Do Firms Cater to Corporate QE? Evidence from the Bank of Japan's Corporate Bond Purchases during the COVID-19 Pandemic

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Summary

- In response to the COVID-19 crisis, the Federal Reserve and the Bank of Japan (BOJ) conducted massive purchases of corporate bonds maturing in 5 years or less.
- In Japan, but not in the U.S., some firms catered to this demand shock by shortening the maturity of new bond issues.
- BOJ became a much more significant buyer in the target corporate bond segment than did Fed.
- As the debt maturity can affect the rollover risk and investment, this paper has important policy implications.

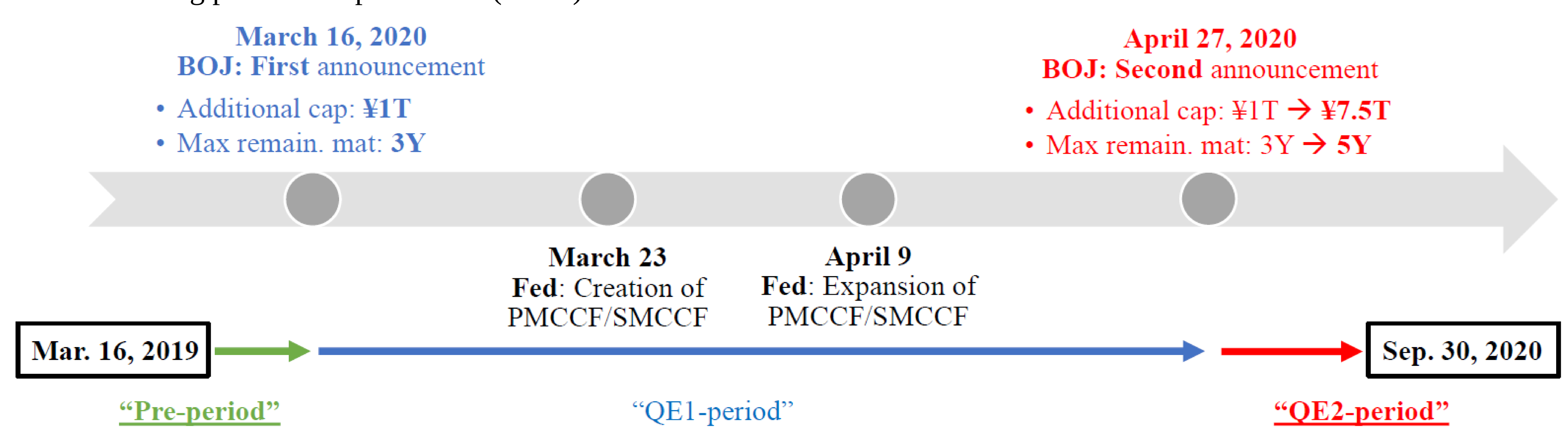
Motivation

- Many central banks launched large-scale purchases of corporate bonds (i.e., corporate QE) during the COVID-19 crisis.
- One interesting feature: **Maturity eligibility criteria**
  - ECB: < 31Y (primary & secondary)
  - Fed-Treasury: ≤ **4Y** (PMCCF) & ≤ **5Y** (SMCCF)
  - BOJ: ≤ **3Y** → ≤ **5Y** (secondary only)
- Research Question: **Do firms cater to corporate QE?**
- Theoretical framework: **Greenwood et al. (2010)**
  - Existence of "preferred-habitat" investors
  - Limited arbitrage capital

  → Violation of the expectations hypothesis
- Prediction: **Sharp changes around the threshold**
  - Firms face a trade-off:
    Catering to high demand vs. Deviating from target mat.
  - Greater deviation from target mat. → Higher cost
  - Therefore, if the firm's target maturity is…
    - ≤ 5Y, target mat. selected
    - slightly exceeding 5Y, **mat. shortened to 5Y (or 3Y)**
    - largely exceeding 5Y, target mat. selected
- US data suggest: **No**
  - Halling et al. (2020):
    Maturities increased during COVID-19 crisis.
  - Boyarchenko et al. (2020):
    "[T]he existence of the facility does not distort issuance decisions, with issuers not changing maturity of issued bonds to target SMCCF eligibility."

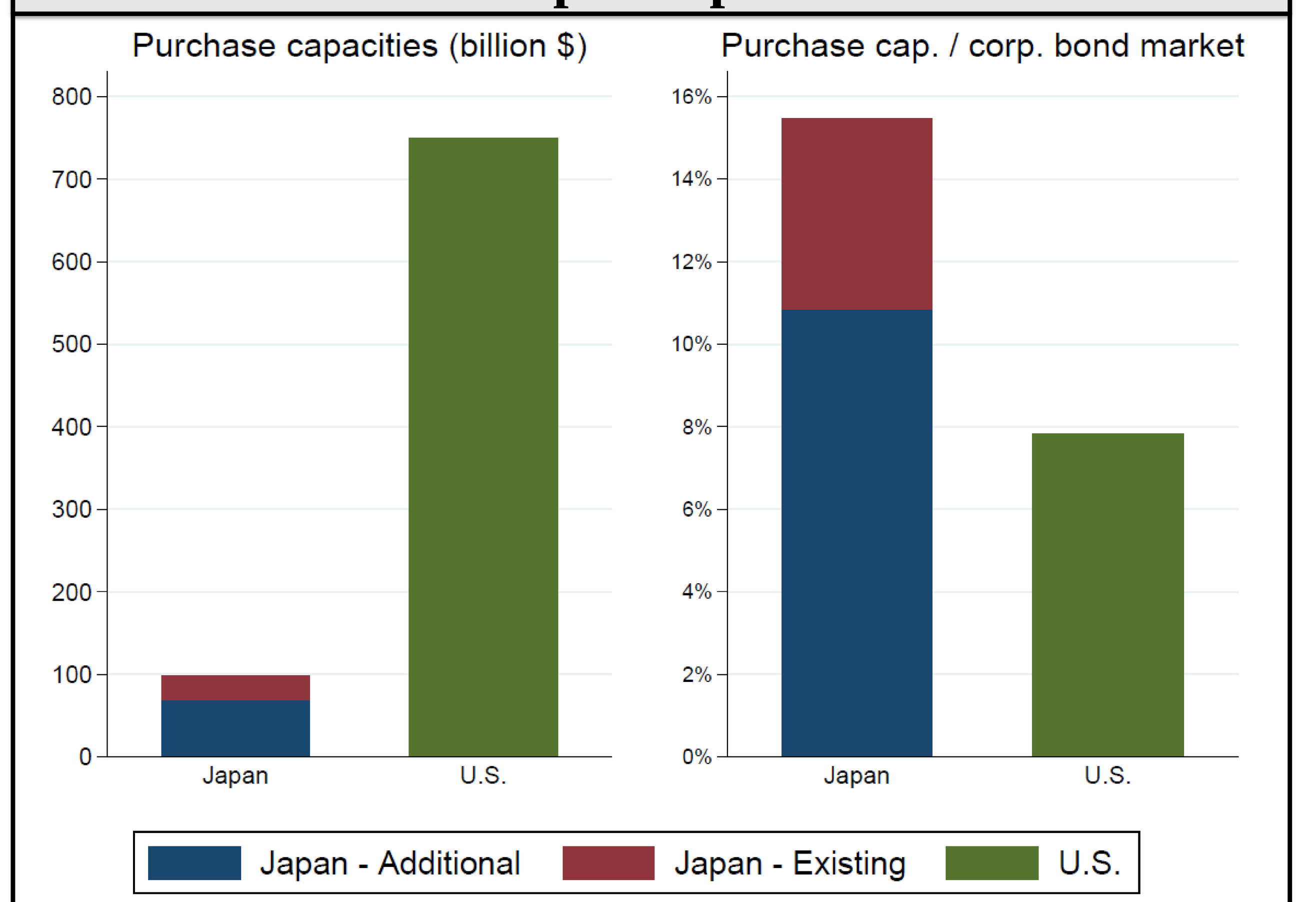
Timeline

- BOJ had existing purchase cap of **¥3.2T (2013-)**



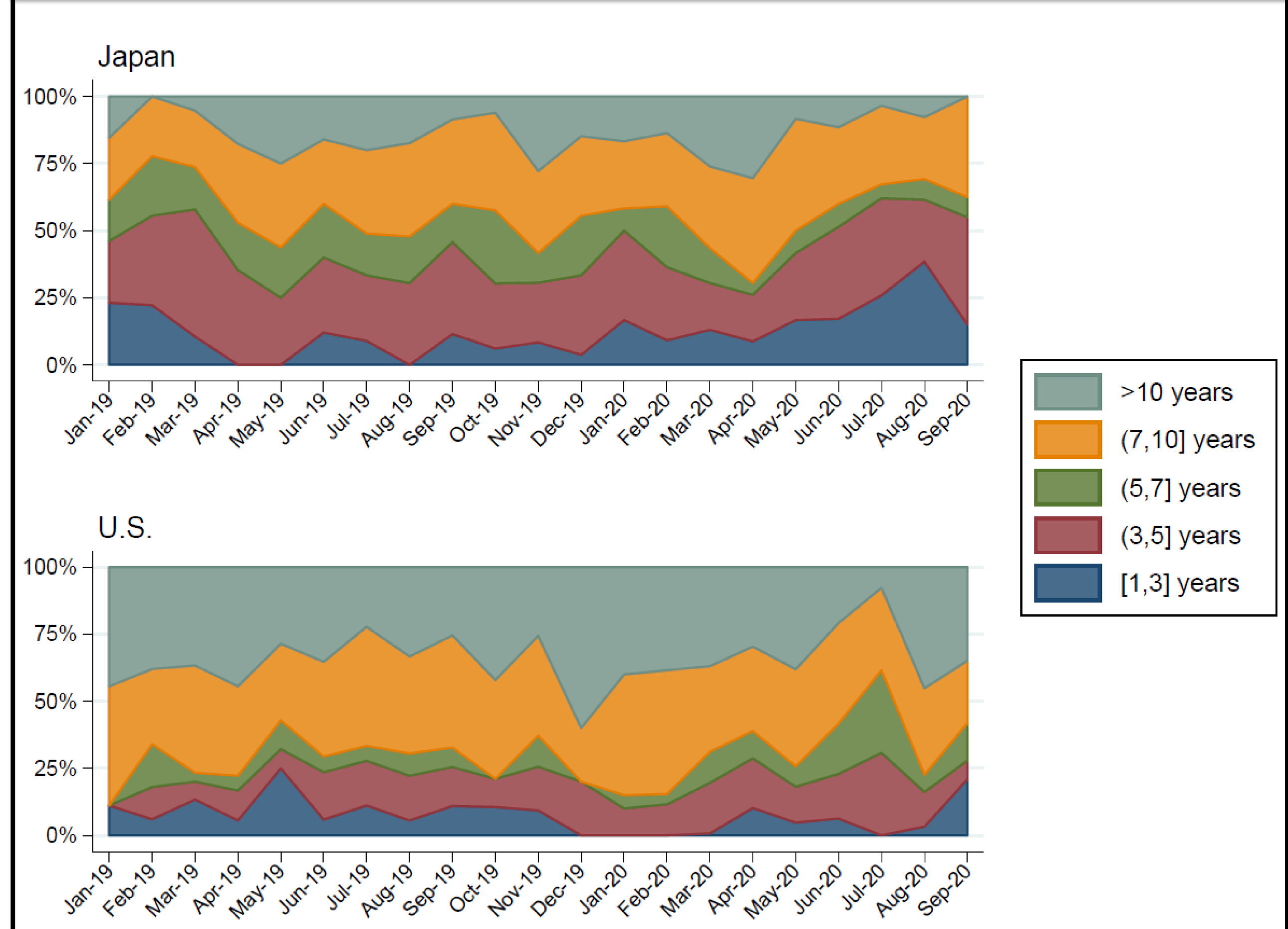
- My main focus is on comparing "pre-period" and "QE2-period" because…
  - BOJ's April 27 announcement was highly anticipated
  - QE1 period: 21/23 bonds (91.3%) issued on April 16 or after

Purchase Caps - Japan vs. the US



- Fed **7.8%** vs. BOJ **15.5%** (existing **4.6%** + additional **10.8%**)
- Fed's purchases included **bond ETFs**, but BOJ's did not.
- Fed's **actual** purchase amount was much smaller.

Maturities of New Bond Issues - Japan vs. the US



- In Japan, **[1,5]Y** (= **[1,3]Y** + **(3,5]Y)**) **increased** and **(5,7]Y decreased**.

Maturities of New Bond Issues in Japan – Multinomial Logit Analysis

- Maturity bins: [1,3], (3,5], (5,7], (7,10] & >10 Y
- Explanatory vars: QE1 dummy, QE2 dummy, issuer controls + industry FEs
- Separation → Penalized ML of Kosmidis and Firth (2011)
- **Average marginal effects (AMEs):**

	[1,3] years	(3,5] years	(5,7] years	(7,10] years	>10 years
QE1	0.013	-0.042	-0.109*	0.139	-0.002
	(0.061)	(0.097)	(0.060)	(0.112)	(0.068)
QE2	0.135***	0.091**	-0.107***	0.007	-0.126***
	(0.036)	(0.046)	(0.030)	(0.046)	(0.028)

Interpretation:
From "pre-period" to "QE2-period", the probability of the mat. bin of **(5,7]Y** being chosen decreased by **10.7 percentage point** (from **17.7%** to **7.0%**).

No Clear Cross-Sectional Differences Found

- The cost of deviating from the target maturity should be lower for **financially stronger** firms.
  - Credit rating, market cap, leverage, ratio of bank debt,…
- Possible opposite effect:
  - BOJ's reverse auctions preferred higher yield bonds, i.e., bonds issued by **riskier/financially weaker** firms.

Simultaneous Issuances of Multiple-Maturity Bonds

- Remaining question: Did **individual** firms indeed cater?
- → I analyze maturity compositions of bonds issued on the same date.
- Example: SoftBank Corp.
  - 3/12/2020: **3**, **5**, **7**, and **10** Y (each raising 10 bill. ¥)
  - 7/21/2020: **3**, **5**, and **10** Y (raising 10, 70, and 20 bill. ¥)
- Compositions of multiple-mat. issues incl. [1,5]Y and ≥10Y

Maturities (years)	Pre-period	QE1 period	QE2 period	Total
5,10	18	2	15	35
5,7,10	14	0	5	19
3, 5, 10	0	1	15	16
5, 10, >10	3	1	2	6
5, >10	3	0	0	3
3, 10	2	0	0	2
3, 10, >10	0	1	1	2
3, 5, 7, 10	2	0	0	2
1.5, 3, 5, 7, 10	0	0	1	1
3, >10	1	0	0	1
3, 5, 7, 10, >10	1	0	0	1
3, 7, 10	1	0	0	1
3, 7, 10, >10	1	0	0	1
4, 10	0	0	1	1
5, 7, >10	1	0	0	1
Total	47	5	40	92

- Logit result: More skipping of (5,7]Y

Policy Implications and Contributions

- This paper is important for policymakers because firms' debt maturity choice can affect **rollover risk** and **investment →** **financial stability**.
- Related paper: Galema & Lugo (2021)
  ECB's *lax* mat. eligibility criterion → *Lengthened* maturity
- This paper can also be viewed as a test of the "gap-filling theory" of Greenwood et al. (2010).

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