

# Seniority and Sovereign Default

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# Motivation I

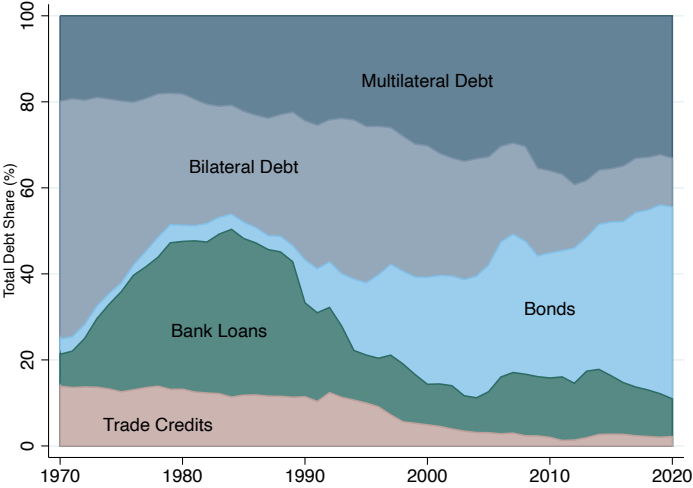


Figure: Composition of Sovereign Debt Excluding AE

# Motivation II

- Literature on sovereign debt has focused on bonds but little on multilateral debt.
- Multilateral lenders consist majorly of the IMF and the WB. [Detail](#)
- Multilateral lenders are peculiar:
  - Enjoy a **de facto** seniority (Schlegl et al., 2019).
  - Repaid in full during restructurings, while others get haircuts.

# This Study

- What are the consequences of this **de facto** seniority?
- Empirical analysis:
  - Study of 186 default episodes on external (private) debt.
  - Defaults involving multilateral creditors: infrequent, longer duration, greater private haircuts.
- Theoretical analysis:
  - Model of endogenous **defaults** and **restructurings**.
  - **Tough renegotiation** explains longer defaults and greater haircuts.

# Outline

**1** Empirical Analysis

2 Theoretical Analysis

3 Conclusion

- Sample of 186 **external** defaults on **private** debt from 1970 to 2014.
- Defaults' dates from Asonuma and Trebesch (2016).
- Haircuts' estimates from Cruces and Trebesch (2013).
- Creditors involved from Beers and Mavalwalla (2018).

# New Empirical Facts

- A default involving multilateral creditors:

- 1** is **infrequent**.

⇒ 21% of all reported episodes.

- 2** takes **longer** to be resolved.

⇒ 7 years vs. 3 years for other defaults.

- 3** is related to **larger haircut** on private creditors.

⇒ 56% vs. 32% for other defaults.

- The level of multilateral debt:

- 4** **increases** before a default.

⇒ 17% relative to year before default.

# Econometric Analysis

- Control variables: [Detail](#)
  - Specificity of default (e.g. amount defaulted, Brady deal).
  - Economic situation (e.g. GDP, debt, IMF or WB program).
  - Political situation (e.g. regime, regime change, war, election).
- Duration:
  - Ordinary Least Squares regressions. [Go](#)
  - Semi-parametric duration regressions. [Go](#)
- Haircut:
  - Ordinary Least Squares regressions. [Go](#)
- Multilateral borrowing:
  - Fixed Effects regressions. [Go](#)



# Outline

1 Empirical Analysis

2 Theoretical Analysis

3 Conclusion

# Environment

- Small open economy.
- Risk neutral lenders: **private** and **multilateral**.
  - Subordination of private lenders.
  - Larger punishment on multilateral debt defaults.
- Risk averse borrower (i.e. sovereign country):
  - Selective default choice.
  - Creditor-specific renegotiation.

# Outcome

- During restructurings, multilateral lenders:

1 do not grant **debt reliefs**.

2 do not provide **new money**.

} Practice of IMF and WB.

- Longer default due to 1 and larger private haircuts due to 2.

- Catalytic effect limited to a certain level of multilateral debt.

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# Model Fit

	Data	Model
Default length (year) (with multilateral lenders)	7.3	6.2
Default length (year) (without multilateral lenders)	2.6	2.5
Private creditors' haircut (%) (with multilateral lenders)	56.1	50.8
Private creditors' haircut (%) (without multilateral lenders)	32.0	31.2
Multilateral debt increase (%) (prior to default)	17.2	14.1
Share multilateral defaults (%)	21.5	19.0

# Policy Analysis

- Pari passu restructuring:
  - Welfare gains for private lenders and borrower.
  - Borrower **stops** using multilateral debt.
- Policy implications:
  - Seniority is costly . . .
  - But is **necessary** to maintain lending at preferential rates.
  - Essential for multilateral lenders' mandate.

# Outline

1 Empirical Analysis

2 Theoretical Analysis

**3 Conclusion**

# Conclusion

- Defaults involving multilateral creditors: infrequent, longer duration, greater private haircuts.
- Construct a model to replicate those facts.
- Main theoretical results:
  - **Tough renegotiation** explains longer defaults and greater haircuts.
  - Limited **catalytic effect** of multilateral debt.

Thanks for your attention!

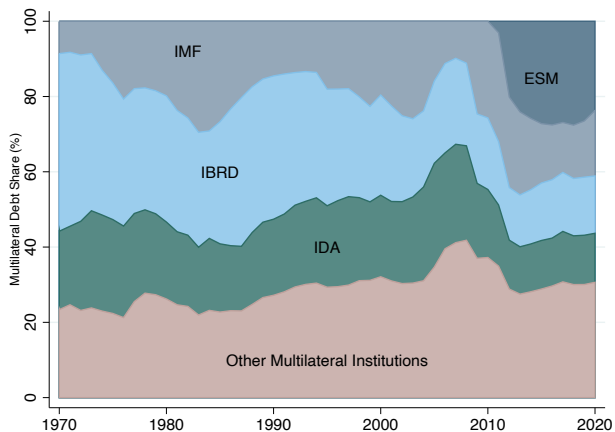


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# Appendix

## Composition of multilateral sovereign debt



**Figure:** Composition of Multilateral Sovereign Debt Excluding AE

# Appendix

## New Empirical Facts

	Mean	Median	Min	Max	Std. Dev.	Obs.
Years in Default						
Overall	3.6	1.6	0.2	27.4	4.67	186
With multilateral creditors	7.3	5.3	0.3	27.4	6.90	40
Without multilateral creditors	2.6	1.4	0.2	18.2	3.18	146
SZ Haircut on Private Lenders (%)						
Overall	37.2	32.1	-9.8	97.0	27.67	186
With multilateral creditors	56.1	51.3	12.3	97.0	27.27	40
Without multilateral creditors	32.0	26.9	-9.8	97.0	25.52	146
Increase in Multilateral Debt (%)						
Overall	17.2	11.0	-12.0	417.8	35.10	186
With multilateral creditors	16.0	9.5	-6.9	95.0	21.00	40
Without multilateral creditors	17.5	11.2	-12.0	417.8	38.12	146

# Appendix

## Control variables

Default's specificity	Duration, private SZ haircut, defaulted amount, Brady deal.
Economic situation	HICP-IDA eligibility, serial defaulter, real GDP, real GDP growth, real GDP per Capita growth, inflation, Federal Funds rate, trade openness, net exports to GDP, external debt to GDP, IMF debt to GDP, WB debt to GDP, IMF program, WB adjustment loans.
Political situation	Communist regime, dictatorial regime, legislative election, postponed legislative election, coup, war, civil war.

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# Appendix

## OLS duration regressions

	(1)	(2)	(3)	(4)	(5)	(6)
	A&T	A&T	A&T	S&P	S&P	S&P
Multilateral Creditors	2.23**	4.69***	3.18***	3.90**	5.13**	3.74**
	[0.95]	[1.14]	[0.90]	[1.61]	[2.11]	[1.63]
Paris Club	-0.03	2.26***	0.33	-0.71	-0.42	-0.98
	[0.64]	[0.75]	[0.65]	[1.59]	[1.52]	[1.61]
Other Official Creditors	1.62*	2.80**	0.46	2.08	4.64*	0.57
	[0.95]	[1.11]	[0.95]	[1.85]	[2.46]	[2.16]
Bank Loans	-1.81**	-0.84	-3.04*	-3.19*	-2.37	-4.08*
	[0.90]	[1.48]	[1.69]	[1.85]	[2.17]	[2.18]
Bond	-1.04	-2.83*	-2.24**	0.66	4.93	1.13
	[1.30]	[1.55]	[1.04]	[1.41]	[3.74]	[2.98]
Other Private Creditors	-0.90	-1.84	-0.28	-0.61	-0.47	0.28
	[1.10]	[1.25]	[0.99]	[1.46]	[2.63]	[1.61]
Country-Specific Controls	No	Yes	Yes	No	Yes	Yes
Default-Specific Controls	Yes	No	Yes	Yes	No	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	186	186	186	104	104	104
R <sup>2</sup> adjusted	0.49	0.43	0.60	0.63	0.52	0.67

Note: \*\*\*  $p < .01$ , \*\*  $p < .05$ , \*  $p < .10$ . Robust standard errors in brackets.

# Appendix

## Cox duration regressions

	(1)	(2)	(3)	(4)	(5)	(6)
	A&T	A&T	A&T	S&P	S&P	S&P
Multilateral Creditors	0.51*** [0.23]	0.41*** [0.22]	0.50*** [0.25]	0.37*** [0.26]	0.39*** [0.28]	0.41*** [0.31]
Paris Club	1.02 [0.18]	0.47*** [0.21]	0.71 [0.23]	0.68 [0.27]	0.47** [0.36]	0.65 [0.39]
Other Official Creditors	0.80 [0.28]	0.86 [0.29]	1.12 [0.31]	0.67 [0.42]	0.30** [0.53]	0.48 [0.53]
Bank Loans	2.43** [0.37]	1.07 [0.45]	2.02 [0.44]	1.59 [0.40]	1.06 [0.38]	1.35 [0.47]
Bond	1.61* [0.27]	2.34*** [0.29]	2.37*** [0.29]	0.98 [0.36]	1.46 [0.38]	1.95 [0.42]
Other Private Creditors	1.03 [0.26]	1.26 [0.28]	0.97 [0.29]	0.92 [0.35]	0.95 [0.44]	0.80 [0.40]
Country-Specific Controls	No	Yes	Yes	No	Yes	Yes
Default-Specific Controls	Yes	No	Yes	Yes	No	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	642	642	642	684	684	684
Episodes	159	159	159	99	99	99
Pseudo R <sup>2</sup>	0.09	0.09	0.11	0.16	0.18	0.20

Note: \*\*\*  $p < .01$ , \*\*  $p < .05$ , \*  $p < .10$ . Robust standard errors in brackets. Hazard ratios are reported.

# Appendix

## FE private haircut regressions

	(1)	(2)	(3)	(4)	(5)	(6)
	H <sup>M</sup>	H <sup>M</sup>	H <sup>M</sup>	H <sup>SZ</sup>	H <sup>SZ</sup>	H <sup>SZ</sup>
Multilateral Creditors	11.96*** [4.29]	9.95** [4.06]	8.54** [3.97]	10.25** [4.19]	10.30** [4.03]	8.63** [4.06]
Paris Club	11.36** [4.46]	9.87*** [3.10]	11.18*** [2.85]	11.09** [4.46]	10.63*** [3.22]	11.64*** [3.02]
Other Official Creditors	8.11 [5.42]	14.65*** [4.33]	14.93*** [4.12]	7.30 [5.41]	12.74*** [4.37]	13.73*** [4.30]
Bank Loans	-3.92 [10.22]	20.13** [8.45]	21.85*** [6.73]	0.27 [10.81]	24.81*** [7.68]	25.30*** [6.76]
Bond	-5.79 [7.96]	-1.98 [4.86]	0.09 [5.10]	-4.13 [8.29]	-2.74 [5.34]	0.51 [6.03]
Other Private Creditors	-8.78 [5.63]	-10.48** [4.71]	-10.10** [4.66]	-8.96 [5.62]	-11.47** [4.67]	-11.15** [4.76]
Country-Specific Controls	No	Yes	Yes	No	Yes	Yes
Default-Specific Controls	Yes	No	Yes	Yes	No	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	186	186	186	186	186	186
R <sup>2</sup> adjusted	0.50	0.72	0.75	0.49	0.70	0.72

Note: \*\*\*  $p < .01$ , \*\*  $p < .05$ , \*  $p < .10$ . Robust standard errors in brackets.

# Appendix

## OLS panel regressions

	(1)	(2)	(3)
	IMF+WB debt	IMF debt	WB debt
Default Start t	0.53**	0.35*	0.18**
	[0.27]	[0.21]	[0.09]
Default Start t-1	0.17	0.04	0.13*
	[0.19]	[0.16]	[0.07]
IMF Program	0.57***	0.38**	0.19***
	[0.21]	[0.18]	[0.07]
WB Adjustment loans	0.60***	0.35***	0.25***
	[0.17]	[0.09]	[0.09]
HIPC or IDA Eligibility	2.63***	0.48	2.14***
	[0.70]	[0.49]	[0.32]
Country-Specific Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Country FE	Yes	Yes	Yes
Observations	750	750	750
Episodes	81	81	81
R <sup>2</sup> adjusted	0.61	0.39	0.83

Note: \*\*\*  $p < .01$ , \*\*  $p < .05$ , \*  $p < .10$ . Robust standard errors in brackets.



# Appendix

## Pecuniary Spillover

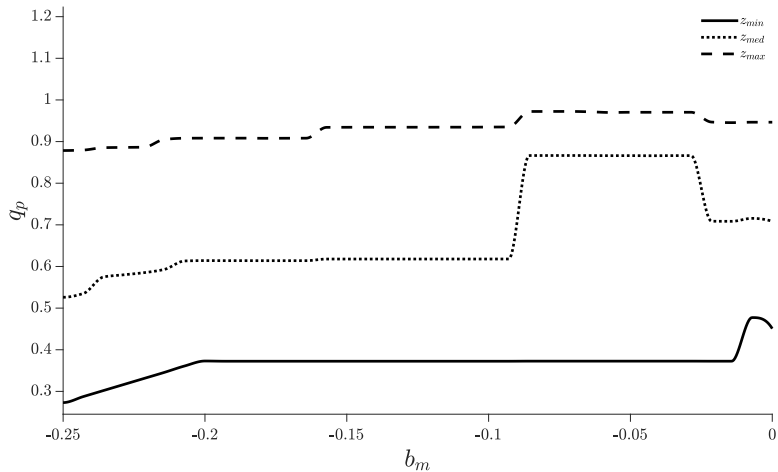


Figure: Private debt price