

WHEN SELLING BECOMES VIRAL: DISRUPTIONS IN DEBT MARKETS IN THE COVID-19 CRISIS AND THE FED'S RESPONSE

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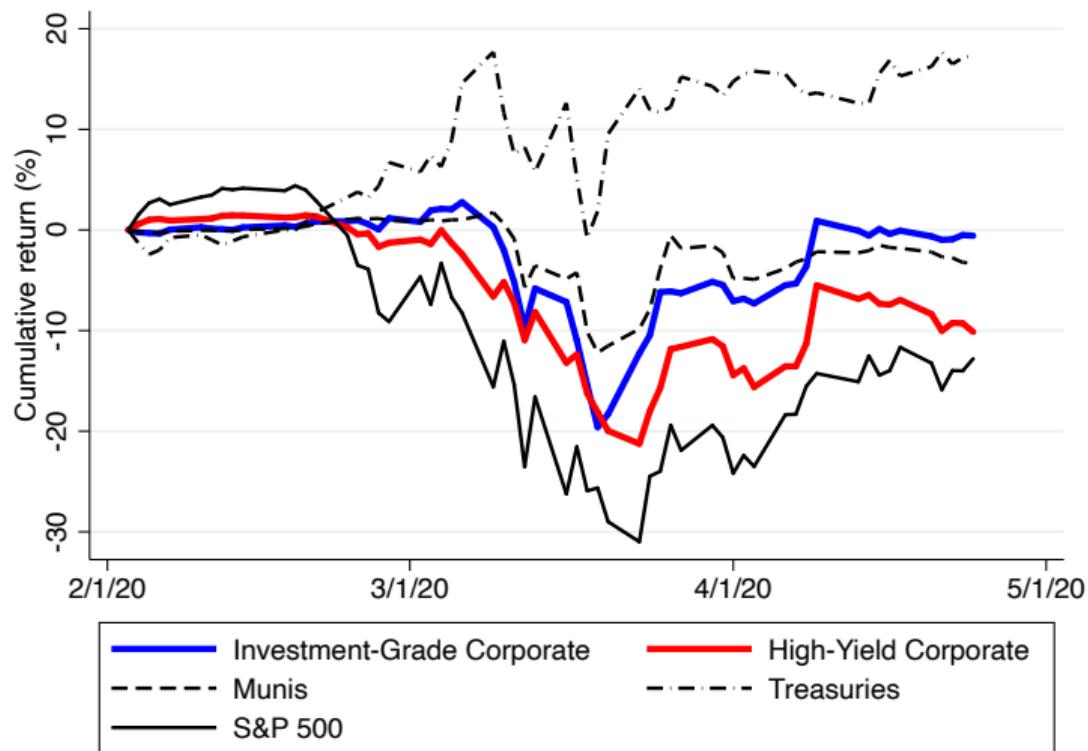
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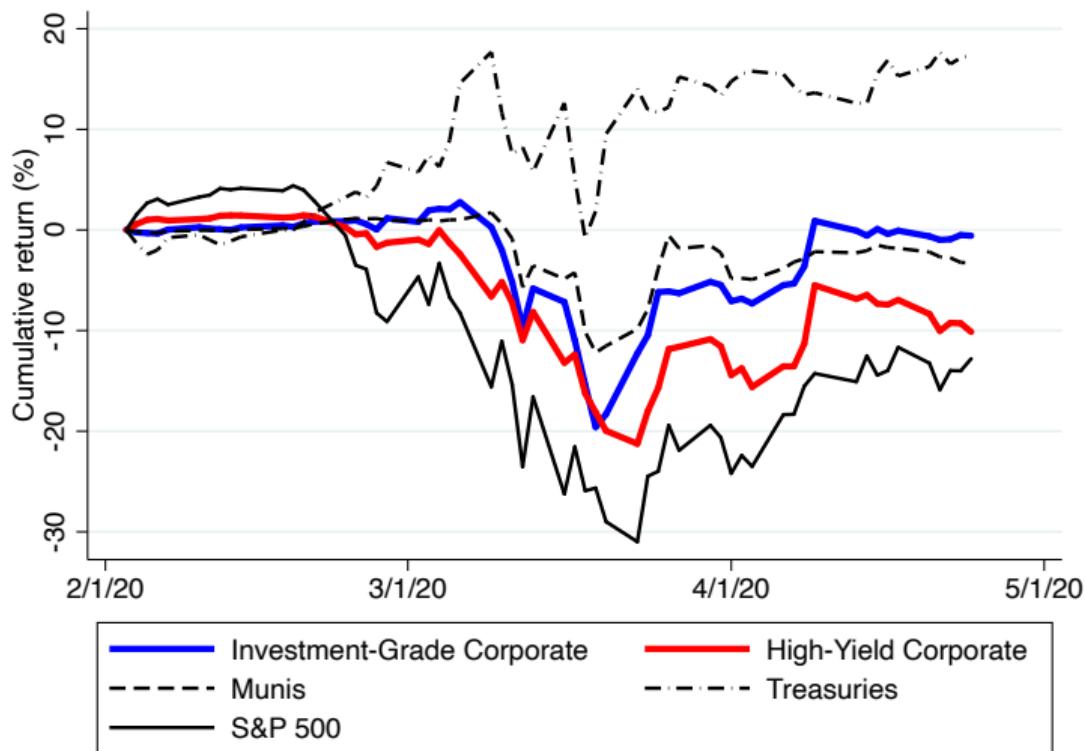
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CUMULATIVE RETURNS DURING COVID-19



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- Pre-crisis beta implies a drop for investment-grade corporate of 5% \ll 20%

THIS PAPER

Use the cross-section of debt markets to discipline interpretation of this episode

- Document pervasive dislocations in debt prices, **in particular investment-grade debt**
 - ▶ Discount on *cash-intensive trades*: bonds cheap relative to CDS
 - ▶ Discount on *safer and more liquid trades*: ETFs cheap relative to bonds
- Trace recovery back to Fed announcements of bond purchases

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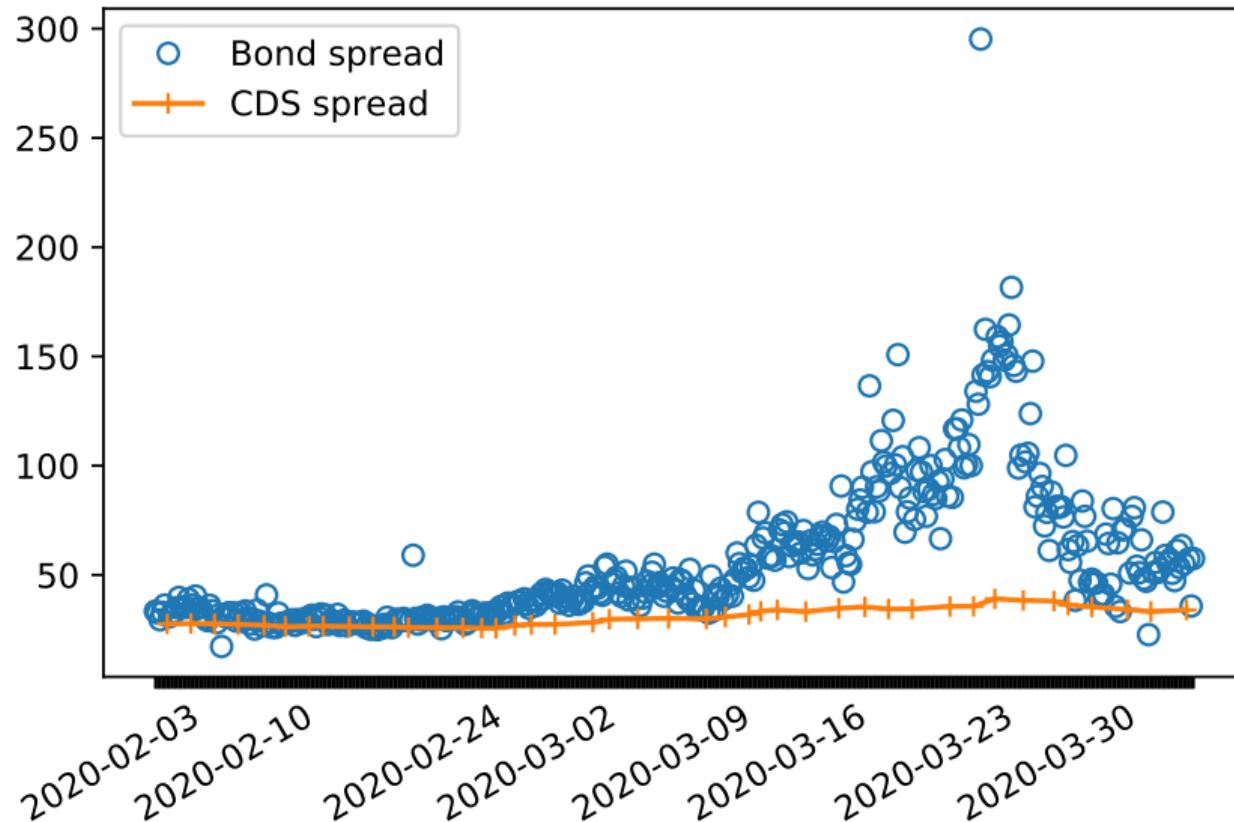
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→ Challenges frictionless explanations (cash-flow expectations or risk compensations)

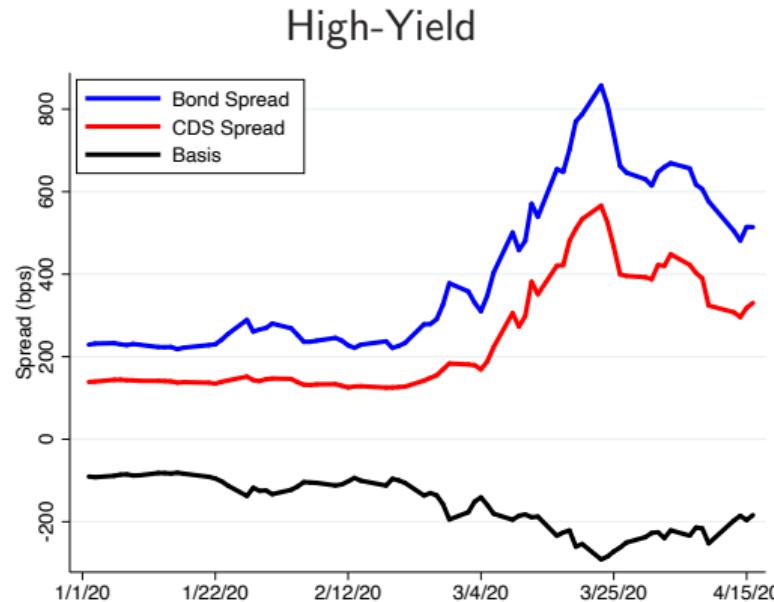
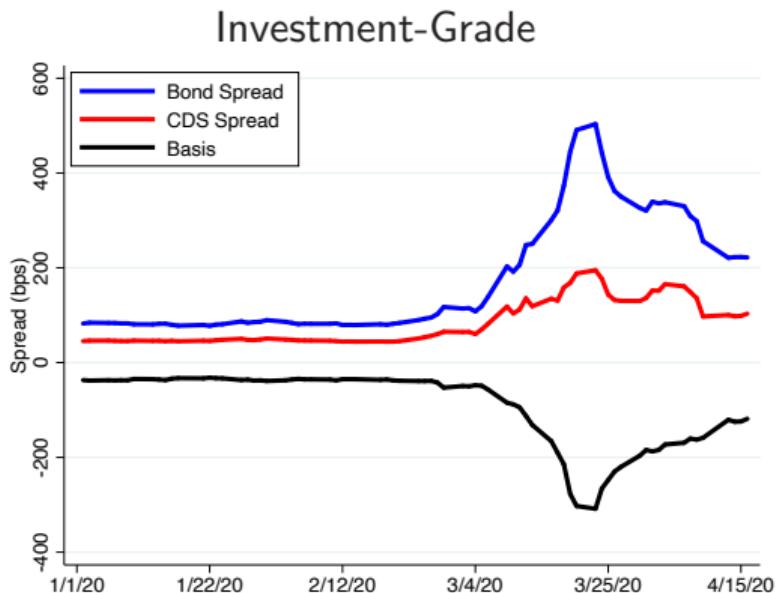
→ Challenges dealer-centric view

→ Most consistent with widespread persistent selling pressure to obtain cash ... but still a lot unanswered

AN EXAMPLE: 6-YEAR GOOGLE BOND

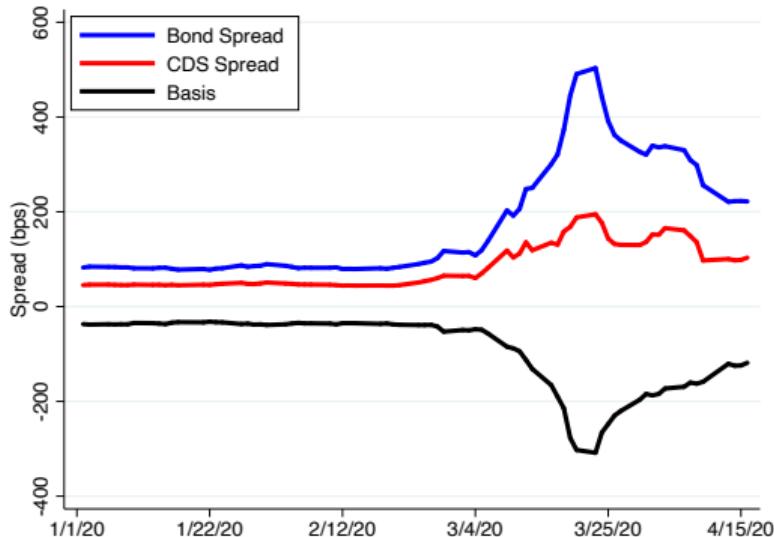


CDS-BOND BASIS

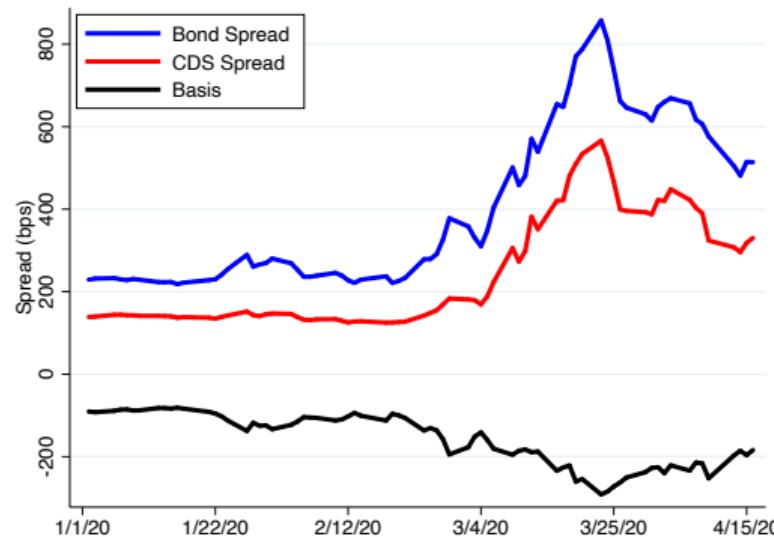


CDS-BOND BASIS

Investment-Grade

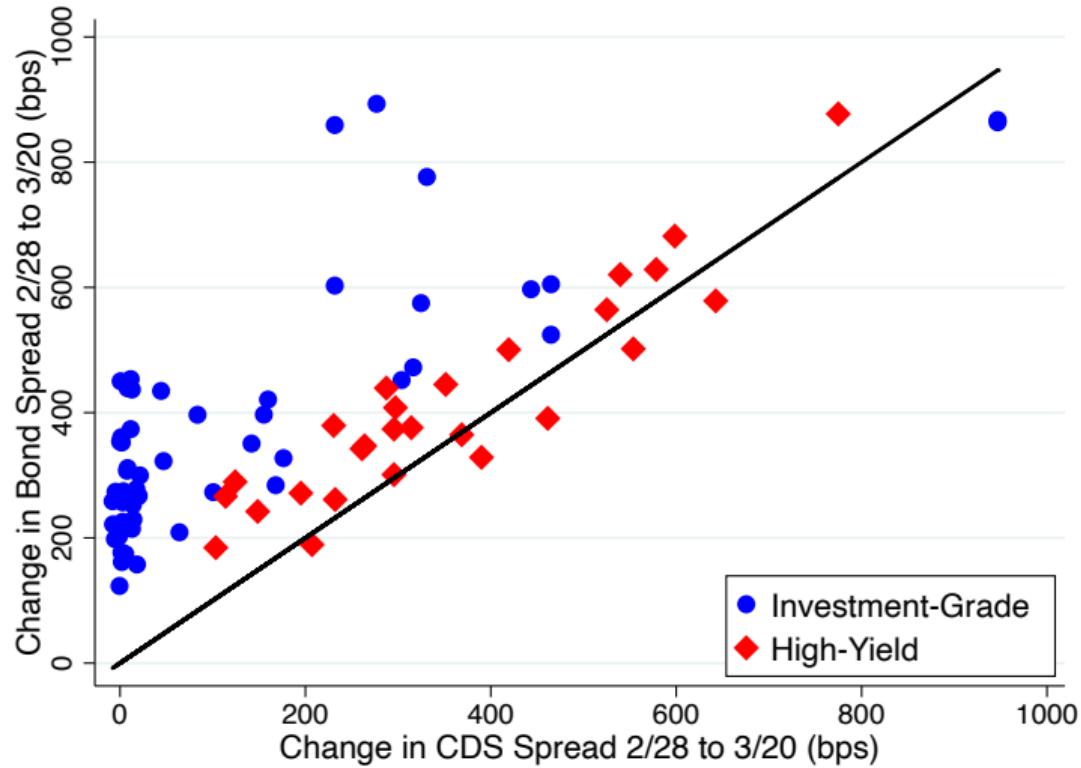


High-Yield

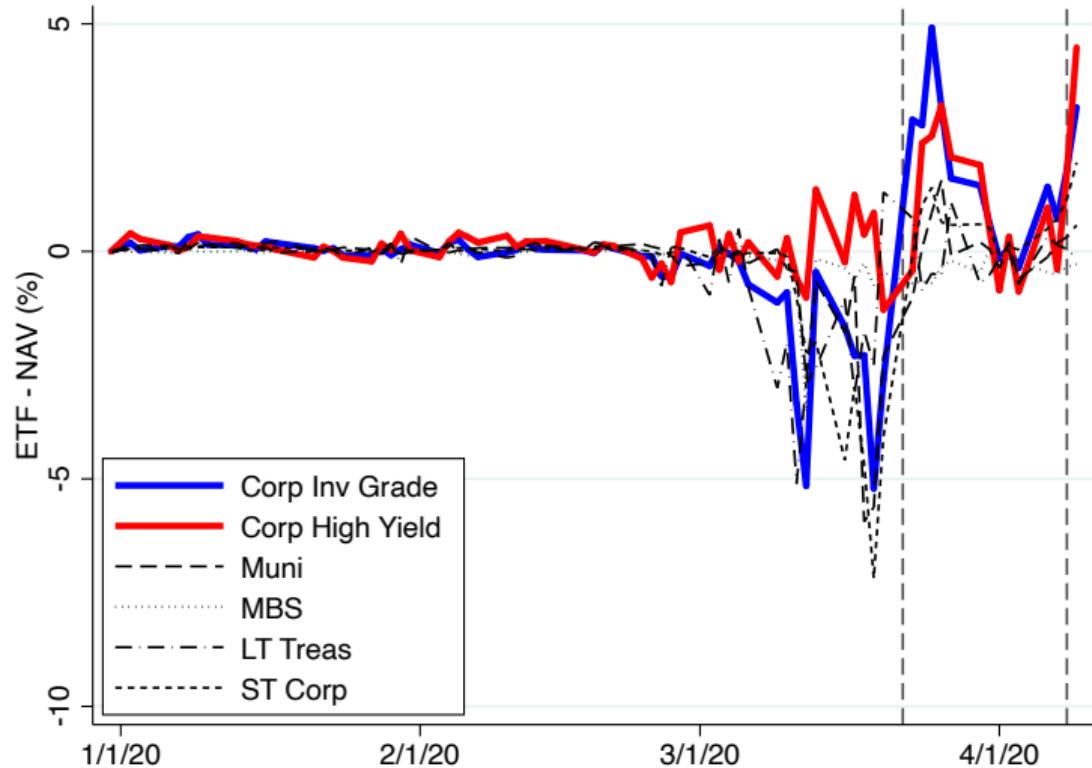


- Synthetic investment-grade (Treasury – CDS) drops by 5% \ll 20% for actual bonds

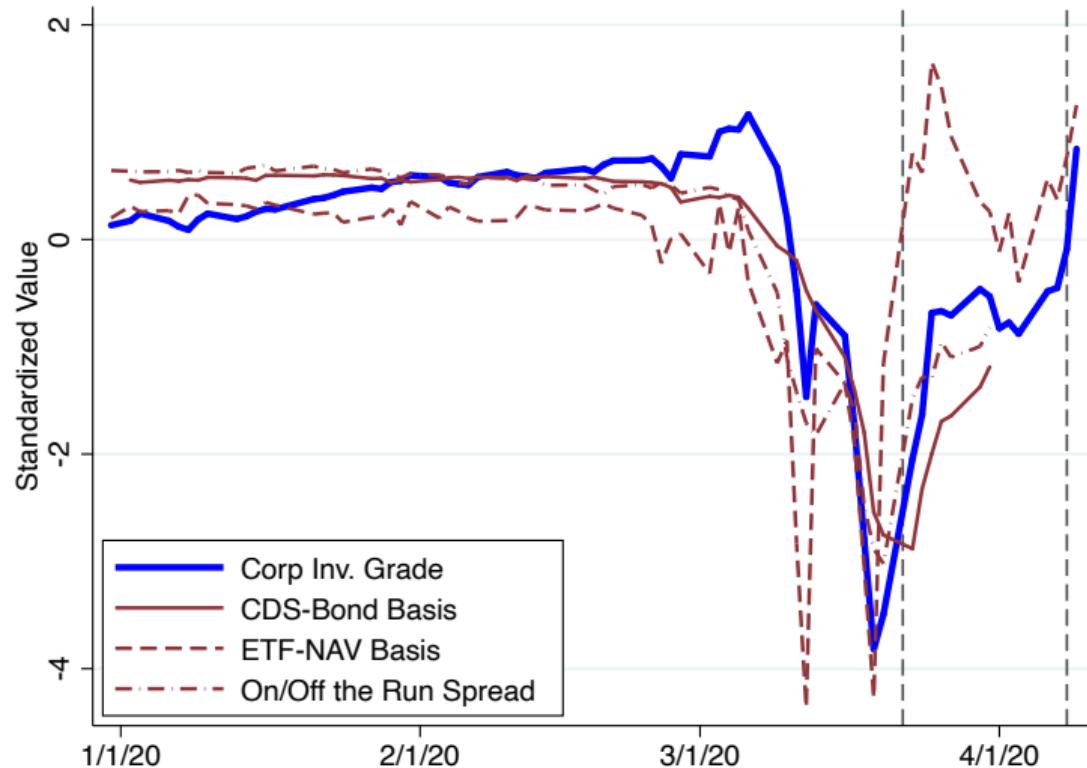
CROSS-SECTION OF CDS-BOND BASIS



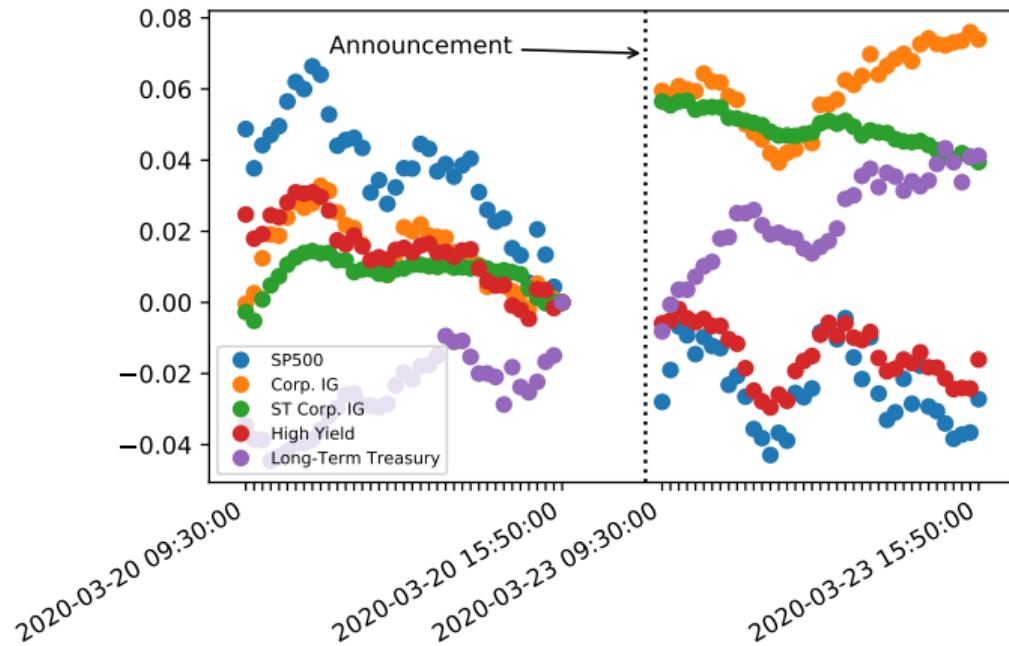
ETF-NAV BASIS



SYNCHRONIZATION OF PRICE MOVEMENTS AND DISLOCATIONS

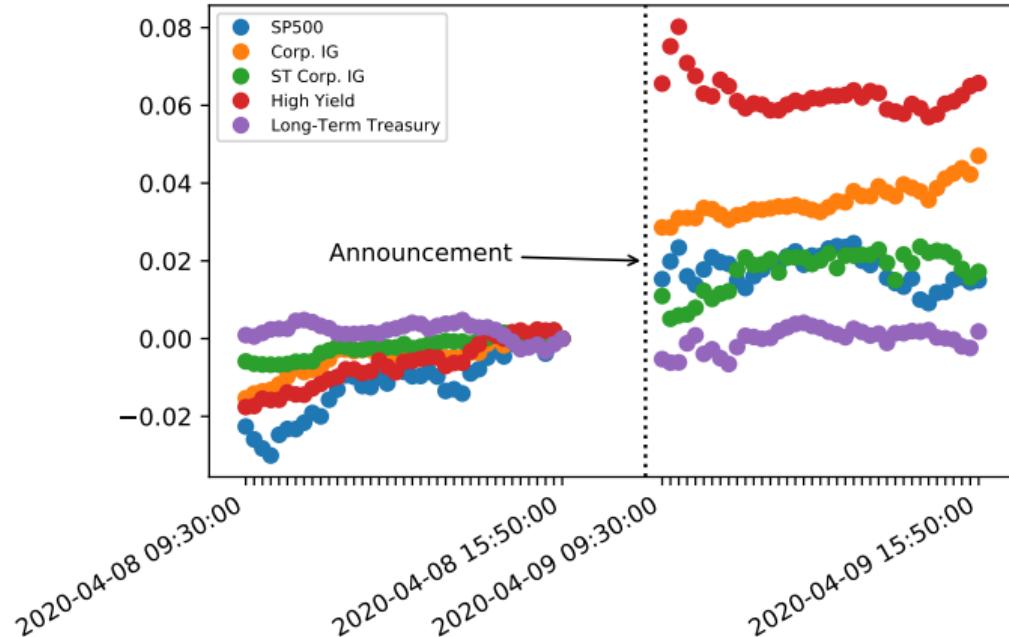


MARCH 23: ANNOUNCE CORPORATE BOND PURCHASES



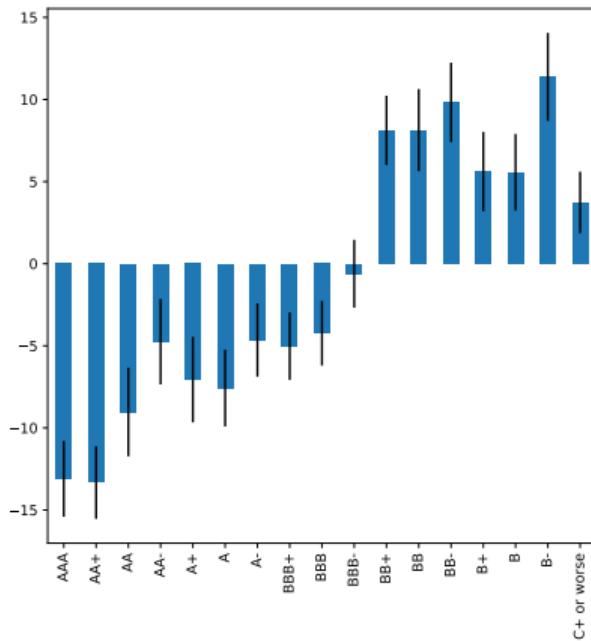
- Strong response in investment grade: $6\% \text{ (return)} \times \$6T \text{ (market size)} = \$360bn \approx \text{facility size } (\$300bn)$

APRIL 9: EXPAND SCALE AND SCOPE OF PURCHASES

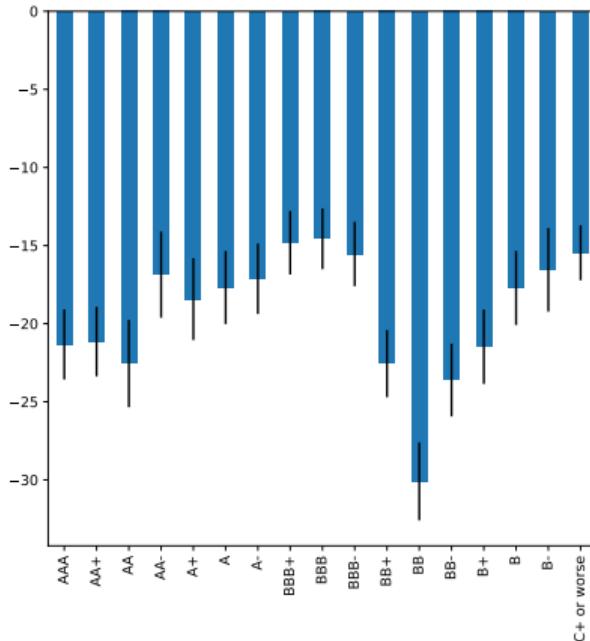


INDIVIDUAL BONDS ACROSS RATINGS

$\Delta \log(spread)$: March 23



$\Delta \log(spread)$: April 9



- In the paper: maturity, belonging to an ETF, ...

DID THE FED CLOSE THE DISLOCATIONS?

	Δspread on March 23			Δspread on April 9		
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	49.51*** (9.15)			-64.81*** (6.30)		
$\Delta \text{basis}_{2/28 \rightarrow \text{day before ann.}}$	-0.14*** (0.04)			0.13*** (0.04)		
IG		31.33** (12.57)	13.75 (14.50)		-60.93*** (7.12)	-16.81* (9.65)
$\text{IG} \times \Delta \text{basis}_{2/28 \rightarrow \text{day before ann.}}$		-0.15*** (0.05)	-0.11** (0.05)		0.23*** (0.05)	-0.07 (0.07)
$\text{IG} \times \Delta \text{cds}_{2/28 \rightarrow \text{day before ann.}}$			0.07** (0.03)			-0.26*** (0.04)
HY		68.75*** (11.35)	49.08*** (18.74)		-68.71*** (10.86)	-33.51** (13.22)
$\text{HY} \times \Delta \text{basis}_{2/28 \rightarrow \text{day before ann.}}$		0.11* (0.06)	0.09 (0.06)		-0.33*** (0.09)	-0.26*** (0.09)
$\text{HY} \times \Delta \text{cds}_{2/28 \rightarrow \text{day before ann.}}$			0.06 (0.04)			-0.19*** (0.05)
<i>N</i>	310	310	310	308	308	308
<i>R</i> ²	0.04	0.20	0.21	0.03	0.14	0.27

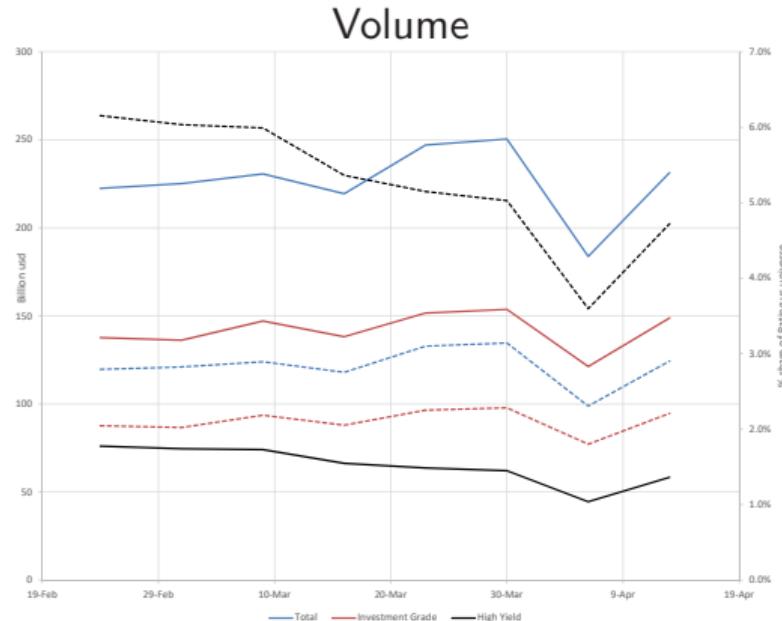
INTERPRETING THE DATA

FUNDAMENTALS

- *Cash flows*: intuitive given large drop in GDP
- *Risk compensations*: more uncertainty, low GDP triggers habit, long-run risk ...
 - Difficult to explain similar losses on investment-grade and high-yield, and close to stocks
 - Difficult to reconcile with the fact that dislocations represent bulk of price drop

TRADING FREEZE

- Market breakdown?
- No meaningful change in volume



PLUMBING: DEALERS



- Disintermediation due to post-crisis regulation, increased cost of balance sheet space

PLUMBING: DEALERS

Three challenges:

- Strong price and quantity response when the Fed *announces* future bond purchases (March 23, April 9)
- No price response to PDCF (March 17) and relaxation of leverage regulation for Treasuries (April 1)
- Intermediation costs tend to be larger or equal for high-yield than for investment-grade

WIDESPREAD SELLING PRESSURE

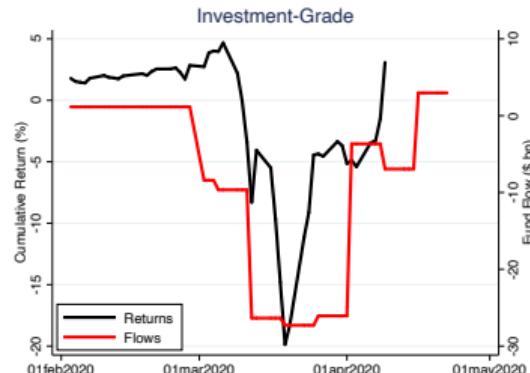
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- Price dislocations suggest need for liquidity or cash
 - ▶ Selling usually more liquid investment-grade bonds
 - ▶ Selling bonds rather than insuring them with CDS
 - ▶ Selling more liquid ETFs first

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- Who is selling?
 - ▶ *Mutual funds*: \$100bn outflow in investment-grade funds.



FUTURE SELLING

- Immediate selling might be tip of the iceberg: *anticipation of future selling* creates large price drops
 - ▶ *Life insurers*: typically slow-moving, but predictable future sales plausible (Chodorow-Reich, Ghent, Haddad 2020)
 - ▶ *Mutual funds*: fragility of funding structure (Goldstein et al. 2017)
 - ▶ *Issuers*: borrow more due to revenue shock
- Anticipation of future buying works: Fed effect even though buying has not started

CONCLUSION

- **COVID-19 crisis created large tremors on debt markets**
 - ▶ -20% return on investment-grade bonds
 - ▶ Large price dislocations: ETF-NAV, CDS-Bond
 - ▶ Reversion because of Fed intervention
- Overall strongly suggest widespread and persistent selling pressure
 - ▶ rather than frictionless fundamentals
 - ▶ rather than purely dealer-centric issues
 - ▶ consistent with many institutions needing liquidity

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 - ▶ consistent with many institutions needing liquidity
- Lots of great work on debt markets and COVID-19: Augustin et al., Brunnermeier and Krishnamurthy, D'Amico et al., Duffie, Fleming et al., He et al., Kargar et al., Ma et al., O'Hara and Zhou, Schrimpf et al., Vissing-Jorgensen, ...