

The impact of sovereign tensions on bank lending: identifying the channels at work

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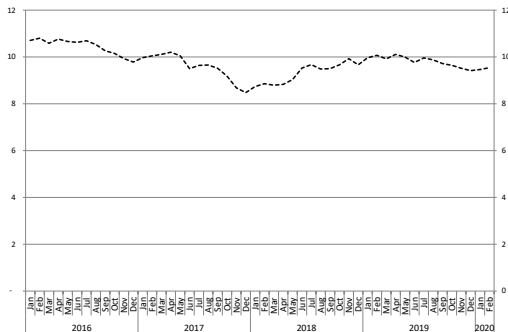
Bank of Italy

Milan, 22nd August 2022

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Motivation

Domestic government bonds as a share of bank assets
(percentage points)



Source: Individual supervisory reports.

- Banks hold a large amount of sovereign bonds: an increase in sovereign spreads dent capitalization and liquidity positions.
- This, in turn, negatively impacts on **bank credit supply**.

Research Question

- I disentangle the **direct channels** of sovereign tensions:
 - bank balance-sheet channel (negative shock to the capitalization of the banks)
 - liquidity channel (negative shock to banks' ability to raise funds against collateral)
- What is the relative importance of each **direct channel** in the propagation of sovereign tensions to credit supply?
- Focus on the development of credit supply in 2018 for the Italian banking system.

Literature

Bank-balance sheet and bank credit supply: Bernanke and Gertler(1995); Khwaja and Mian(2008); Jimenèz et al.(2012); Jimenèz et al.(2014); Schivardi et al.(2017).

Sovereign tensions and bank credit supply: Bofondi et al.(2013); Becker and Ivashina(2018); De Marco(2018); Bottero et al.(2020).

Dataset

Unique dataset at **bank-firm level**.

Result of a merge of 2 dataset:

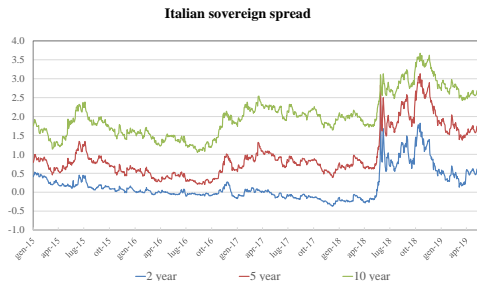
- Supervisory Reports
- Credit Register

Observations on: March-June-September-December 2018.

Shock in 2018:Q2.

The final dataset comprises 3 quarterly observations: 1 pre-shock and 2 post-shock.

Identification strategy



- I study the effects of the rise in government securities yields observed in 2018.

Several advantages of this episode:

- **Exogenous** shock, as consequence of the high political uncertainty.
- Italy only country involved: not systemic shock (no confounding effect due to an intervention of the ECB); no international spillovers.

Identification strategy

- Channels are identified exploiting the allocation of bonds across **IFRS 9 portfolios**.
- According to IFRS 9, financial assets can be allocated in **Held to collect portfolio** (at amortised cost) or in the **Fair value TOCI** or **Fair value TP&L** portfolios (at fair value).
- Only government bonds purchased with the purpose of collecting cash flows over the life of the instrument can be assigned to the first one.
- Reclassifications are difficult (business model behind the asset must be changed).

Identification strategy

Estimation of :

$$\Delta b_{ij,t} = \alpha GovBonds_{i,pre} \times Post + \beta FV GovBonds_{i,pre} \times Post + \gamma_1 X_{i,t-1} + \delta_1 R_{ij,t-1} + \gamma_2 X_{i,t-1} \times Post + \delta_2 R_{ij,t-1} \times Post + \mu_{j,t} + \eta_i + \epsilon_{ij,t}$$

$\alpha \rightarrow$ **liquidity channel**

$\beta \rightarrow$ **balance-sheet channel**

proof

Results - baseline model

Table 4 - The channels of sovereign tensions on credit supply: disentangling the direct channels

VARIABLES	(1)	(2)	(3)	(4)	(5)
GovBonds			0.14*** (4.65)		
FVGovBonds			0.13*** (2.93)		
GovBonds x Post	-0.12** (-2.02)		-0.03 (-0.58)	-0.06 (-1.09)	0.02 (0.32)
FVGovBonds x Post		-0.22*** (-2.68)	-0.25*** (-4.01)	-0.18** (-2.42)	-0.15* (-1.85)
GovBonds x HighInterbk x Post					-0.11 (-1.05)
FVGovBonds x HighInterbk x Post					-0.15 (-1.29)
Observations	1047378	1047378	1047379	1047378	1047378
R2	0.39	0.39	0.39	0.39	0.39
Bank controls	yes	yes	yes	yes	yes
Bank fixed effects	yes	yes	no	yes	yes
Firm*quarter fixed effects	yes	yes	yes	yes	yes

Robust standard errors clustered at bank and firm level

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Extension: controlling for the indirect channels

- Credit supply may contract also as a consequence of the **indirect channels** (triggered by sovereign tensions for the banking system as a whole).
- Among them, the prominent are:
 - the cost of funding channel: Bofondi et al. (2017); Del Giovane et al. (2017).
 - the government guarantee channel: Mäkinen et al. (2020); Correa et al. (2014).
 - the rating downgrade channel: Adelino and Ferreira (2016).
- The **crowding-effect of loans** due to purchases of government bonds may also play a role in reducing bank credit supply: Becker and Ivashina (2018).

Extensions: controlling for the indirect channel

Table 5 - The channels of sovereign tensions on credit supply: controlling for other indirect channels

VARIABLES	(1)	(2)	(3)	(4)
GovBonds x Post	-0.07 (-1.48)	-0.07 (-1.35)	-0.05 (-0.94)	-0.09 (-1.63)
FVGovBonds x Post	-0.15* (-1.82)	-0.21*** (-3.35)	-0.18** (-2.38)	-0.15* (-1.85)
Maturing issued bonds ratio x Post	-0.57* (-1.96)			-0.83** (-2.48)
Deposit retail x Post		-0.46* (-1.82)		-0.24 (-1.03)
Government bonds purchases x Post			-0.02** (-2.31)	-0.02** (-2.30)
Observations	1047378	1047378	1042759	1042759
R ²	0.39	0.39	0.39	0.39
Bank controls	yes	yes	yes	yes
Bank fixed effects	yes	yes	yes	yes
Firm*quarter fixed effects	yes	yes	yes	yes

Robust standard errors clustered at bank and firm level

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Extension: the role of ECB liquidity

- The abundant liquidity provided by the ECB to the euro area banking system may explain the finding that the liquidity channel did not activate following the 2018 sovereign shock.

- I consider the degree of funding raised on the private markets:

$$share_mkt = \left(\frac{Private\ wholesale\ funding_{i,pre}}{Total\ wholesale\ funding_{i,pre}} \right)$$

- ...and then interact `share_mkt` with the variables of the baseline.

Extension: the role of ECB liquidity

Table 6 - The role of recourse to Eurosystem funds on the activation of the liquidity channel

VARIABLES	(1)	(2)	(3)
GovBonds x share mkt x Post	-0.26* (-1.91)	-0.29** (-2.15)	-0.37*** (-2.77)
Share mkt x Post	0.03 (1.12)	0.03 (1.21)	0.06** (2.08)
GovBonds pre x Post	-0.03 (-0.35)	0.05 (0.75)	0.03 (0.39)
FVGovBonds pre x Post		-0.21*** (-3.04)	-0.17** (-2.31)
Deposit retail x Post			-0.30 (- 1.12)
Maturing issued bonds ratio x Post			-0.84*** (-2.72)
Government bonds purchases x Post			-0.01** (-2.28)
Observations	1046945	1046945	1042468
<i>R</i> ²	0.39	0.39	0.39
Bank controls	yes	yes	yes
Bank fixed effects	yes	yes	yes
Firm*quarter fixed effects	yes	yes	yes

Robust standard errors clustered at bank and firm level

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Concluding remarks and further research

- Results suggest that the contraction of credit supply associated to the direct channels of sovereign tensions is mainly due to a deterioration in the capitalization of banks.
- For the event considered the deterioration in the liquidity position does not seem to play a role in the transmission of sovereign tensions.
- Future research aims at comparing the effects of **direct** and **indirect channels**.

Thank you

Thank you for the attention!

Appendix

$$\Delta b_{ij,t} = (\beta + \alpha) \text{FVGovBonds}_{i,pre} + \alpha \text{AmmGovBonds}_{i,pre} + \dots$$

$$= \alpha (\text{FVGovBonds} + \text{AmmGovBonds})_{i,pre} + \beta \text{FVGovBonds}_{i,pre} + \dots$$

$$\Delta b_{ijt} = \alpha \text{GovBonds}_{i,pre} + \beta \text{FVGovBonds}_{i,pre} + \dots$$

back