Financial Crisis: How? Why?

Helen Roberts
University of Illinois at Chicago
Clinical Associate Professor in Economics and Associate Director, UIC Center for Economic Education
Real GDP Growth

Compounded annual rates of change

2006  2007  2008  2009
Industrial Production

Percent change
Unemployment Rate

Percent of labor force

10.2 —
9.2 —
8.2 —
7.2 —
6.2 —
5.2 —
4.2 —

2006 2007 2008 2009
Consumer Price Index

Percent change

2006 2007 2008 2009
Commercial Paper Outstandings
(Weekly, seasonally adjusted)
Standard and Poor's 500 Index with Reinvested Dividends

Percent change from year ago
It’s not just the U.S.A.

- IMF is predicting first decline in world growth in 60 years, $-\frac{1}{2}$ percent

- Rich and poor countries alike are suffering

- Production and labor market effects differ across countries
2007-2009: A World Recession

Dark Red: Countries in official recession (two consecutive quarters)
Light Red: Countries in unofficial recession (one quarter)
Dark Orange: Countries with economic slowdown of more than 1.0%
Light Orange: Countries with economic slowdown of more than 0.5%
Pink: Countries with economic slowdown of more than 0.1%
Blue: Countries with economic acceleration
(Between 2007 and 2008, as estimates of December 2008 by the International Monetary Fund)
Gray: N/A
Before this year the world economy had been in recession on four occasions in the past half century, if recession is defined as a drop in output per person. An analysis in the IMF’s latest *World Economic Outlook* shows that, when exchange-rates are measured using purchasing-power parity, world output dipped sufficiently to drag down average output per person in 1975, 1982 and 1991. But on virtually every measure, this year’s downturn is much deeper than previous troughs. Global output per head is set to fall by 2.5% this year, compared with an average of 0.4% in the previous global recessions. Global trade is set to shrink by almost 12%. In previous global recessions trade merely stagnated.
Global recessions

% change

- Average (1975, 1982, 1991)
- 2009 forecast

- Total trade
- Industrial production
- Capital flows
- GDP* per person
- Oil consumption
- Unemployment†

Source: IMF  *PPP weighted  †Percentage point increase
Why and How
Financial Crisis Activity

* Thanks to Curt Anderson, University of Minnesota, Duluth
Slippery Economics Casino

You have 3 options:

- Option 1: Don’t Play

- Option 2: Flip a coin; if heads you get $5 and if tails you lose $5

- Option 3: Flip a coin; if heads, you get $100 and if tails you lose $100
Case 1

- You may choose Option 1 (Don’t Play) or Option 2 ($5), but NOT Option 3.
- Hands: How many for Option 1?
- Hands: How many for Option 2?
Case 2

You may choose any option.

Hands: How many for Option 3?

Hands: How many for Option 2?

Rest for Option 1.
You may choose any option, but you receive (or pay) 20% of the amount stated.

- Hands for Option 3 (Win/Lose $20)?
- Hands for Option 2 (Win/Lose $1)?
- Rest for Option 1.
Case 4

You may choose any option, but you receive (or pay) 5% of the amount stated.

- Hands for Option 3 (Win/Lose $5)?
- Hands for Option 2 (Win/Lose $0.25)?
- Rest for Option 1.
Case 5

You may choose any option, but you receive 5% of the amount stated or pay $0.

- Hands for Option 3 (Win $5/Lose $0)?
- Hands for Option 2 (Win $0.25/Lose $0)?
- Rest for Option 1.
What does it mean?

Normal economics behavior (responding to incentives) means people will move from no-risk Option 1 and low-risk Option 2 to high-risk Option 3 as we move from Case 1 to Case 5. The reasons are:

- Regulation
- Leverage
- Moral Hazard.
Regulation

- The changes from Case 1 to Case 2 indicate the effect of *regulation* (not allowing certain risky behaviors).

- Risk lovers will select Option 3 when they are allowed to do so, but the risk-averse will stay with lower-risk Option 2 or no-risk Option 1.
Leverage

The changes from Case 2 through Case 4 show the effects of higher degrees of leverage (your money at risk is only part of the whole risk).

- Higher leverage means less of your money at risk, so your potential loss is lower.

- Higher leverage means people are willing to play the riskier options (Options 2 and 3).
Moral Hazard

Movement from Case 4 to Case 5 indicates the effects of moral hazard (perverse or incorrect incentives).

- If there is no way to lose because someone will cover your losses (or bail you out) then any real risk is gone.
- Most people will select Option 3.
Leverage: Playing with Other People’s Money 1.0

Regulated Insurance Company

Assets: $1,000 m (quality/type regulated)
Debt (Liabilities): $ 750 m
Equity/Capital: $ 250 m
Debt/Equity Ratio: 3:1

Company could withstand a 25% decline in the value of its assets.
Leverage: Playing with Other People’s Money 2.0

FDIC-Insured Bank

Assets: $1,000 m (quality/type regulated)
Debt (Liabilities): $900 m
Equity/Capital: $100 m
Debt/Equity Ratio: 9:1

Company could withstand a 10% decline in the value of its assets.
Leverage: Playing with Other People’s Money 3.0

Unregulated Investment Bank or Insurance Company

Assets: $1,000 m
Debt (Liabilities): $ 970 m
Equity/Capital: $ 30 m
Debt/Equity Ratio: 32:1

Company could withstand a 3% decline in the value of its assets.
Timeline: 1980s

- 1982: Savings and Loans were deregulated—allowed to lend outside home mortgages
- 1989: S&L collapse due to risky and fraudulent real estate deals.
- Federal government provides bailout.
Timeline: 1990s

- 1994: Hedge funds (unregulated) including Long-Term Capital Management (LTCM) start.
- 1998: Russian default on debt causes massive losses for LCTM leading to ~$3.6 billion bailout by federal government.
- 1999: Freddie and Fannie relax mortgage requirements to encourage home ownership.
Timeline: 2000-2004

- 2001: Fed lowers federal funds rate to 1% due to 9/11 and recessionary economy
- 2002: Housing market booms with EZ terms and low-cost credit
- 2004: Investment banks (ML, GS, LB, BS, MS) get SEC to allow leverage increase from 12:1 to 40:1 without any oversight. Mortgage bundling rises.
Timeline: 2005-2006

- 2005: Mortgage brokers offer riskier loans (0% down, “teaser” rates, sub-prime) to feed banks’ demand for mortgages. All share assumption: house prices will rise; mortgages are safe so shaky mortgages are easy to refinance.

- 2006: Investment banks create securities (CMOs) and buy bond insurance based on mortgage bundles, all unregulated and very difficult to value.
Timeline: 2007-2008

- 2007: Housing market troubles (Oversupply? Lagging personal income growth?) lead to defaults on mortgages as they cannot refinance lower housing prices.

- 2008: Investment banks’ high leverage (>30:1) mean they don’t have cash to pay interest on mortgage-backed securities. Insurance companies’ high leverage (AIG) means they can’t cover losses on these bonds.
Backup Plan (Moral Hazard)

$700 billion bailout
The World’s Banks Could Prove Too Big to Fail—or to Rescue


New York Times
Off the Charts
By FLOYD NORRIS
Published: October 11, 2008
As the banking system quaked this week in many countries, one question was asked quietly: Can the governments afford it?
Banks versus Bank Holding Companies

- US: Bank short-term liabilities are 15% of GDP
- US: Bank holding companies may include investment banks with higher leverage
- Too big to fail?