.030***	0.010***	0.025***	0.011***
	(6.90)	(3.36)	(6.43)	(2.86)	(4.95)	(2.77)
Carbon Price	0.03	0.001	0.001	-0.000	0.009**	0.006*
	(1.50)	(0.56)	(0.39)	(-0.19)	(2.63)	(1.89)
Lagged amount issued		0.810***		0.693***		0.415***
		(14.41)		(6.51)		(5.260
Observations (Issuer-Week)	21216	21216	16932	16932	9588	9588
Adj. R-squared	0.877	0.949	0.887	0.943	0.738	0.811

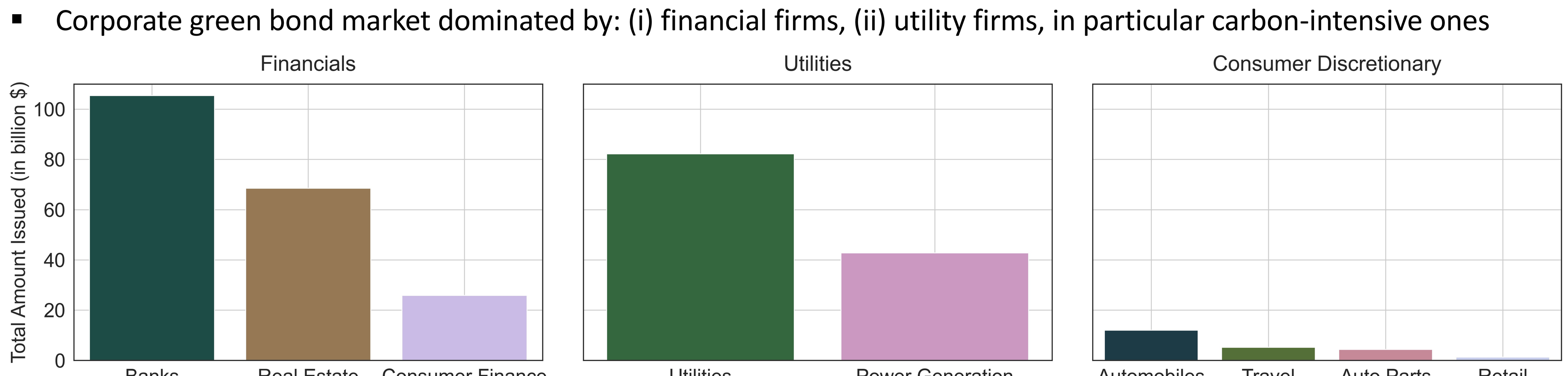
Note: * p<0.10, ** p<0.05, *** p<0.01. Week, issuer, sector-by-month and country-by-month fixed effects are included. Standard errors are clustered at the issuer level. T-statistics in parentheses.

Firms incorporated in the eurozone reacted by tapping the green bond market relatively more than issuers in outside jurisdictions

- The effect is mainly driven by seasoned issuers, except in the non-investment-grade segment

What defines a green bond? Who are the corporate green bond issuers?

- Green bonds are "Use-of-proceeds" bonds, with proceeds earmarked for projects with environmental benefits
- Important tool of the transition financing: signal issuer's commitment towards energy transition and leads to reduction in carbon emissions (Flammer, 2021)
- Corporate green bond market dominated by: (i) financial firms, (ii) utility firms, in particular carbon-intensive ones



Policy implications

- Unconventional monetary policy targeting green financing instruments is an effective tool to reduce the carbon footprint of corporate bond markets, as it:
  - reduces the cost of green bond financing
  - leads to an increase in green bond issuance
- Implementation will be key to encouraging new entrants into the green bond market
- Calibration in the implementation phase will also be important to balance:
  - the reduction in the cost of green bond financing, which primarily concerns (for now) financial and carbon-intensive firms
  - the wedge in the cost of conventional bond financing between low and high carbon-intensive firms