Bad News Bankers:
Underwriter Reputation and Contagion in Pre-1914 Sovereign Debt Markets

Sasha Indarte
Wharton, UPenn

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Contagion and Financial Intermediary Reputation

- A common feature of financial crisis that exhibit contagion is **shared financial intermediaries** (Kaminsky, Reinhart, and Vegh, 2003)
  - Typical channel: decline in financial intermediary **wealth** $\Rightarrow$ credit contraction

- Alternative channel: can damage to a **monitor's reputation** facilitate contagion?
  - **Monitors:** intermediaries charged with due diligence, advising, and liaising with borrowers
  - E.g., credit rating agencies, underwriters, lead lenders in syndicates
  - Monitoring can be difficult for investors to directly observe $\Rightarrow$ **moral hazard** $\rightarrow$ default signals slacking $\Rightarrow$ price of securities associated with monitor fall

This Paper: Can Underwriter Reputation Facilitate Contagion?

- **Setting**
  - London 1869-1914: the global hub in the first era of global financial markets
  - In early sovereign bond markets, underwriters could build a reputation for monitoring

- **Q:** Does sharing a defaulter's underwriter reduce non-defaulters' bond prices?
  - Stronger comovement with defaulting bond when sharing an underwriter?

- **Main result:** prices of bonds sharing a defaulter's bank fall much more during defaults
  - Non-def. bonds' prices fall 6 times more in an avg. default when sharing defaulter's bank
  - Corresponds to 30% vs. 5% pass-thru of the defaulting bond's price Δ (-4.90% on avg.)

- **Bottom line:** shared monitors can be a powerful source of contagion

Contributions to Related Literature

- **Monitor Reputation:** Beatty and Ritter (1986); Nanda and Yun (1997); Dunbar (2000); Fang (2005); Lewellen (2006); Ivashina (2009); Drucker and Puri (2009); Becker and Milbourn (2011); Murfin (2012); Baghai and Becker (2020)
- **Financial Intermediaries and Contagion:** Allen and Gale (2000); Kyle and Xiong (2002); Kaminsky, Reinhart and Vegh (2003); Diamond and Rajan (2005); Lizarazo (2009); Kalemli-Ozcan, Papaioannou, and Perri (2013); Elliott, Golub, and Jackson (2014); Weiss, Bostandzic, and Neumann (2014); Acemoglu, Ozdaglar, Tahbaz-Salehi (2015); Bocola (2016); Cole, Neuhann, and Ordoñez (2020)
  $\Rightarrow$ **New: monitor reputation as a channel of contagion**
- **Early International Capital Markets:** Fishlow (1985); Eichengreen (1995); Mauro and Yafeh (2003); Abreu, Pinho de Mello, and Sodré (2007); Flandreau and Flores (2009, 2012); Chabot and Kurz (2010); Chapman (2013); Esteves (2013); Oosterlinck (2013); Tomz and Wright (2013); Weller (2015); Meyer, Reinhart, and Trebesch (2019); Olmstead-Rumsey (2019); and Xu (2020); de Jong, Kooijmans, and Koudijs (2022)
  $\Rightarrow$ **New: bond-level default data and evidence on impact of underwriters**

Historical Background

The Role of Sovereign Bond Underwriters

- Underwriters in this era acted as...
  - A window for distributing IPOs in London
  - A "paying agent" who disbursed coupon and principal payments to investors

- Underwriters could affect bond performance thru costly, but difficult to verify, actions:
  1. Due diligence
  2. Influence on political and industrial leaders
  3. Aiding negotiations during defaults

- Rarely holding sovereign bonds, underwriters primarily acted as intermediaries
  (Flandreau and Flores, 2010)

The Economics of Underwriter Reputation

- Informational asymmetries between banks and investors:
  - **Moral hazard:** costly, hidden actions
  - **Adverse selection:** uncertain bank desire to support bonds
- Default can signal (to investors) underwriter willingness/ability to support bonds
  - Underwriters could build a reputation for good bond performance
  - Contagion can spread to **non-defaulting** bonds sharing a defaulter's underwriter
  - **Model** formalizes reputation formation and contagion in a dynamic game where investors imperfectly learn from defaults about underwriter monitoring

Underwriter Reputation

And thus it is that the credit of a foreigner, namely that of the House of Rothschild, not that of the Kingdom of Naples, was responsible for the rise of Neapolitan securities. Hence, the value of public securities does not reflect the prosperity of a country...Naples itself had very little to do in all that beyond punctually paying coupons.

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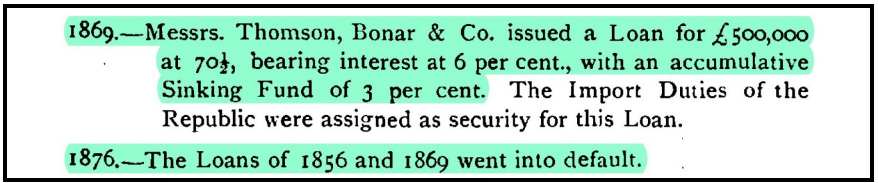
It was especially regrettable that Barings had lent its name to the proceedings. Although all the firm's partners had repeatedly stated that they had no formal connection with the Mexican government and had agreed to pay out dividends as they would [for?] any other commercial agency, the general public had received a different impression. Many bondholders would never had retained their position in the loan but for the character which Messrs. Barings gave it by undertaking the agency.

–*The Times* (Sep. 18, 1827, quoted in Dawson, 1990)

Data

Data Source 1: CFB

- Corporation of Foreign Bondholders (CFB) Annual Reports
- Manually record 200+ defaults during 1869-1914
- Identify month of default for 100+ events
- **New** bond-level data on default



1869.—Messrs. Thomson, Bonar & Co. issued a Loan for £500,000 at 70½, bearing interest at 6 per cent., with an accumulative Sinking Fund of 3 per cent. The Import Duties of the Republic were assigned as security for this Loan.

1876.—The Loans of 1856 and 1869 went into default.

Data Source 2: IMM

- Investors Monthly Manual (IMM)
  - Digitized by William Goetzmann and Geert Rouwenhorst
  - Beginning and end of month bond prices
  - 1,027 bonds throughout 1869 – 1914
  - 75 countries (Africa, Asia, Europe, Americas, Oceania)


THE

Investor's

Monthly Manual,

A NEWSPAPER FOR

INVESTORS

- Hand-match CFB bonds to IMM bonds

- Merge data into a into bond-event panel with price data

Empirical Strategy & Main Results

Identifying Contagion from Shared Monitors

- **Goal:** estimate causal effect on non-def. bond prices of sharing a defaulter's bank
- **Identification Challenges:**
  - Unobserved borrower-level shocks (e.g., common country-level trade shocks)
  - Unobserved bond-level characteristics correlated with bank exposure
  - Mechanism: financial vs. reputational capital
- **Approach:** exploit within-country variation in bank exposure among non-def. bonds

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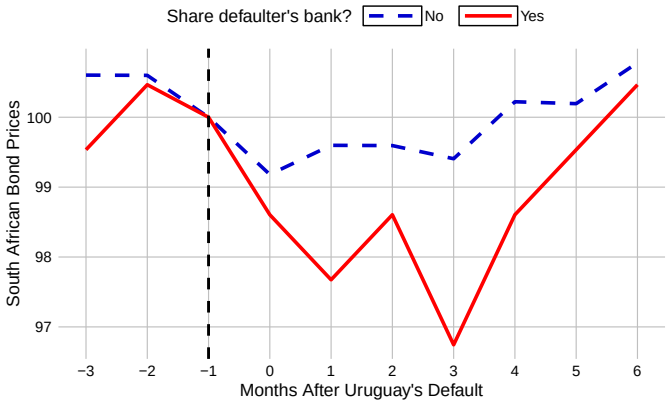
  - Empirically test predictions of competing models/mechanisms

Identification Intuition:



Identification & Estimation

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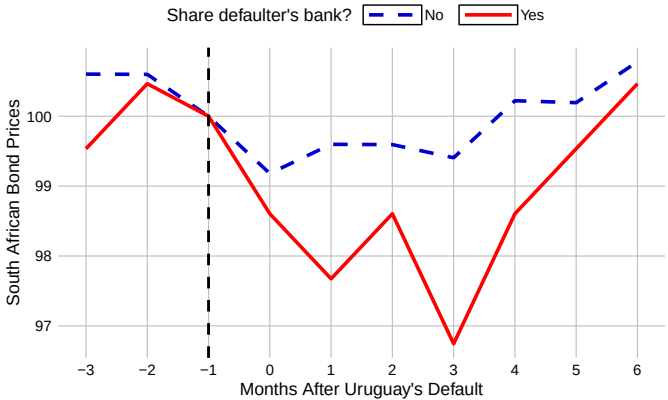

Econometric Specification:

$$\Delta \ln P_{i,e} = \beta_1 \Delta \ln P_e^D + \beta_2 \text{Bank}_{i,e} + \beta_3 (\Delta \ln P_e^D \times \text{Bank}_{i,e})$$
$$+ \gamma L(\Delta \ln P_{i,e}) + \text{Country}_i \times \text{Year}_e + \varepsilon_{i,e}$$

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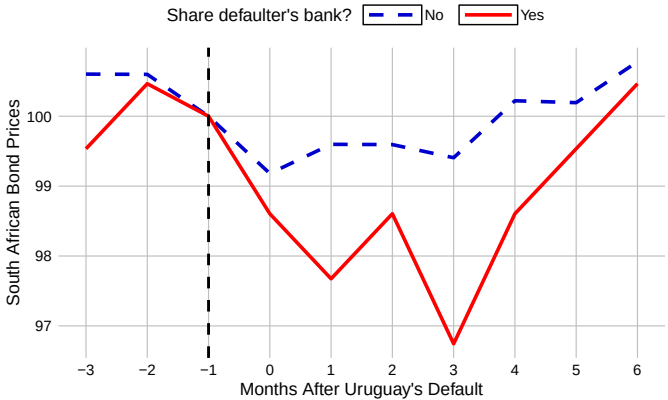

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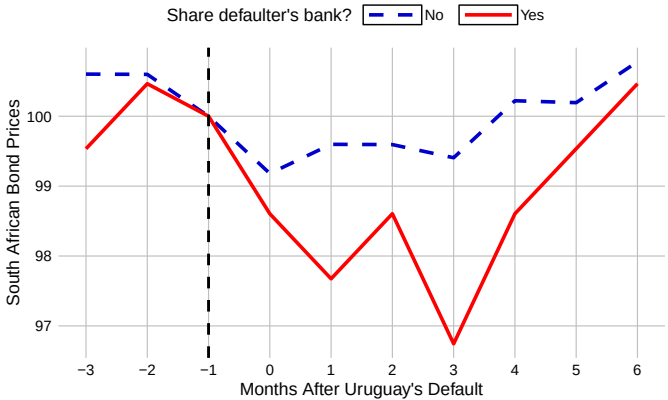

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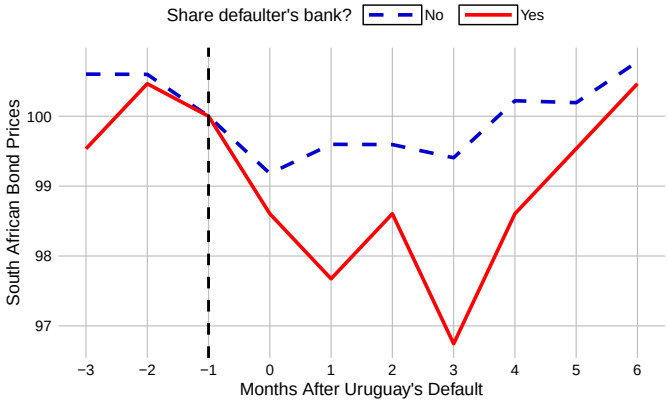

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$$+ \gamma L(\Delta \ln P_{i,e}) + \text{Country}_i \times \text{Year}_e + \varepsilon_{i,e}$$

Dependent variable: $\Delta \ln P_{i,e}$

	(1)	(2)	(3)	(4)	(5)
$\Delta \ln P_e^D$	0.02**	0.04***	0.05***	0.05***	0.05***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
$\text{Bank}_{i,e}$	-2.23***	-2.15***	-2.00***	-1.64***	-1.63***
	(0.59)	(0.54)	(0.50)	(0.36)	(0.35)
$\Delta \ln P_e^D \times \text{Bank}_{i,e}$	0.18***	0.19***	0.21***	0.15**	0.15**
	(0.06)	(0.06)	(0.07)	(0.07)	(0.07)
Country FE	✓	✓	✓	✓	✓
Year FE		✓	✓	✓	✓
Def. Country FE			✓	✓	✓
Country x Year FE				✓	✓
Bank FE					✓
Observations	21,542	21,542	21,542	21,542	21,542
R2	0.03	0.05	0.06	0.23	0.23

Prior to the regression, all logged and differenced prices are multiplied by 100, making their units are in log points. Coefficients on $L(\Delta \ln P_{i,e})$ are omitted for brevity. I demean $\Delta \ln P_e^D$, whose average value is -4.98. Standard errors are clustered by time (monthly). Statistical significance: 0.1*, 0.05**, 0.01***. ▸ Persistence

Robustness & Interpretation: The Role of Reputation

Mechanism: Reputation or Financial Capital?

- **Alternative explanation:** contagion via damage to bank or investor wealth
- **Testable prediction:** is the effect of sharing a bank larger when a larger % of the bank's bonds are involved in the default?
  - **Wealth Effects:** sharing a bank $\Rightarrow$ worse price decrease
  - **Reputation:** sharing a bank $\Rightarrow$ milder price decrease

▸ Model Proposition

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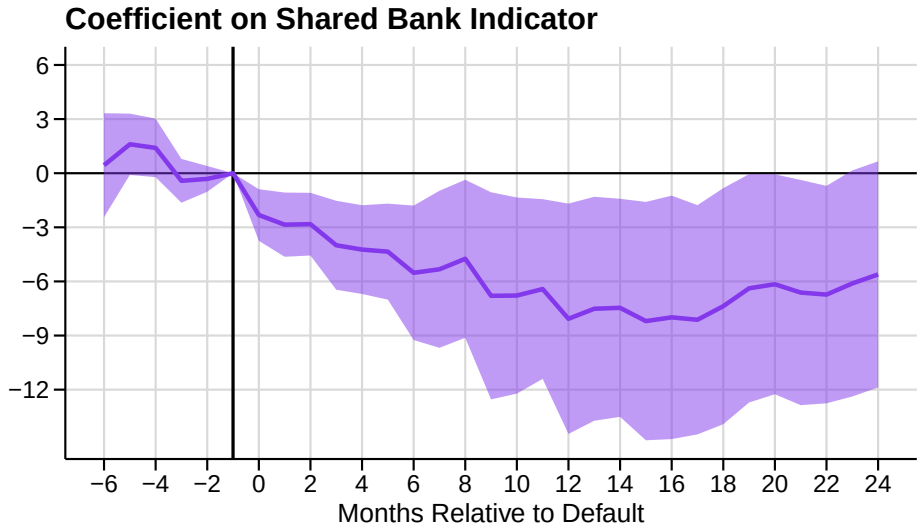
  - **Reputation:** sharing a bank $\Rightarrow$ milder price decrease
- **Test:** interact shared bank indicator with % of bank's bonds involved (by principal)
  - Find contagion via shared bank is milder in larger defaults **(reputation ✓)**

▸ Model Proposition

Mechanism: Persistence of Impact of Sharing Defaulter's Bank



Summary of Additional Results

- **Selective default as a signal:**
  - Sends a worse signal for defaulter when others avoided crisis turning into default
  - Can send a positive signal for "good" bank that avoids default, signals willingness to fight

- **Empirical tests:**

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- Is contagion is smaller for banks associated with fewer recent defaults? **Yes** ✓

- Does sharing a defaulter's bank correctly predict higher future default risk? **Yes** ✓

Conclusion

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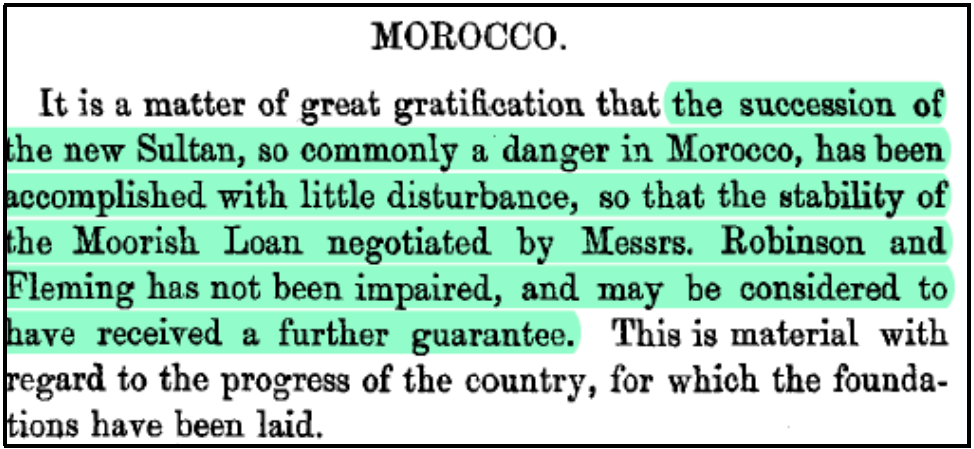
- Asymmetric info can make **monitor reputation** a powerful channel of **contagion**
- Evidence comes from **new** data on defaults and within-country variation
  - Average pass-through in a default is **30% vs. 5%** for bonds sharing a defaulter's bank
  - $\Rightarrow$ significant contagion unrelated to country fundamentals
- Similar mechanisms can arise in many modern settings:
  - Credit rating agencies
  - Syndicated lending
  - Corporate debt and equity underwriters

Thanks!

CFB Examples – Influence

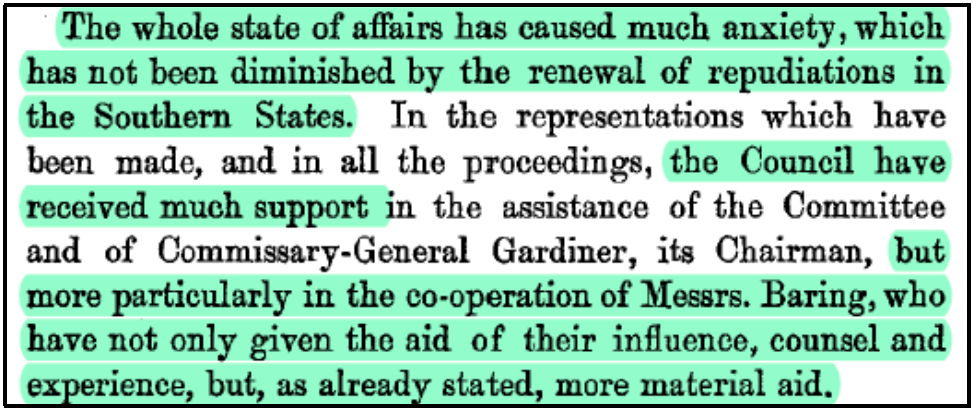


MOROCCO.

It is a matter of great gratification that the succession of the new Sultan, so commonly a danger in Morocco, has been accomplished with little disturbance, so that the stability of the Moorish Loan negotiated by Messrs. Robinson and Fleming has not been impaired, and may be considered to have received a further guarantee. This is material with regard to the progress of the country, for which the foundations have been laid.

Go Back

CFB Examples – Influence



The whole state of affairs has caused much anxiety, which has not been diminished by the renewal of repudiations in the Southern States. In the representations which have been made, and in all the proceedings, the Council have received much support in the assistance of the Committee and of Commissary-General Gardiner, its Chairman, but more particularly in the co-operation of Messrs. Baring, who have not only given the aid of their influence, counsel and experience, but, as already stated, more material aid.

Go Back

up to the 31st of December, 1893.

ARGENTINA.

An important feature of the past year has been the settlement concluded by the Committee presided over by Lord Rothschild with the Argentine Government, in virtue of which cash payments on all the direct national obligations were resumed on the 1st of January. The resumption is only partial, for, whilst the sinking fund is entirely suspended

Go Back

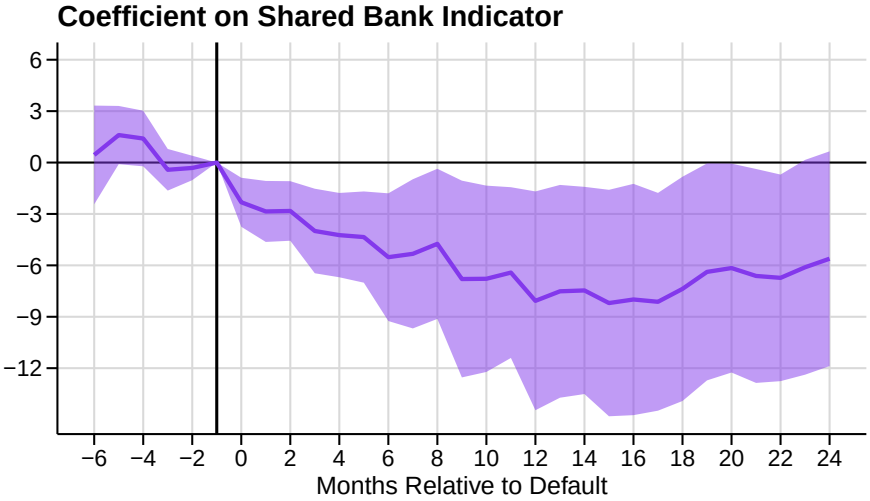
CFB Examples – Negotiation

The vexations practised on the Bondholders by the Italian Government have been pressed on the attention of the Council, and the Council have addressed serious remonstrances to the Minister of Finance. So far, however, from these having received due attention, and any remedy being applied to the grievances, the Italian Government has persisted in its course, and inflicted further annoyances.

The coupon due on the 1st January was not provided for here at the appointed time, and the Council made application in conjunction with the authorities of the Stock Exchange to Messrs. De Rothschild, who immediately put themselves in telegraphic communication with the Government, and obtained the necessary instructions.

Go Back

Persistent Negative Effect of Sharing Defaulter's Bank



Go Back

Players (1/3)

Back

Setting: dynamic game with moral hazard and adverse selection

Passive player: foreign government borrowing from investors

- Encounters a crisis with probability $\delta \in (0, 1)$
- A crisis might trigger default: $D_t = 1$
- Otherwise, the government repays its debt: $D_t = 0$
- Default D_t is public information

Players (2/3)

Long-run player: a bank underwriting government bonds

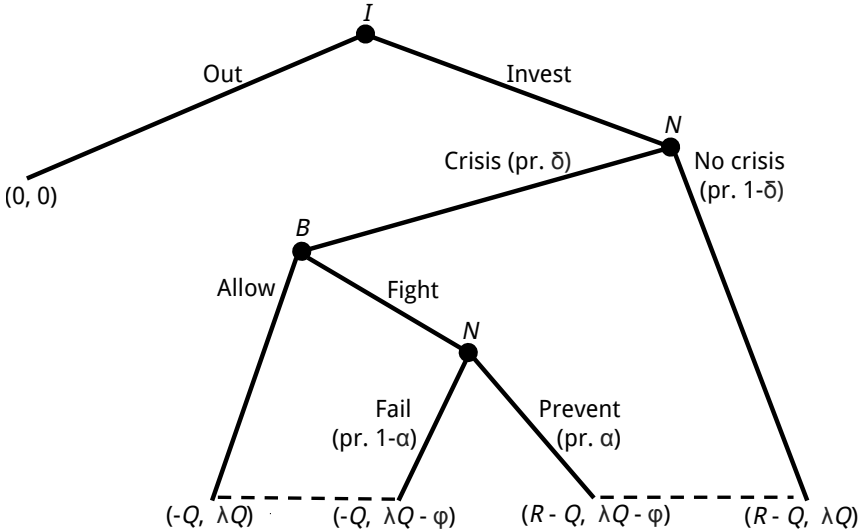
- Sells bond to investor for (exogenous) Q, retaining finders fee $\lambda Q < Q$
- Stage payoff: receives λQ if the bond is sold, 0 if the investor doesn't purchase
- Objective: maximize expected NPV of stage payoffs
- Information: privately observes if a crisis occurred $\kappa_t \in \{\kappa^C, \kappa^{NC}\}$
- Actions: can fight the crisis or allow it to proceed $a_t \in \{F, A\}$
  - Costs φ to fight, 0 to allow
  - Has private type $\varphi \in \{\varphi^G, \varphi^B\}$ where $\varphi^G < \varphi^B$
  - Fighting prevents default with probability $\alpha \in (0, 1)$
  - If allowing, the crisis inevitably turns into default

Short-run players: a sequence of investors

- Information: observe only the public history of defaults $s^{t-1} = \{D_0, ..., D_{t-1}\}$
  - Do **not** observe bank actions
- Beliefs: Given prior $\mu_0 = P(\varphi = \varphi^G)$ and public history s^{t-1}, forms beliefs:

$$\mu_t(s^{t-1}, \mu_0) = P(\varphi = \varphi^G | s^{t-1}, \mu_0)$$

- Actions: each period t a new investor considers purchasing a bond with price Q
- Payoff: receive $R > Q$ if $D_{t+1} = 0$, otherwise 0 if $D_{t+1} = 1$
- Objective: maximize expected one-shot stage payoff


I
Out
Invest
(0, 0)
N
Crisis (pr. δ)
No crisis
(pr. 1-δ)
B
Allow
Fight
N
Fail
(pr. 1-α)
Prevent
(pr. α)
(-Q, λQ)
(-Q, λQ - φ)
(R - Q, λQ - φ)
(R - Q, λQ)

Balance Test (Outcome = 1[Bank])

Go Back

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$L(\Delta \ln P_{i,e})$	0.001	0.002	0.001	0.001	0.001	0.000	0.002	0.001
	(0.004)	(0.005)	(0.004)	(0.004)	(0.004)	(0.006)	(0.005)	(0.006)
Issue Price$_i$		-0.002					-0.001	-0.004
		(0.003)					(0.005)	(0.006)
ln(Orig. Issue$_i$)			0.003				0.005	0.005
			(0.002)				(0.004)	(0.005)
Coupon$_i$				0.000			-0.002	0.000
				(0.002)			(0.003)	(0.006)
1[Has SF$_i$]					0.005		0.004	
					(0.004)		(0.006)	
SF Rate$_i$						-0.005		-0.003
						(0.004)		(0.003)
Observations	21542	13699	20841	21360	21542	10557	13673	8413
R2	0.288	0.244	0.287	0.287	0.288	0.256	0.244	0.211

Effect of Ability to Prevent Default on Price Change – Proposition

Proposition 1: Fighting Ability Comparative Static

Denote the price change following default by

$$\Delta \ln P^D \equiv \ln \left[\frac{(1-\delta) + \delta\alpha\mu'}{(1-\delta) + \delta\alpha\mu} \right]$$

where $\mu' = \frac{(1-\alpha)\mu}{(1-\alpha)\mu + (1-\mu)}$. If $\alpha, \delta \in (0,1)$ and $\mu \in [0,1]$, then

$$\frac{\partial \Delta \ln P^D}{\partial \alpha} < 0.$$

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Effect of Ability to Prevent Default on Price Change – Proof

Proof of Proposition 1

The derivative is

$$\frac{\partial \Delta \ln P^D}{\partial \alpha} = -\frac{\alpha\delta\mu(1-\mu)[2(1-\alpha\mu)(1-\delta)+\alpha\mu]}{(1-\delta)[(1-\delta)(1-\alpha\mu)+\delta\alpha(1-\alpha)\mu]}$$

Given $\alpha, \delta \in (0,1)$ and $\mu \in [0,1]$ the denominator is positive as

$$(1-\delta)(1-\alpha\mu) > 0\delta\alpha(1-\alpha)\mu > 0.$$

Note also $2(1-\alpha\mu)(1-\delta)$ is positive, as are the additional terms in the fraction.

Go Back

Effect of Ability to Prevent Default on Price Change – Proposition

Proposition 2: Initial Reputation Comparative Static

Denote the price change following default by

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where $\mu' = \frac{(1-\alpha)\mu}{(1-\alpha)\mu + (1-\mu)}$. If $\alpha, \delta \in (0,1)$, then there exists a unique $\mu^\star \in (0,1)$ such that

$$\frac{\partial \Delta \ln P^D}{\partial \mu} < 0 \quad \text{for all } \mu \in [0, \mu^\star)$$

$$\frac{\partial \Delta \ln P^D}{\partial \mu} = 0 \quad \text{for } \mu = \mu^\star$$

$$\frac{\partial \Delta \ln P^D}{\partial \mu} > 0 \quad \text{for all } \mu \in (\mu^\star, 1].$$