

# Discussion of

## *“Intermediary Balance Sheet Constraints, Bond Mutual Funds’ Strategies, and Bond Returns”*

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## *General comment and plan of the discussion*

Truly excellent paper overall, both in importance of question + contribution to the literature

My specific comments are related to:

1. A different way of summarizing the paper
2. Regulation
3. More suggestions on the paper
4. Fragility in COVID
5. Overall implications for policy and open questions

## 1. A different way of summarizing the paper

- With stronger bank regulation, especially on bank capital (think about Tier 1 ratio, leverage ratio, stress tests), nonbank intermediaries are becoming stronger, so what is the relationship with bank holding groups?
  - Substitution. Nonbanks can substitute (regulated) banks (holding groups) and this is what this paper mainly finds
    - Liquidity supplying bond mutual funds partially substitute banks, and they get more profits
    - However, there is a cost of some fragility as they are open ended funds
  - Complement. Banks (holding groups) cooperate with nonbanks and this paper partly finds some consistent evidence
    - Partial results on this as there is evidence on increasing fund performance by bank-affiliated liquidity-supplying funds

## 2. Regulation? If so, which one?

- Different regulations over this period (change in leverage ratio, Tier 1 Capital ratio, LCR...) and even crucial monetary policy (QE and QT with massive change in reserves). For example:
- QT in 2017 affecting reserves and liquidity, and big liquidity stress in September 2019, so is this key in your data in post 2015?
- Further, QE massively changes bank reserves, so is it Leverage Ratio and QE (massive reserves held by banks) together?
- IG vs HY bonds. Increase in both leverage ratio and capital ratio, so it is not that LR did not exist before. I think EU and JP affiliated dealer banks got LR after the 2008 crisis due to bank holding group constraints for foreign banks holding groups in US, but not sure on details and timing
- Suggestion: time varying coefficients in your analysis for the basic result, e.g. year by year (or quarter by quarter around regulation)

### *3. More comments/ suggestions on the paper*

- Interesting results not commented in the paper: eg such as constrained bonds large positive coefficients for pre-leverage period, but not end of quarter but similar across months
- Alpha profits? But there are higher returns but those funds are taking some risks, e.g. withdrawals in bad times, so is it a fake alpha as in Rajan (Jackson Hole 2005)?
- As banks change behavior after LR introduction, this should affect also the type of bonds their dealers increase a lot in the inventory (endogeneity), so it would be interesting to know as LHS variable (constrained bonds) and bond characteristics on RHS x LR period
  - I think your FE and matching control are good for the endogeneity problem but it would be nice to understand this selection issue

### Pre-Leverage Ratio Period

Fund Type Bond Type	Non-LS Funds			LS Funds		
	All (1)	IG (2)	HY (3)	All (4)	IG (5)	HY (6)
1[QE]	0.061 (0.052)	0.072 (0.059)	0.041 (0.064)	0.036 (0.068)	-0.047 (0.057)	0.220 (0.142)
1[Constr. Bond]	<b>0.157*** (0.047)</b>	0.080 (0.047)	0.240*** (0.067)	<b>0.274*** (0.080)</b>	0.207** (0.079)	0.428*** (0.096)
1[QE] × 1[Constr. Bond]	-0.009 (0.077)	0.023 (0.095)	-0.046 (0.101)	0.026 (0.078)	0.018 (0.080)	-0.021 (0.117)
R-Squared	0.11	0.11	0.13	0.16	0.15	0.17
Observations	2,391,166	1,308,657	1,082,392	714,569	472,683	241,671

### Leverage Ratio Period

Fund Type Bond Type	Non-LS Funds			LS Funds		
	All (1)	IG (2)	HY (3)	All (4)	IG (5)	HY (6)
1[QE]	0.036 (0.028)	0.046 (0.030)	0.026 (0.040)	0.068* (0.039)	0.045 (0.029)	0.146 (0.097)
1[Constr. Bond]	<b>0.072* (0.036)</b>	<b>0.065* (0.032)</b>	0.076 (0.047)	<b>0.071* (0.038)</b>	0.044* (0.025)	0.157** (0.062)
1[QE] × 1[Constr. Bond]	0.018 (0.047)	-0.012 (0.050)	0.051 (0.053)	<b>0.105** (0.050)</b>	<b>0.095** (0.041)</b>	0.107 (0.069)
R-Squared	0.08	0.08	0.09	0.10	0.09	0.11
Observations	3,277,419	1,818,402	1,458,881	1,792,554	1,365,942	426,452

### *3. More comments/ suggestions on the paper*

- Interesting results not commented in the paper: eg such as constrained bonds large positive coefficients for pre-leverage period, but not end of quarter but similar across months
- Alpha profits? But there are higher returns but those funds are taking some risks, e.g. withdrawals in bad times (a kind of tail risk), so is it a fake alpha as in Rajan (Jackson Hole 2005)?
- As banks change behavior after LR introduction, this should affect also the type of bonds their dealers increase a lot in the inventory (endogeneity), so it would be interesting to know as LHS variable (constrained bonds) and bond characteristics on RHS x LR period
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## 4. Fragility

- The diff in diff around 2015 is very good for IG vs HY, but not sure about the COVID shock. Why HY bonds should not be affected in COVID?
  - Note also  $\mathbb{1}(\text{constrained})$  is for both IG and HY (*before vs after* 2015 it was working for HY)

Dependent Variable Bond Specification	Monthly Illiquidity <sub>j,t</sub>			Excess Bond Return <sub>j,t</sub> (%)		
	All	IG	HY	All	IG	HY
	(1)	(2)	(3)	(4)	(5)	(6)
$\mathbb{1}[\text{March 2020}]$	92.005*** (2.183)	99.072*** (2.573)	68.785*** (3.621)	-6.010*** (0.079)	-6.034*** (0.091)	-5.858*** (0.152)
$\mathbb{1}[\text{Constrained}_{j,t-1}]$	-1.949 (3.835)	-6.631 (5.025)	-0.362 (5.100)	1.222*** (0.145)	1.685*** (0.160)	0.274 (0.288)
$\mathbb{1}[\text{March 2020}] \times \mathbb{1}[\text{Constrained}_{j,t-1}]$	3.625 (4.959)	<b>18.205***</b> <b>(6.226)</b>	-7.532 (7.480)	<b>-2.144***</b> <b>(0.201)</b>	<b>-2.954***</b> <b>(0.217)</b>	-0.667* (0.397)
R-Squared	0.73	0.73	0.77	0.79	0.78	0.80
Observations	7,806	5,716	2,090	11,032	8,558	2,474

- The ideal counterfactual exercise should be two crisis, one with LR and one without LR, and then a change in IG but not in HY, but you only have COVID, ie post LR
  - In this exercise I would have guessed that HY always with problems in crisis and IG only with LR constrained
  - Is it because there are many more precautions in HY bond funds?
  - If so, IG bond funds should do the same now that banks supply less liquidity due to LR constraint?



## 5. Policy implications: open questions for the future

- Fragility in open end mutual funds, but higher fragility than in banks?
- Do we want banks to take risks in securities, e.g. BBB (IG), with explicit guarantees (deposit insurance, LoLR) and implicit ones (bailouts)?
- Credit supply effects? E.g. in Abbassi-Iyer-Peydró-Tous (JFE 2016) we showed that banks cut credit supply in crises to get very high returns (from fire sales) by supplying liquidity in bonds (even in IG bonds) with negative real effects for employment and investment
- One could even have a *daily* leverage ratio as in the UK, so not just quarter end
- On the other hand, Mariassunta et al. excellent paper shows only results in *low* risk (IG) bonds → there is an interesting trade off for policy: should banks take on some risk on the *safer* securities (though a large fraction are BBB) or no?