

# Financial System: Shock Absorber or Amplifier?

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# Introduction

- Why is banking so heavily regulated?
  - Consumer protection (minor)
  - To prevent financial crises (major)
- Banking regulation is special in that there is not wide agreement on the market failures the regulation is designed to correct

*Understanding Financial Crises*

F. Allen and D. Gale, Oxford University Press,  
2007, Clarendon Lectures in Finance

# Introduction (cont.)

- Many banking regulations were originally introduced as a reaction to the banking crises in the US in the 1930's – empirically based regulation
- Banking crises were eliminated but intervention went too far and prevented the financial system from allocating resources
- With financial liberalization starting in the 1970's banking crises returned

# Introduction (cont.)

- Many studies such as Boyd, Kwak, and Smith (2005) find that the costs of crises vary significantly from being almost costless to very substantial with the average being between 63 and 302% of real per capita GDP
- But what are the costs of regulation?
- Are crises always bad?
- What exactly are the market failures?

# Panics vs. fundamentals

- There are two longstanding explanations of financial crises
  1. Panics (Kindleberger (1978), Bryant (1980), Diamond and Dybvig (1983))
  2. Fundamentals (Mitchell (1941), Gorton (1988), Chari and Jagannathan (1988), Allen and Gale (1998, 2004a))

# Panics

- Financial crises as self-fulfilling prophecies – multiple equilibria (Diamond and Dybvig (1983))
- Equilibrium selection?
  - Sunspots
  - Global Games (Carlsson and van Damme (1993), Morris and Shin (1998), Rochet and Vives (2004), Goldstein and Pauzner (2005))
  - Empirical evidence on the relevance of global games (Chen, Goldstein, and Jiang (2007))?
- Lack of a widely accepted equilibrium selection mechanism is a significant problem for policy analysis of panics

# Fundamentals

- Gorton (1988) found evidence that in the US in the 19<sup>th</sup> Century when a particular leading economic indicator (the liabilities of failed businesses) reached a critical level suggesting a coming downturn, a financial crisis occurred
- Allen and Gale (1998, 2004a) model financial crises by having a leading economic indicator that provides public information about bank asset returns
  - High returns do not cause a problem
  - Low returns cause a crisis

# Panics vs. fundamentals: Empirical evidence

- Gorton (1988) and Calomiris and Gorton (1991) provide evidence that in late 19<sup>th</sup> Century crises in the US were caused by fundamental shocks
- Calomiris and Mason (2003) undertake a detailed econometric study of four crises in the 1930's and conclude that three were caused by fundamental shocks while one was panic-based
- Probably both are important but maybe fundamentals more so

# What are the market failures?

- Allen and Gale (2004a) develop a general equilibrium model to identify market failures in financial intermediation
- Given the lack of a widely accepted theory of equilibrium selection they focus on fundamental shocks as the driver of financial crises – only *essential* crises are considered
- Model considers banks (or more generally financial intermediaries) and markets

# Financial intermediaries and markets

- Role of financial intermediaries
  - Provide liquidity insurance to consumers against idiosyncratic liquidity shocks
- Role of markets
  - Allow financial intermediaries to share aggregate liquidity and return shocks

# Complete vs. incomplete contracts and markets

- Complete contracts between financial intermediaries and consumers allow contingencies on aggregate shocks while incomplete contracts such as deposit accounts do not
- Complete markets involve state-contingent Arrow securities (or their equivalent) while incomplete markets mean that the amount of consumption in each possible aggregate state cannot be independently varied

# Complete Markets

**Result:** When markets are complete and

(i) contracts are **complete**, the allocation is incentive efficient

(ii) contracts are **incomplete**, the allocation is constrained efficient

- Crises do not occur with complete contracts since banks can balance assets and liabilities state by state but they do occur with incomplete contracts and are optimal
- The invisible hand works and no regulation is needed
- The financial system acts as a **shock absorber**

# Incomplete markets

- If there are incomplete markets then there is a market failure because liquidity provision is inefficient
- When markets are complete:
  - Prices are determined ex ante
  - the price system ensures there is risk sharing
- When markets are incomplete:
  - Prices are determined ex post by the available liquidity or in other words the “cash in the market”
  - Equilibrium asset prices must be volatile to provide incentives for liquidity provision, and this can lead to negative risk sharing and costly and inefficient crises

# The symptoms

Models with incomplete markets and inefficient liquidity provision are consistent with

1. Financial fragility: Allen and Gale (2004b)
  2. Contagion: Allen and Gale (2000a), Allen and Carletti (2006, 2007)
  3. Bubbles: Allen and Gale (2000b)
- The financial system acts as an **amplifier**

# The solution (?)

- Role of monetary policy in solving the market failure of inefficient liquidity provision
- Problem of liquid versus illiquid markets
- LTCM
- Capital allocation within financial intermediaries as the cause of illiquidity
- Are markets complete or incomplete?