Collateral Easing and Asset Scarcity: How Money Markets Benefit from Low-Quality Collateral

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Motivation

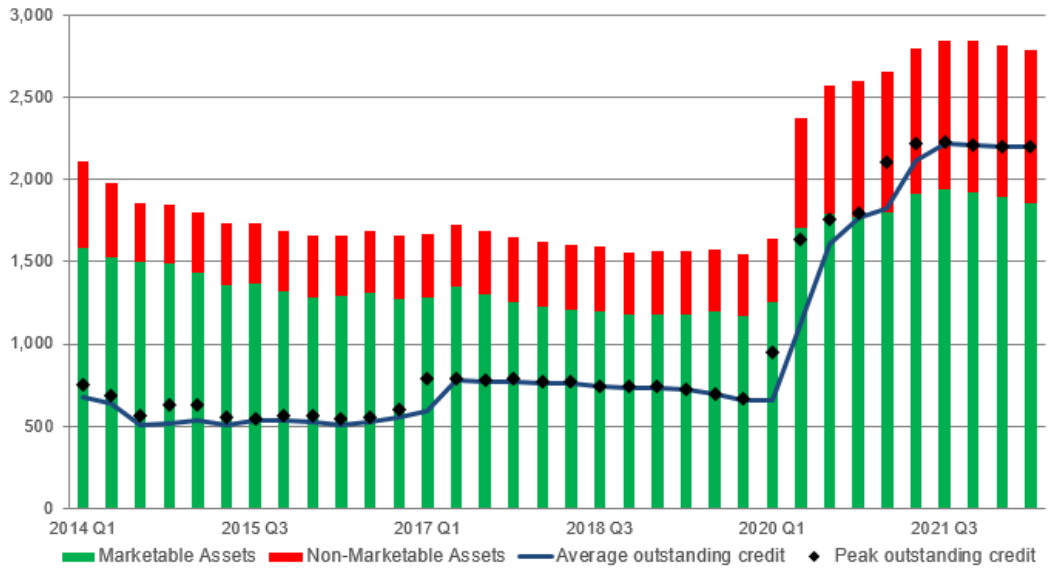
- Collateral frameworks relate to a key task of central banks: lend to banks against good collateral at an appropriate price (Bagehot, 1873)
- No consensus about optimal design of collateral policies & substantial differences in practice
- Traditionally, collateral policies have been viewed as a rather passive ingredient of monetary policy
- Recent work highlights a more proactive role of collateral policies for monetary policy (Mésonnier et al., 2022; Pelizzon et al., 2024)

This Paper

- **Research Question:** Can a shift towards a broader collateral framework promote (repo) market functioning?
- **Theory:** Lending against high-quality assets protects against losses, but can adversely affect liquidity creation in markets as good collateral gets locked up with the CB (Choi et al., 2021)
- **Contribution:** Empirical evidence on this channel is limited
- **Identification:** Collateral easing package of April 7, 2020 as a natural experiment

The ECB's Collateral Framework

1. Broad set of counterparties for lending operations (e.g. relative to US)
2. Single collateral set applicable to all operations (pooled collateral)
3. Acceptance of a wide range of assets and issuer types



Empirical Strategy

- Exploit **ACC framework extension** of April 7, 2020
  - Loans not fulfilling eligibility criteria of general collateral framework
    1. Loans with government guarantee
    2. Loans with lower credit quality

- **Treatment group:** Banks that pledge non-marketable and marketable collateral ex ante

- **Control group:** Banks that only pledge marketable collateral ex ante
  - Institutional restriction: banks' business model
  - Costs and hurdles: documentation requirement, legal restrictions/uncertainty, less automated procedures, lack of standardisation, limited rating availability

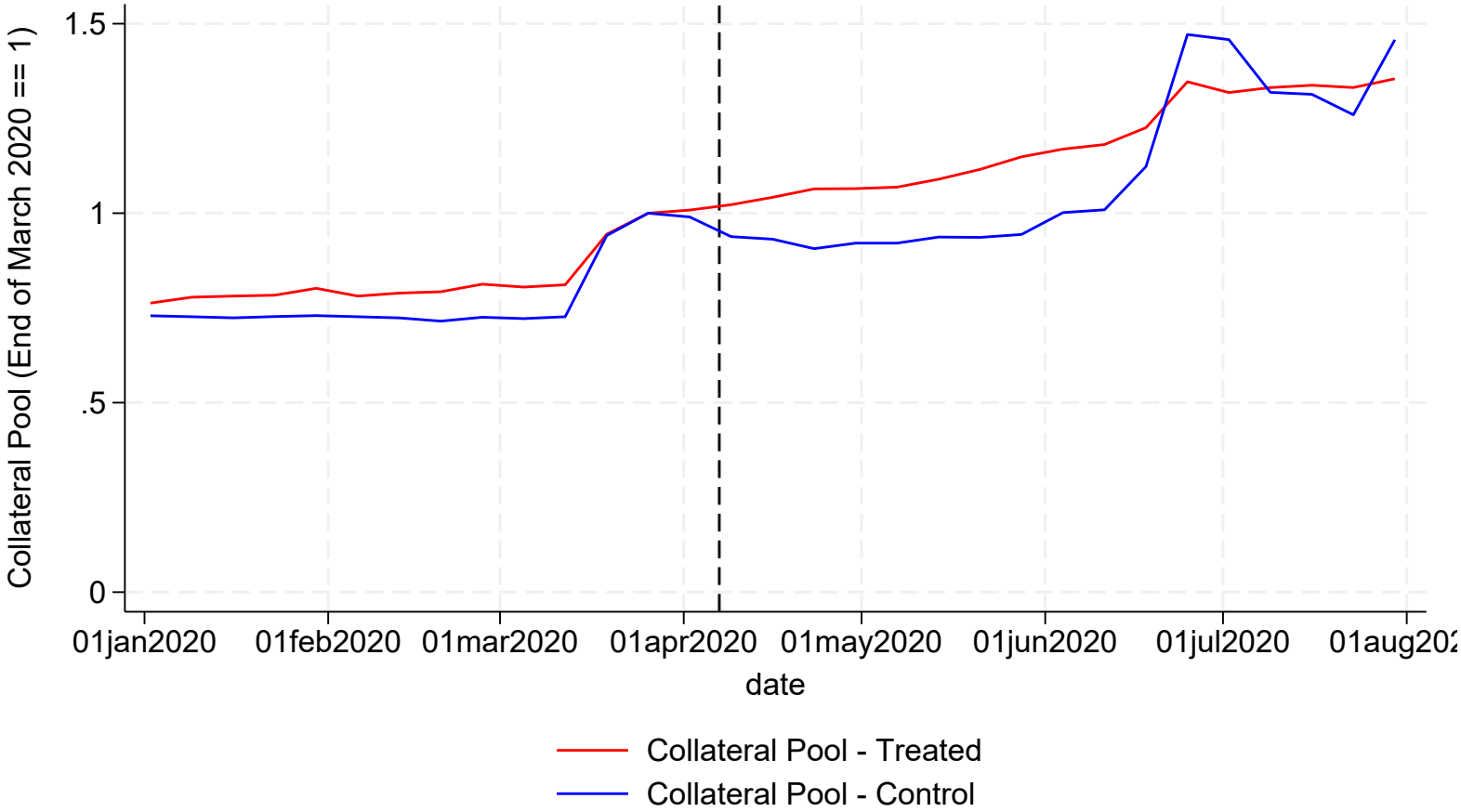
Data

- Use of Collateral Database **(UCDB)**
  - collateral pool of banks in Eurosystem, bank-bond-level, weekly
  - also: credit claims (RCC vs. ACC), bank-level, weekly
  - sample of 129 euro-area based banks
- Money Market Statistical Reporting **(MMSR)**
  - transaction-level information on repos
  - centrally cleared, one-day maturity, collateralized by government bonds
  - sample of 37 euro-area based large banks
- Other data:
  - **IBSI**: A + L items; **SHS-G**: Securities-register
- **Main sample**: January 1, 2020 until July 31, 2020

Part 1: Collateral Pledging Behaviour

Stylized Fact I

Collateral Pool - Aggregates



Stylized Fact II

Collateral Pool - Asset Classes

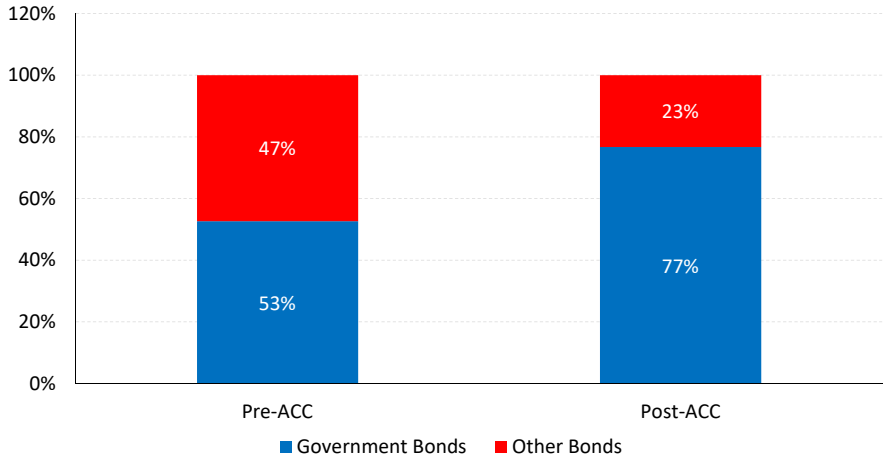


Figure 1: Control Group

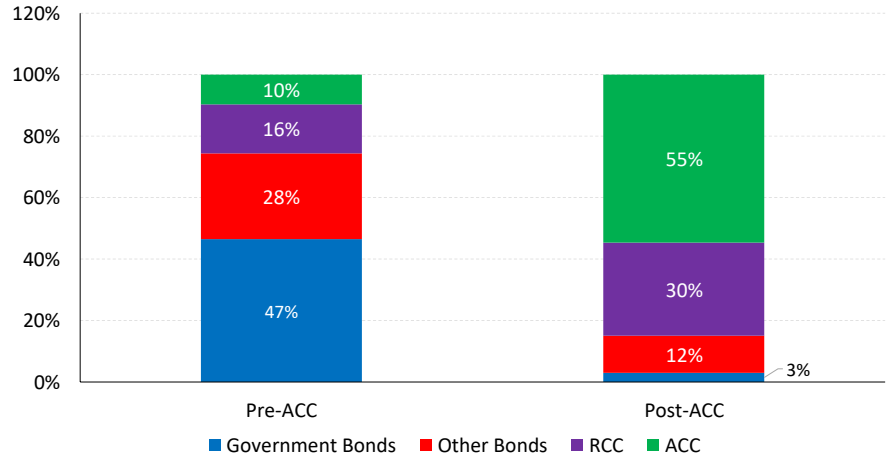
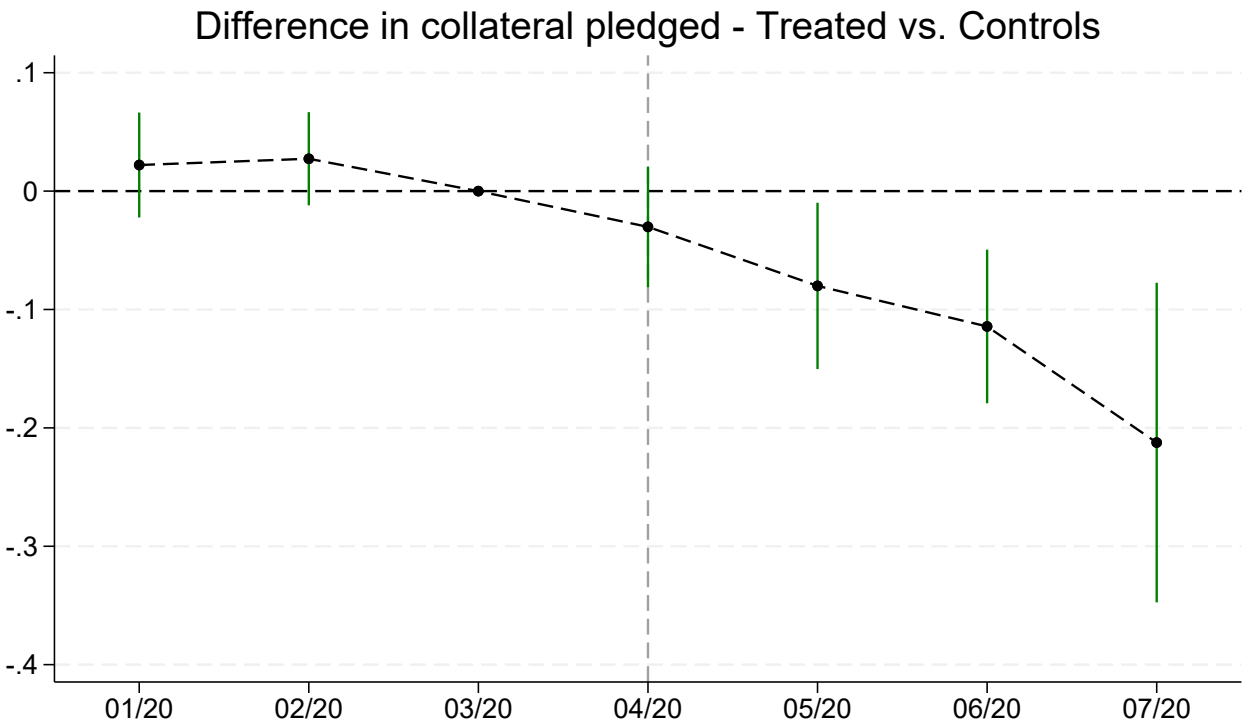


Figure 2: Treatment Group

- Treated banks mobilize less gov. bonds for central bank liquidity
- Economic magnitudes: EUR 100 bn of government bonds would have been encumbered w/o treatment (assumption: no change in composition of pool)

Collateral Pledged - DiD Regression

$$CollPledged_{b,s,t} = \beta_0 \times Post_t \times Treated_b \times (Government_s) + \mathbf{X}'_{b,t}\gamma + \alpha_{b,s} + \alpha_{s,t} + \varepsilon_{b,s,t}$$



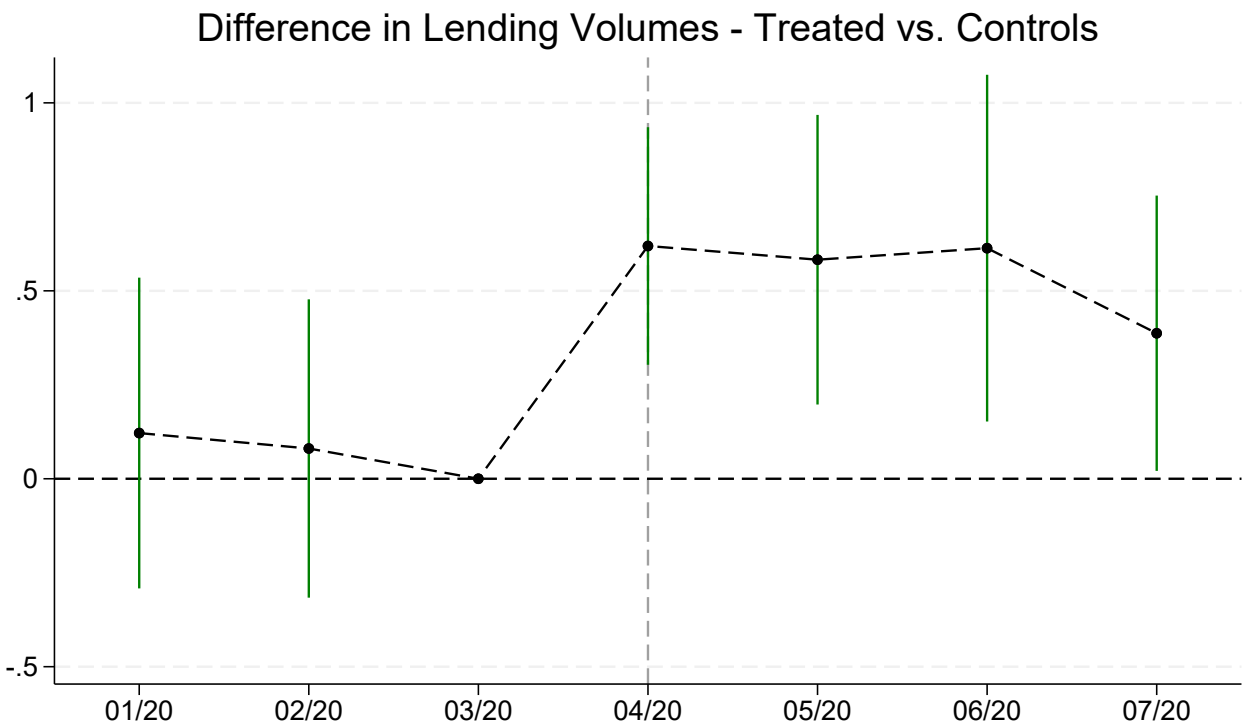
Sample: Government Bonds

Details

Part 2: Repo Market Activity

Repo Market Activity - DiD Regression

$$Y_{b,s,t} = \beta_0 \times Post_t \times Treated_b + \mathbf{X}'_{b,t}\gamma + \alpha_{b,s} + \alpha_{s,t} + \varepsilon_{b,s,t}$$



Details

Repo Market Activity - Heterogeneities

Dependent variable:	Net Lending scaled by Amount Outstanding			
	Overcollateralization	Collateral Constraint	Credit Claim Share	Portfolio Risk
	(1)	(2)	(3)	(4)
Post x Treated-High	0.6031***	0.3765*	0.5104***	0.6770***
	(3.04)	(1.72)	(3.16)	(2.81)
Post x Treated-Low	0.3578*	0.5694***	0.4967**	0.2605
	(1.76)	(2.91)	(2.28)	(1.35)
Adj. R2	.4225	.4224	.4223	.4227
Obs	132,810	132,810	132,810	132,810
Difference	0.2453*	-0.1929	0.0137	0.4165**
	(1.98)	(-1.51)	(0.11)	(2.30)
Bank-level Controls	Yes	Yes	Yes	Yes
Bond x Time FE	Yes	Yes	Yes	Yes
Bank x Bond FE	Yes	Yes	Yes	Yes
Clustered S.E.	Bank, Time	Bank, Time	Bank, Time	Bank, Time

Repo Market Activity - Where do the bonds come from?

Dependent variable:	Net Lending	Gross Lending	Gross Borrowing
	(1)	(2)	(3)
Post x Treated x $D_{Pledged}$	0.3466	0.0877	-0.2589
	(0.76)	(0.23)	(-1.27)
Post x Treated x D_{Held}	0.8946***	0.8500***	-0.0446
	(6.10)	(7.74)	(-0.43)
Adj. R2	.4218	.4559	.4718
Obs	132,810	132,810	132,810
Bond x Time FE	Yes	Yes	Yes
Bank x Bond FE	Yes	Yes	Yes

Repo Market Activity - Bond Level

Dependent variable:	Net Lending	Gross Lending	Gross Borrowing	Reuse Amount	Specialness	Rate Dispersion
	(1)	(2)	(3)	(4)	(5)	(6)
Post x $Frac_{Pledged}$	0.0114	0.0029	-0.0085	0.0058	-0.0013	0.0149
	(1.54)	(0.38)	(-1.35)	(1.02)	(-0.43)	(1.10)
Post x $Frac_{Held}$	0.0117	0.0376***	0.0259*	0.0236**	-0.0159**	-0.0413**
	(0.74)	(2.78)	(2.04)	(2.26)	(-2.55)	(-2.43)
Adj. R2	.4996	.6285	.6374	.6334	.5426	.4400
Obs	11,128	11,128	11,128	11,128	11,128	11,128
Bank x Bond FE	Yes	Yes	Yes	Yes	Yes	Yes
Issuer x Maturity x Time FE	Yes	Yes	Yes	Yes	Yes	Yes

Concluding Remarks

- **Summary:**

  Broader collateral framework improves repo market functioning as additional bond supply reduces asset scarcity

- **Policy Implications:**

  1. Lower asset scarcity implies smoother monetary policy transmission (Nguyen et al., 2023; Guimaraes et al., 2023)
     $\Rightarrow$ tradeoff between limiting operational losses and fostering repo market functioning depends on CB preferences
  2. With sizable B/S and floor-based monetary policy frameworks ($\Rightarrow$ OFR), collateral policies can be a useful tool to promote monetary policy implementation (Brandao-Marques & Ratnovski, 2024)
  3. Our paper provides insights about potential effects and trade-offs of pre-positioning of collateral (e.g. King, 2016) w.r.t. repo market functioning

APPENDIX

Collateral Pledged - DiD Regression

$$CollPledged_{b,s,t} = \beta_0 \times Post_t \times Treated_b \times (Government_s) + \mathbf{X}'_{b,t}\gamma + \alpha_{b,s} + \alpha_{s,t} + \varepsilon_{b,s,t}$$

Dependent variable:	Nominal Value Pledged scaled by Amount Outstanding			
	(1)	(2)	(3)	(4)
	All bonds	Other bonds	Government	All bonds
Post x Treated	0.0090	0.0665	-0.1188**	0.0674
	(0.15)	(1.85)	(-2.49)	(0.84)
Post x Treated x Government				-0.1992**
				(-2.22)
Adj. R2	.8673	.8633	.8585	.8673
Obs	682,937	500,902	182,035	682,937
Bond x Time FE	Yes	Yes	Yes	Yes
Bank x Bond FE	Yes	Yes	Yes	Yes

Back

Repo Activity - Bank x Bond Level

$$Y_{b,s,t} = \beta_0 \times Post_t \times Treated_b + \mathbf{X}'_{b,t}\gamma + \alpha_{b,s} + \alpha_{s,t} + \varepsilon_{b,s,t}$$

Dependent variable:	Net Lending	Gross Lending	Gross Borrowing	Specialness
	(1)	(2)	(3)	(4)
Post x Treated	0.5015**	0.4107***	-0.0908	-0.2306
	(2.64)	(3.03)	(-0.66)	(-0.94)
Adj. R2	.4223	.4562	.472	.7205
Obs	132,810	132,810	132,810	85,904
Bond x Time FE	Yes	Yes	Yes	Yes
Bank x Bond FE	Yes	Yes	Yes	Yes

Back