

Permanent Capital Losses after Banking Crises

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What are the drivers of bank losses during banking crises?

Temporary bank losses

- Bank assets trade at sharp discounts due to asset illiquidity or binding leverage or equity constraints
 - e.g., Allen & Gale (1998, 2000), Gorton & Huang (2004), Gertler & Kiyotaki (2010), Gertler & Karadi (2011), He & Krishnamurthy (2012)
- Prices of bank assets bounce back after forceful liquidity interventions, as discount rates normalize and liquidity returns to the market

Permanent bank losses due to

- Fire sales: e.g., Diamond and Dybvig (1983), Shleifer & Vishny (1997, 2011)
- Impaired assets: e.g., Peek & Rosengren (2000), Calomiris & Mason (2003), Correia, Luck, Verner (2025)
- Leads to permanent and earnings-driven shock to bank value
 - Little or no bounce-back, since not discount-rate driven
 - Bank losses persist even after funding liquidity is restored

This paper

We analyze the drivers of bank market-value equity losses across banking crises in 46 economies since 1870.

1. Are banking crises permanent or temporary shocks to bank value?
 - a. Bank equity losses are mostly permanent over a 5-year (or longer) horizon.
 - b. Bank equity decline at crisis onset is mainly earnings-driven.
2. What accounts for the permanent losses to bank value?
 - a. Bank losses are best explained by long-run deterioration in asset quality.
 - b. Fire sales are unlikely to account for the majority of bank losses.
3. To what extent do policy interventions restore bank capitalization?
 - a. Extraordinary liquidity-based interventions are not followed by increased bank equity market values.
 - b. Bank recapitalizations (both government-driven and private) tend to be limited.

Roadmap

Historical Data & Crisis Definition

What accounts for the permanent losses to bank value during bank equity crises?

To what extent do policy interventions restore bank capitalization?

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Defining banking crises

Following Baron, Verner, and Xiong (BVX, 2021), we define a “bank equity crisis” as a country-year when:

- a. a 30% annual decline in the bank equity index
- b. the failure of a top-20 bank (ranked by total assets within each country)

Advantages:

- Systematic, real-time identification
- Covers nearly all episodes typically labeled “systemic crises”
- Results robust to other chronologies (e.g., Laeven and Valencia, 2020)

Later we compare bank equity crises to other crisis types:

- Liquidity crises, “averted crises”

Historical data

- Aggregate data (46 countries, since 1870):
 - Bank equity index total returns, yearly and monthly (also nonfinancial equity index returns)
- Bank-level data (17 JST countries only, annual data, since 1870):
 - Only for top-10 banks by assets, around ± 5 -year window around each banking crisis in each country
 - Stock returns and dividends
 - Book equity, assets, and loans
 - Net income, decomposed into write-downs, trading income, and other income
 - Equity issuance and common shares outstanding
- Policy interventions data
 - Liquidity-based interventions (extraordinary liquidity provision, blanket bank liability guarantees)
 - Government recapitalizations

Roadmap

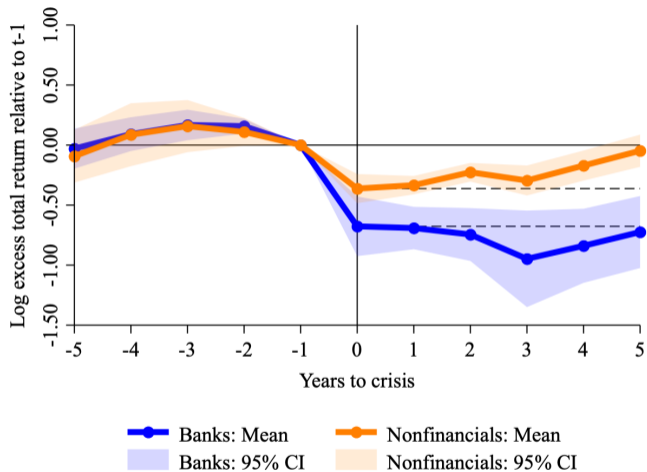
Historical Data & Crisis Definition

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Bank equity declines are permanent after bank equity crises

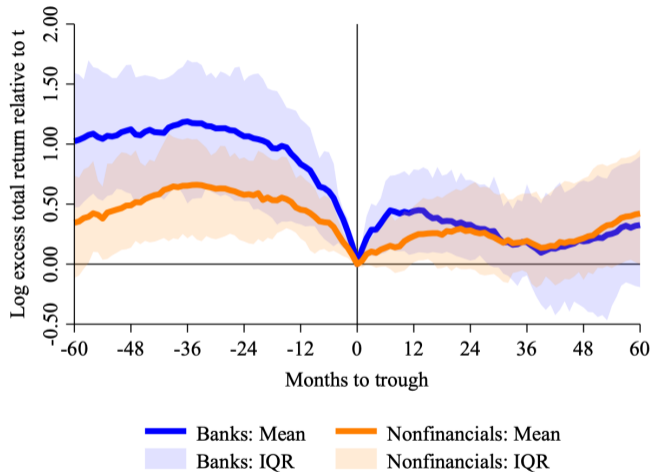


$$r_{i,t+h} = \alpha_i + \beta^h \text{BankingCrisis}_{i,t} + \varepsilon_{i,t+h}$$

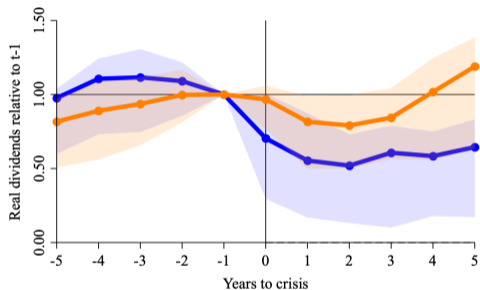
Robustness

- Robust to:
 - advanced vs. developing;
 - pre- vs. post-1945;
 - excluding GFC;
 - excluding failed banks;
 - alternative definitions of banking crises.
- Result extends out to 10 year horizons
- Long-run bank underperformance is stronger when crisis is preceded by a credit boom

Equity returns with perfect timing of troughs



Banks' earnings and dividends around bank equity crises



● Banks: Mean ● Nonfinancials: Mean
■ Banks: IQR ■ Nonfinancials: IQR



● Banks: Mean ■ Banks: IQR

Bank equity declines predict long-run declines in banks' earnings and dividends

Bank level

	Dependent var.: Log-change from $t - 1$ through $t + 5$ of:			
	Real earnings per share		Real dividends per share	
$r_{i,b,t}$	0.981*** (0.218)	0.792*** (0.213)	1.410*** (0.194)	1.277*** (0.233)
Constant	-0.045 (0.229)	-0.150 (0.119)	-0.097 (0.194)	-0.170 (0.128)
Crisis FEs	No	Yes	No	Yes
Adjusted R^2	0.12	0.48	0.29	0.60
N	168	168	204	204

Roadmap

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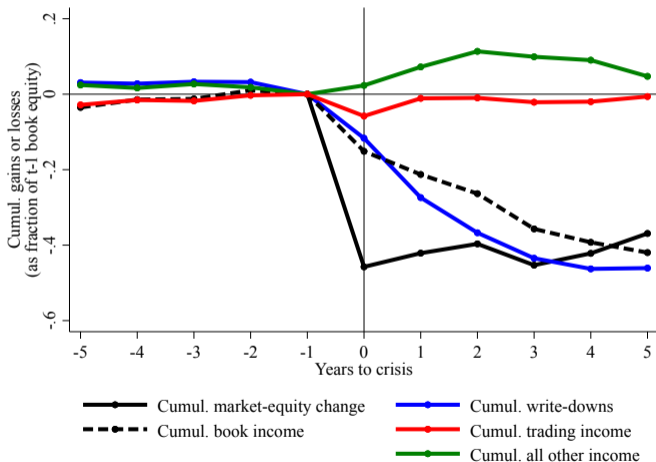
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Fire sales do not account for majority of bank losses

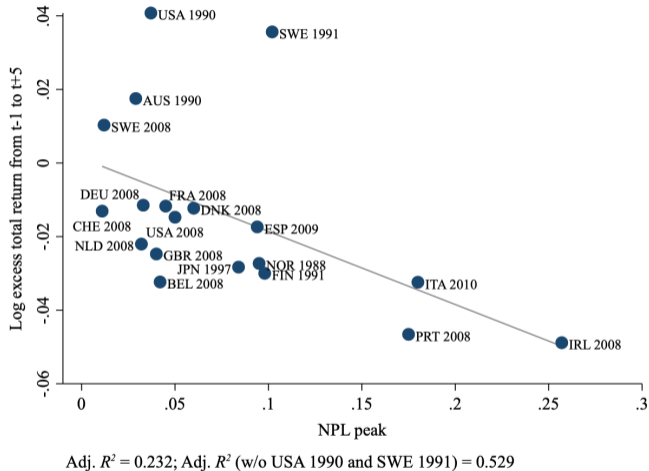
As fire sale losses would be immediately recognized in net income



Write-downs: asset valuation losses, additions to asset-loss reserves, provisioning, etc.

Trading income: realized gains and losses from securities trading and other asset sales, including real estate, loans, and subsidiary divisions.

Long-run bank returns are well explained by NPLs



Sample of episodes is all bank equity crises with NPL data

Roadmap

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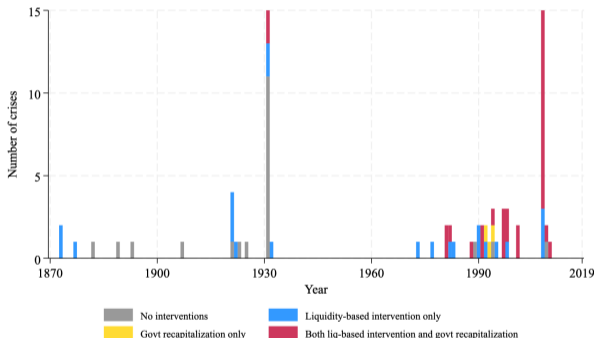
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Government banking-sector interventions

New database of *month* of historical interventions building on Laeven & Valencia (2020), Metrick & Schmelzing (2024), and new historical research

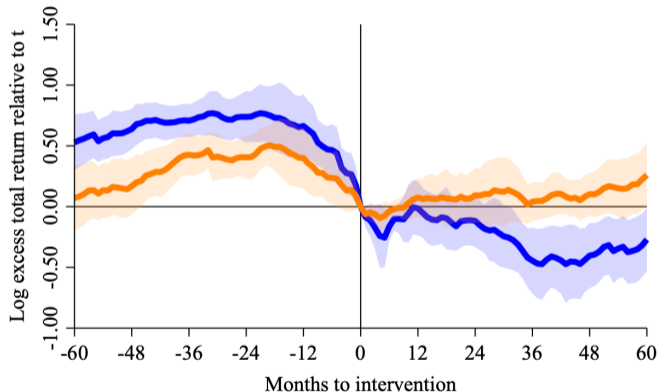


Liquidity-based interventions = “Extraordinary liquidity support” or “blanket bank liability guarantees”

Govt recapitalization = Injecting new common or preferred equity into banks (e.g., TARP)

Liquidity-based interventions are not followed by increases in bank value

Extraordinary liquidity provision or blanket bank liability guarantees (whichever came first)



— Banks: Mean — Nonfinancials: Mean
— Banks: 95% CI — Nonfinancials: 95% CI

Conclusions

- Bank equity crises are mostly permanent shocks to bank value
- Bank losses during crises are mostly explained by deterioration in asset quality, not fire sales
- Liquidity interventions alone are generally not sufficient to bring the banking sector back to previous capitalizations
 - Good as an initial stop-gap measure
 - But should be followed by a large, broad, and timely recapitalization
- Without timely and sizeable recapitalizations, bank undercapitalization tends to be highly persistent