Lecture 1: Introduction

ECON 43370: Financial Crises

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University of Notre Dame

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Course Overview

First several classes: lectures on key concepts

- This is going to be "rapid fire" and not particularly linear nor thorough

Middle part of the course: readings from books and some papers

- Some lecturing here, but mostly discussion

Final part of the course: papers and presentations

Grades

In-class exam: 15 percent (September 15)

Pop-quizzes: 15 percent (dates TBD; seven, get to drop two)

Paper: 50 percent

- Chronology/facts: 10 percent (October 15)
- Mechanism: 10 percent (November 17)
- Combined, final paper (including policy evaluation): 30 percent (December 8)

Final presentation: 10 percent (December 1, 3, and 8)

Participation: 10 percent

Paper

You will write a paper about a historical financial crisis

You will be given a set of crises from which to choose. I will randomly assign picking orders. Only one person per crisis (September 29)

- Background, chronology, facts: $\approx$ three-to-five pages (October 15)
- Mechanism: $\approx$ three-to-five pages (November 5)
- Final paper: combine background, mechanism, and include policy evaluations. $\approx$ 12-20 pages (December 8)

AI and In-Class Devices

Up to you how you want to make use of AI

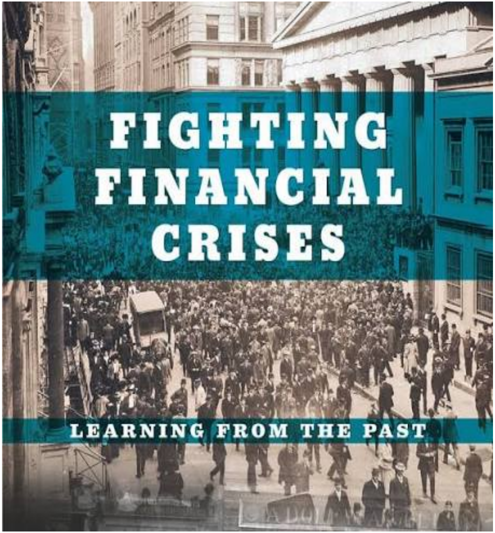
- Suggestion: read, write, think on your own first, then iterate with AI
- Writing is thinking

You are encouraged to go device-free in class

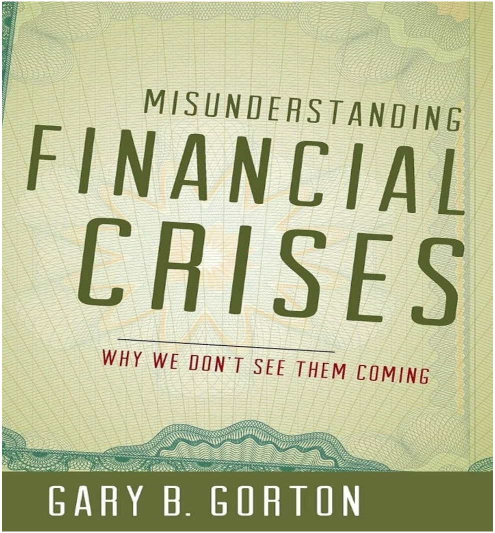
- I reserve the right to ask you to put away a device if I think your device is creating a negative externality

Brunnermeier and Reis

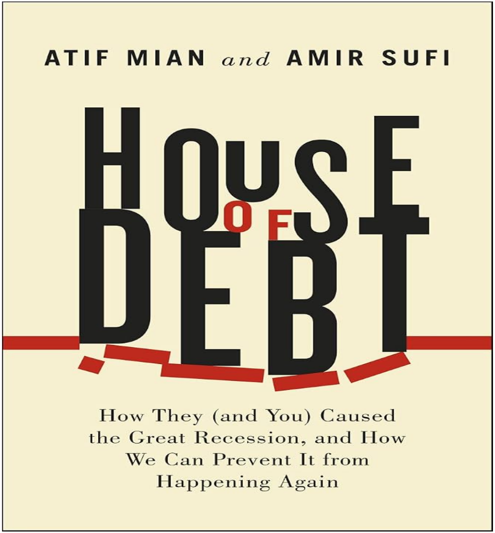
Gorton and Tallman



Gorton


MISUNDERSTANDING
FINANCIAL
CRISES
WHY WE DON'T SEE THEM COMING
GARY B. GORTON

Mian and Sufi



Assets

Asset: something of value to a person or institution that can provide flow benefits in the future

- These benefits can be financial (i.e., cash flows) or real (e.g., utility benefit of a home)

Examples:

- Home (real)
- Share of stock (financial)
- Bond (financial)
- Checking account (financial)

Liabilities

Liability: an obligation to provide cash, goods, services or some other resource to another party (now or in the future)

Examples:

- Loan (e.g., mortgage)
- Checking account (for the issuing bank)

A financial security is an asset (to the holder) and liability or equity claim (against the issuer) that is tradeable in secondary markets

Not all financial assets/liabilities are tradeable (or widely tradeable), but many are

Net Worth

An individual's or institution's <u>net worth</u> (also called <u>equity</u> or <u>financial capital</u>) is the difference between the values of assets and liabilities

Financial assets are someone else's liability or equity claim against them

- A checking account is an asset to the depositor, but a liability to the bank
- A mortgage is an asset to the bank, but a liability to the homeowner

Real assets (economic capital) are net assets in the aggregate – no offsetting liability

Balance Sheet

A balance sheet is a static depiction of the financial condition of an individual or institution

Usually done via a "T-account"

On left-hand side, show value of all assets

On right-hand side, show value of all liabilities

Net worth is the difference, shown on the right-hand side. This is a liability, in a sense, to yourself (or to the owners)

T-ACCOUNT: HOMEOWNER BALANCE SHEET

(All amounts in USD)

ASSETS		LIABILITIES & EQUITY	
Home *(Market value)*	\$100,000	Mortgage Loan *(Amount Owed)*	(\$80,000)
Stock Shares	\$50,000	Homeowner Equity *(Assets – Liabilities)*	\$90,000
Savings Account	\$20,000		
TOTAL ASSETS	**\$170,000**	**TOTAL LIABILITIES & EQUITY**	**\$170,000**

Calculated as:
Total Assets – Total Liabilities
\$170,000 – \$80,000 = \$90,000

Assets = Liabilities + Equity
\$170,000 = \$80,000 + \$90,000

Income Statement

A balance sheet is a stock concept

An income statement is a flow concept

- It shows the income and expenses (during a period of time)
- The difference is profit/loss

Dynamically, profit can augment equity or be paid out to owners (as dividends)

Debt and Equity

Debt contracts provide funding in exchange for a contractual promise to repay principal with some interest

- Repayments are typically fixed and at predetermined times ("fixed income")

Equity represents an ownership claim on assets. Equity holders (i.e., stock holders) receive residual claims on earnings after debt obligations are paid

Debt holders are <u>senior</u> claimants on assets (i.e., they get paid first in the event of liquidation / closure)

Firms finance themselves by issuing debt and/or equity. Much of the time, bonds (debt) and stocks (equity) can then be traded on secondary markets

Leverage

Leverage measures the extent to which borrowed funds (i.e., liabilities) finance assets

- e.g., if you finance the purchase of a \$100,000 home with an \$80,000 mortgage loan, you are levered
- In this example, you are financing the \$100,000 home with \$20,000 of equity (your own funds, i.e., a liability to yourself)

Leverage ratio: $\frac{assets}{equity}$ (or sometimes $\frac{debt}{equity}$)

- $\frac{assets}{equity} = 1 + \frac{debt}{equity}$

Insolvency

Insolvency: negative net worth. Individual or institution is unable to meet its obligations

Doesn't necessarily mean an entity can't continue operating if it has enough cash flow (liquidity)

Bankruptcy is a legal process of paying off liabilities and reorganization. This is a way to deal with insolvency; it is not insolvency

Liquidity

Liquidity is the ability to convert an asset into an accepted means of payment quickly, reliably, and without incurring a substantial loss

"Cash" is the most liquid asset – it is the medium of exchange

A house is not very liquid – there are significant transactions costs and may have to accept a low price to sell (liquidate) it quickly

Short-term government bonds are highly liquid – there is a large, active market, so easy to convert to cash at fair value

Shares of publicly traded stock have high market liquidity – active market, few transactions costs associated with selling. But price fluctuates substantially, so lots of uncertainty as to how much purchasing power you can get on short notice

Fire Sales

Fire sales are situations in which an individual or entity is facing a liquidity problem

They don't have cash, and need to sell assets to raise cash

Selling illiquid assets quickly might mean having to accept low prices

Particularly problematic when there is a systemic liquidity crunch where many institutions are trying to sell assets at the same time

This can result in a liquidity problem becoming a balance sheet insolvency problem

Financial Crisis

A financial crisis is not just a situation of declining asset prices

A crisis is really a situation in which there is a "run" on short-term liabilities of banks or other bank-like financial institutions (Gorton-Diamond definition, which we will use)

The run creates liquidity pressures, which induces fire sales

This leads to a system-wide de-leveraging and an evaporation of credit (and corresponding decline in aggregate demand)

"Financial crises are everywhere and always a problem of short-term debt." – Doug Diamond

Our Focus is Mostly on Domestic, But . . .

Sovereign debt crises often have very much the same flavor as domestic financial crises

- Governments often raise funds via borrowing; especially problematic if the borrowing is short-term
- Principal asset of governments: the ability to tax and issue currency

“Rollover crises” can lead to inflation, currency depreciation, financial repression, and private-sector losses that lead to major recessions

Financial Crises in History

We have had periodic financial crises as long as we have had financial intermediation

The types of short-term debt and the institutions change over time, but the fundamentals are the same

- 19th century (pre-Fed): banknotes, deposits and commercial banks
- Great Depression (post-Fed): deposits and commercial banks
- Great Recession: repurchase agreements and commercial paper and non-bank financial institutions

Financial Crises Have Real Economic Costs

Recessions associated with a financial crisis are typically deeper and longer than those without

- Bech, Gambacorta, and Kharroubi (2014, *Internatinal Finance*). Link
- Terrones, Scott, and Kannan (World Economic Outlook, IMF, 2009). Link
- Jorda, Schularick, and Taylor (2013, *Journal of Money, Credit and Banking*). Link

Gorton: Susceptibility to Crises is Structural

Developed, diversified modern economies need financial intermediation

One of the most important roles of financial intermediation: liquidity transformation (or maturity transformation)

- Intermediaries finance long-term, illiquid investments but provide short-term, liquid assets that individuals and businesses desire

The "system" evolves and changes with technology and in response to regulations

The details change, but the underlying susceptibility to crises is always there

Hard to eliminate altogether. Best we can do is to (i) recognize the structural susceptibility and (ii) have institutions and policies that are built around this and not too focused on the details