The Economy

Lecture 21: The Great Recession

Module 10: Financial Crises in History

Columbia University | Summer 2020
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Table Of Contents

The US economy from 1950 to 2000

Great Recession

A. The causes of the financial crisis
B. Why was the damage so great?
C. Solutions: bailouts and regulations
D. Aftermath and legacy

The US economy from 1950 to 2000

US economy in the “golden age” – 1948 - 1973

- Post-World War II period is characterized by low unemployment, unusually high productivity growth and growth rate of capital stock, falling effective tax rate on corporate profits, falling inequality, and leadership in tech innovation.

- There was a change in policymaking and regulation:
  - Governments signaled that they were ready to step in to prop up AD in case of another crisis;
  - Expansion of automatic stabilizers.

- Mutual agreement: unions did not resist tech innovation, and firms kept up high investment to keep unemployment low.

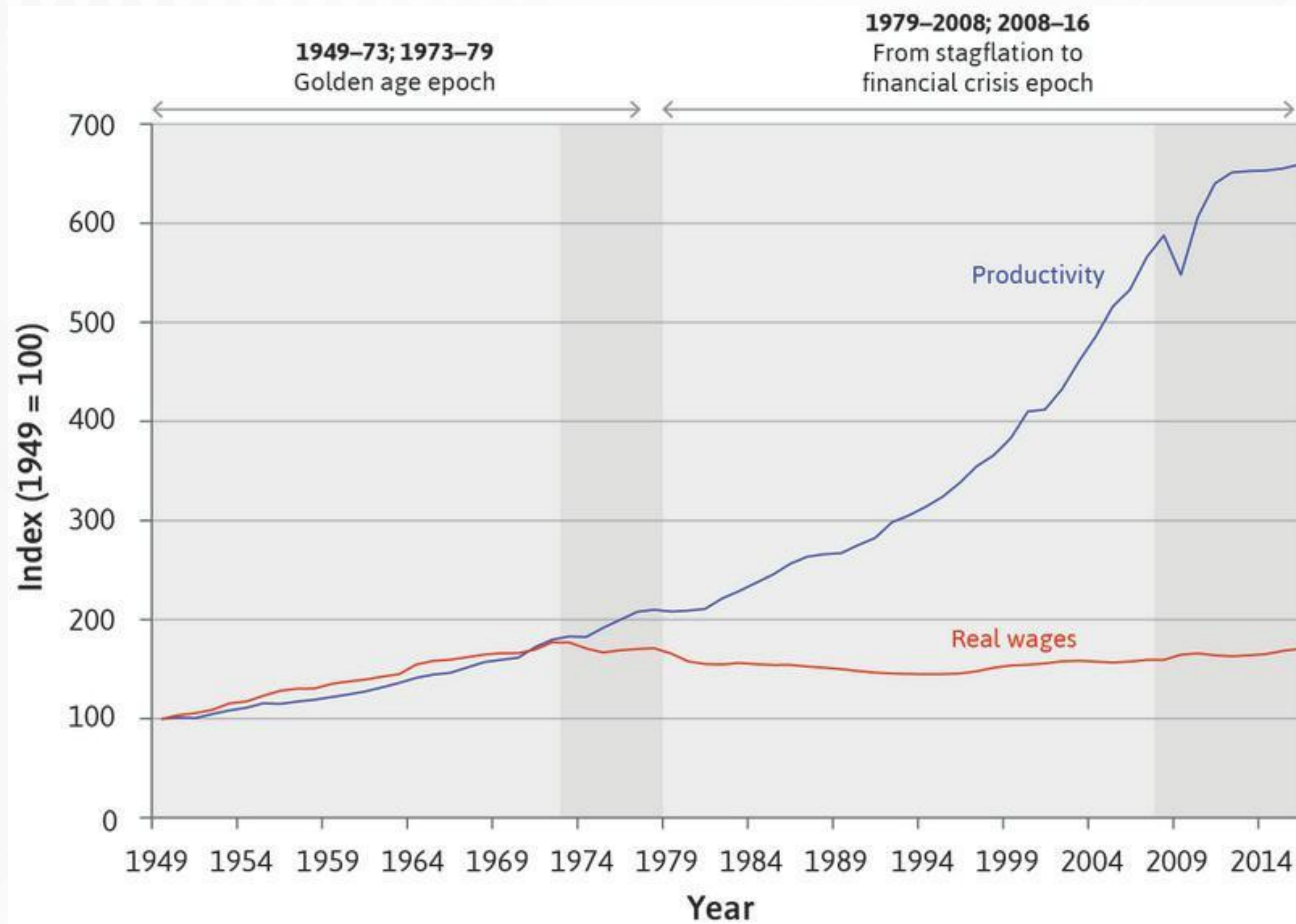
Stagflation of the 1970's

- Other countries are beginning to catch up technologically, so it becomes more difficult to extract rents.
- Increased strife between employers and their workers over wages and benefits.
- First **oil shock** in 1973:
  - Fall in supply of oil leads to an increase in commodity prices and increasing input costs.
  - Profits fall, investment and tech innovation stalls, firms increase prices and fire workers → inflation and rising unemployment, or "stagflation".

New economic era

- Keynesian economics, which helped to address the Great Depression, failed to predict or provide answers to the 1970's and 1980's stagflation recessions.
- Policymakers and economists turn to **neoclassical economics** and **supply-side reforms**:
  - Restrictive monetary and fiscal policy that prioritized stable inflation over low unemployment;
  - Cutting into unemployment benefits, reducing trade union power through legislation.

Split between wages and productivity



Source: Figure 17.17 in *The Economy*

New economic era

- **The stagflation** ushered in a period of **the great moderation**, characterized by low and stable inflation and falling unemployment.

- The period was also characterized for falling real wages, sharply rising inequality (as marginal tax rates on top income and wealth declined), and rising levels of debt of households and banks.

Types of recessions

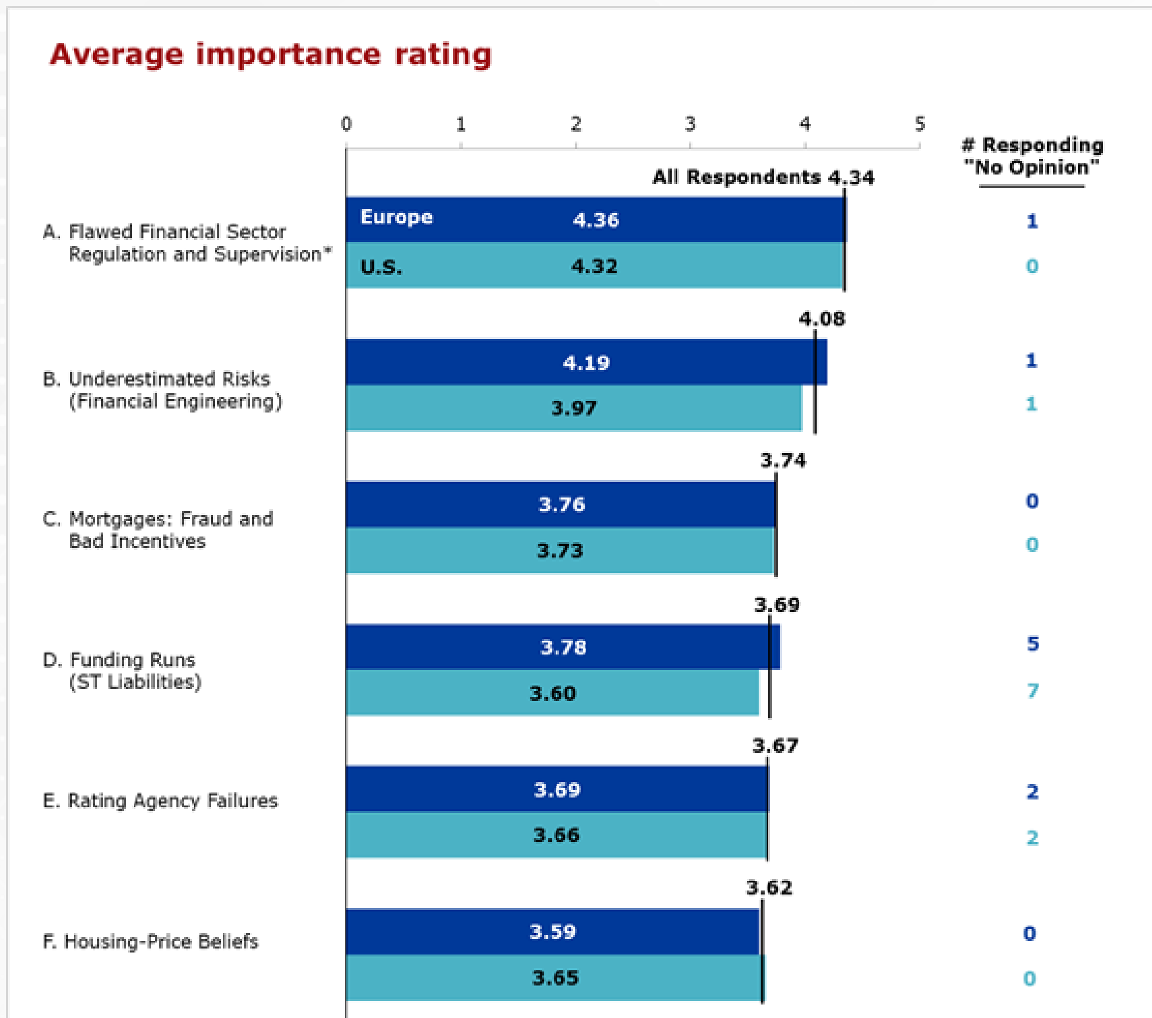
- Recessions are caused either by **supply-side** or **demand-side** shocks.

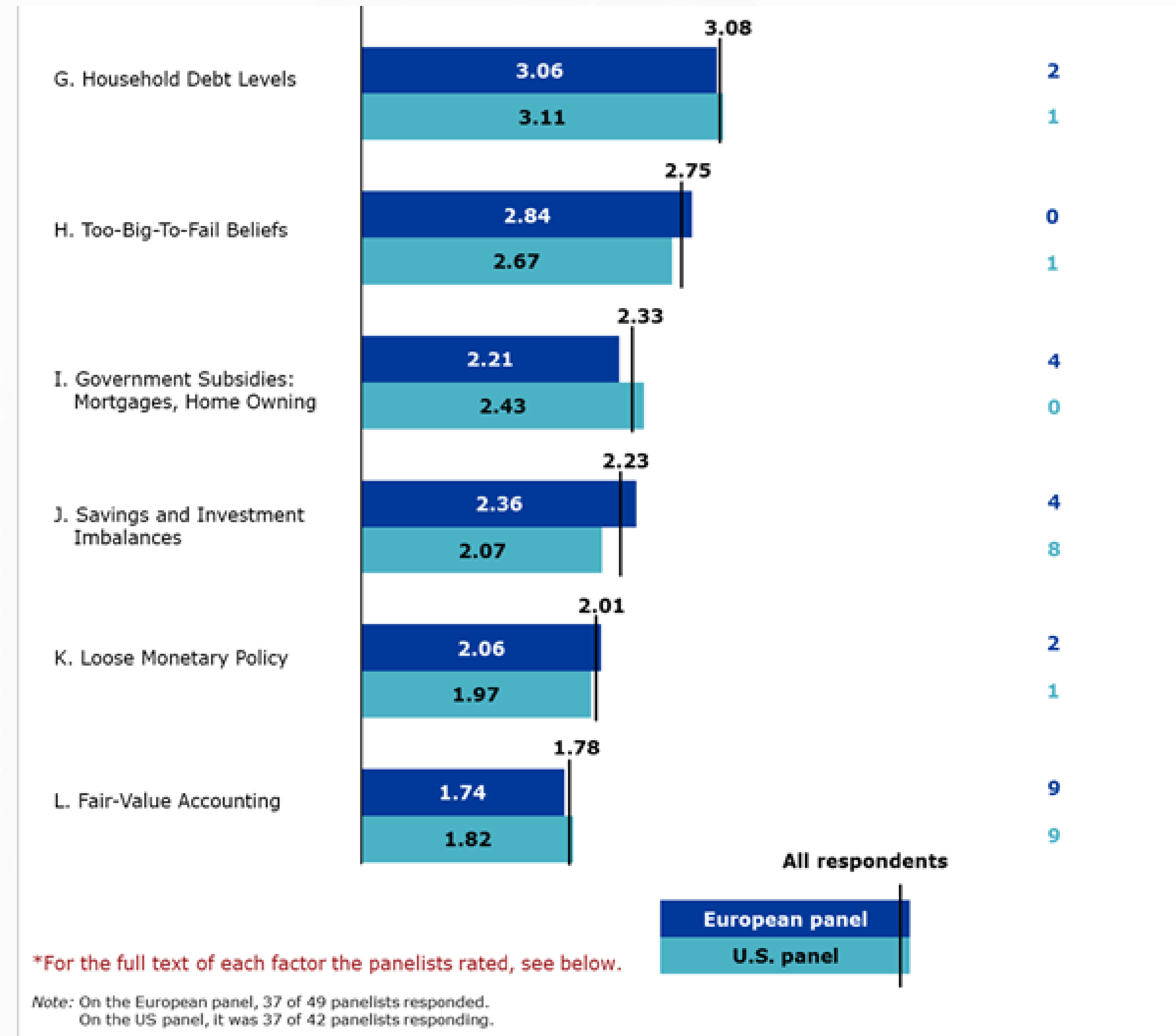
Demand-side shocks	Supply-side shocks
Examples: Fall in consumer and investor confidence, increased credit constraints on households that result in lower consumption	Examples: Increase in the prices of commodities like oil.
Falling prices and higher unemployment due to lower demand	Higher prices and higher unemployment due to rising input costs
In history: Great Depression, Great Recession	In history: 1970's and 1980's recessions

The Great Recession

A. The causes of the financial crisis

What were the main causes of the Great Recession?





Source: The University of Chicago has a panel of top economists in the U.S. and Europe who they asked to rate the importance of 12 potential factors contributing to the 2008 global financial crisis: http://www.igmchicago.org/surveys-special/factors-contributing-to-the-2008-global-financial-crisis

Home Mortgages

Until the 1980s, home mortgages worked as follows:

1. Prospective homeowner wants to buy a home and approaches a bank for a loan.
2. Bank lends money to the homeowner, who pays bank back in monthly installments.
3. If the borrower defaults, home goes into foreclosure, bank owns it and sells it.

Because banks assume risk in that some of their borrowers may default, they have an incentive to be cautious and well-informed about who they give loans to:

- They require proof of income, a good credit score, collateral (down-payments).

In the 1980s, there was massive shift toward a different model that involved **securitization**, a way to transfer risk from traditional banks to other investors.

Fannie Mae and mortgage backed securities (MBS)

YouTube video: https://www.youtube.com/watch?v=gCuU1g2V2XA

Securitization

- **Securitization** is a way to transfer risk from traditional banks to other investors by pooling together all types of debt and selling those cash flows to investors as **securities**.
  - A homeowner receives money from the bank to buy a home.
  - The bank sells the mortgage to an organization like **Fannie Mae** (Federal National Mortgage Association) or **Freddie Mac** (Federal Home Loan Mortgage Corporation), both guaranteed by the US government.
  - These entities issue **mortgage-backed securities** (MBS) by packages home loans from many banks and selling them as debt to investors, like a bond.
  - As homeowners repay their loans, investors in MBS receive periodic payments, like bond coupons.
  - If one homeowner in an MBS defaults, the value of the MBS is hardly affected.

Securitization and Moral Hazard

- Securitization is a perfect example of what economists call **moral hazard**.

If the originating bank is holding the mortgage:

- Bank is liable for the **risk** of borrower default.
- Has incentive to carefully assess borrower creditworthiness, to decrease the risk of default.

If the originating bank is selling the mortgage to Fannie Mae/an investor:

- Bank is **no longer** liable for the **risk** of borrower default.
- Bank **does not** have incentive to carefully assess borrower creditworthiness, which is costly.
- Investors *think* the bank has appropriately assessed the borrowers, and it would be costly for them to check this. Their profits are, however, affected.

Securitization and Moral Hazard

- **Moral hazard** is a situation in which one party to an interaction (the bank) decides on an action that affects the profits or well-being of another (Fannie Mae, Freddie Mac, investors in MBS), but the affected parties can't control the action through a contract.
- Associated with the idea of *hidden action*.
- **Moral hazard** typically arises in markets with insurance, where one party is the insurer (e.g. Fannie Mae, investors) and the other is the insured (e.g. bank).
- Other examples of moral hazard can be found in car insurance markets, health insurance markets, and so on.

Other examples of moral hazard during the financial crisis

- **Bailouts and banks**
  - When banks expect to be bailed out by the federal government in the event of a failure, they are likely to take risks that they would have avoided if they had to bear the full cost of a bad outcome, unbeknownst to customers and taxpayers.
- **Rating agencies and investors**
  - The role of the "Big Three" global credit rating agencies, Standard and Poor's (S&P), Moody's, and Fitch Ratings, is to provide global investors with an informed analysis of the risk associated with debt securities. But their profits came from the financial firms who paid for those ratings, so they're likely to provide favorable ratings unbeknownst to investors.
- **Federal Deposit Insurance and depositors**

Key events that led up to the financial crisis

Post 2001

Post-9/11 and "dot com" crises

Fed Chair Alan Greenspan sets the interest rate to an all-time low of **~1%**

1. Banks borrow enormously and lend out to households

Demand for mortgages increases and **banks feel pressure to lower the bar** for who can qualify

2. Investors do not want to invest in government bonds at 1%

+

Excess savings in China and other countries

Domestic and foreign investors heavily buy US mortgages from banks (historically safe investment)

Key events that led up to the financial crisis

Demand for mortgages increases and **banks feel pressure to lower the bar** for who can qualify

+

Congress mandates that **55%** of loans that the Federal National Mortgages buys must be from people at or below median income (up from 30% of loans)

↓

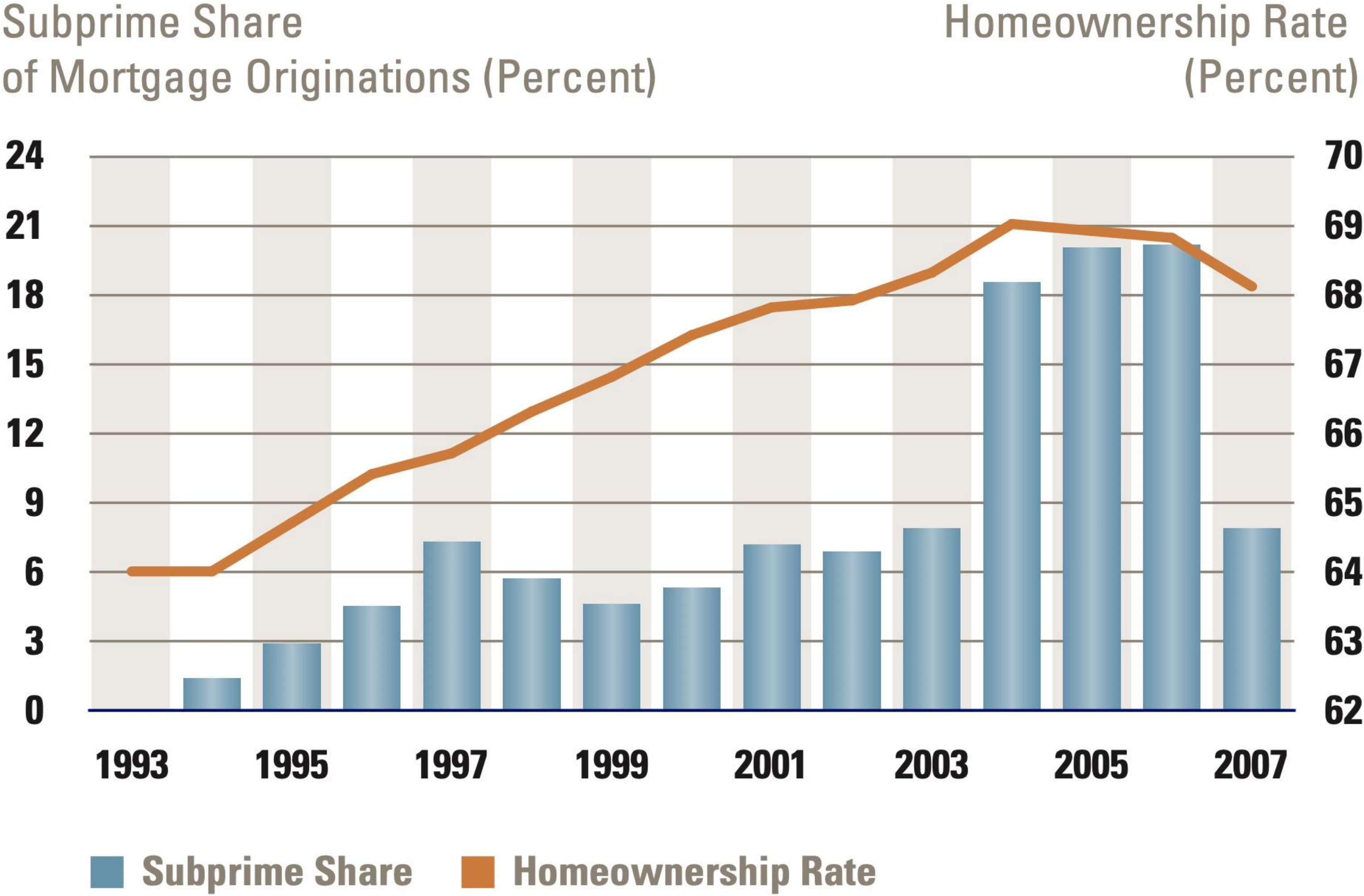
By 2007, outstanding debt grows to **~200%** of US GDP (versus 100% in 1980)

And a lot of it is much riskier debt, too.

Subprime lending

- Banks become much less careful about to whom they originate loans.
  - The **prime rate** is the interest rate that commercial banks charge their most creditworthy customers
  - **Subprime loans** have interest rates that are higher than the prime rate. Subprime borrowers generally have low credit ratings or are perceived of as likely to default on a loan.
- Even though subprime MBSs are obviously riskier than prime MBSs, the historic rating of MBSs is high, so credit rating agencies give their highest ratings to the new subprime MBSs too.

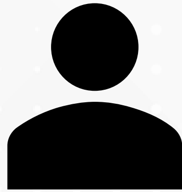
US subprime lending expanded significantly between 2004-2006



Source: US Census Bureau, Harvard University State of the Nation's Housing Report-2008

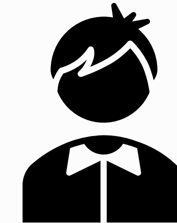
Housing Prices

- Demand for houses increases dramatically and housing prices skyrocket.



Homeowners love this because the value of their equity is increasing.

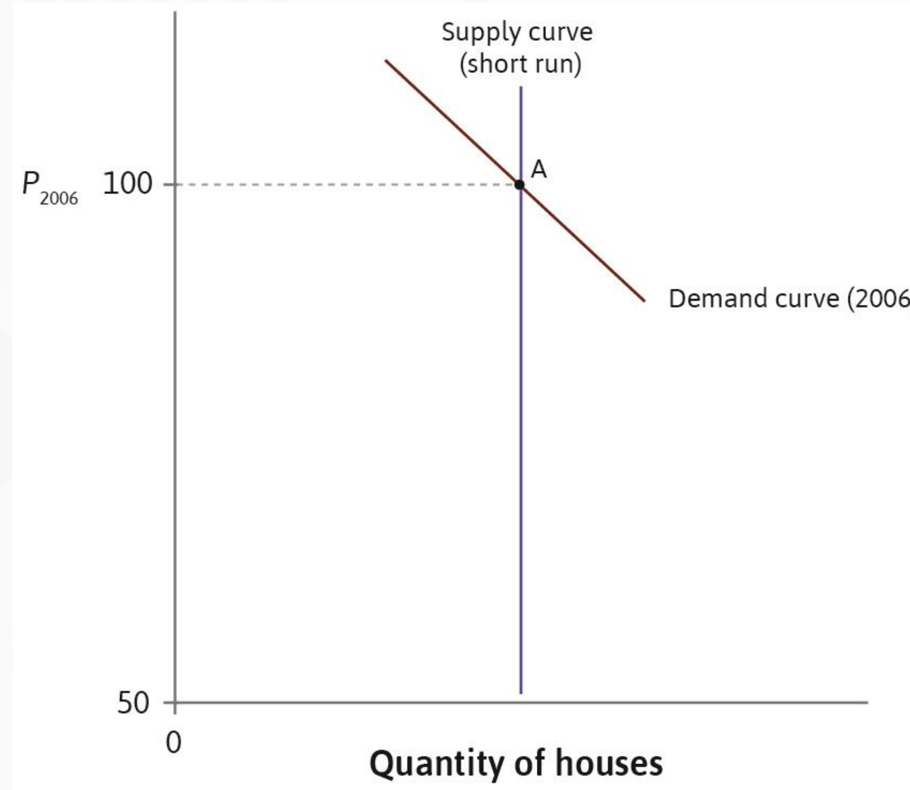
Banks love this because more people want to take out loans.



Investors love this because it makes MBS seem like an even better investment.

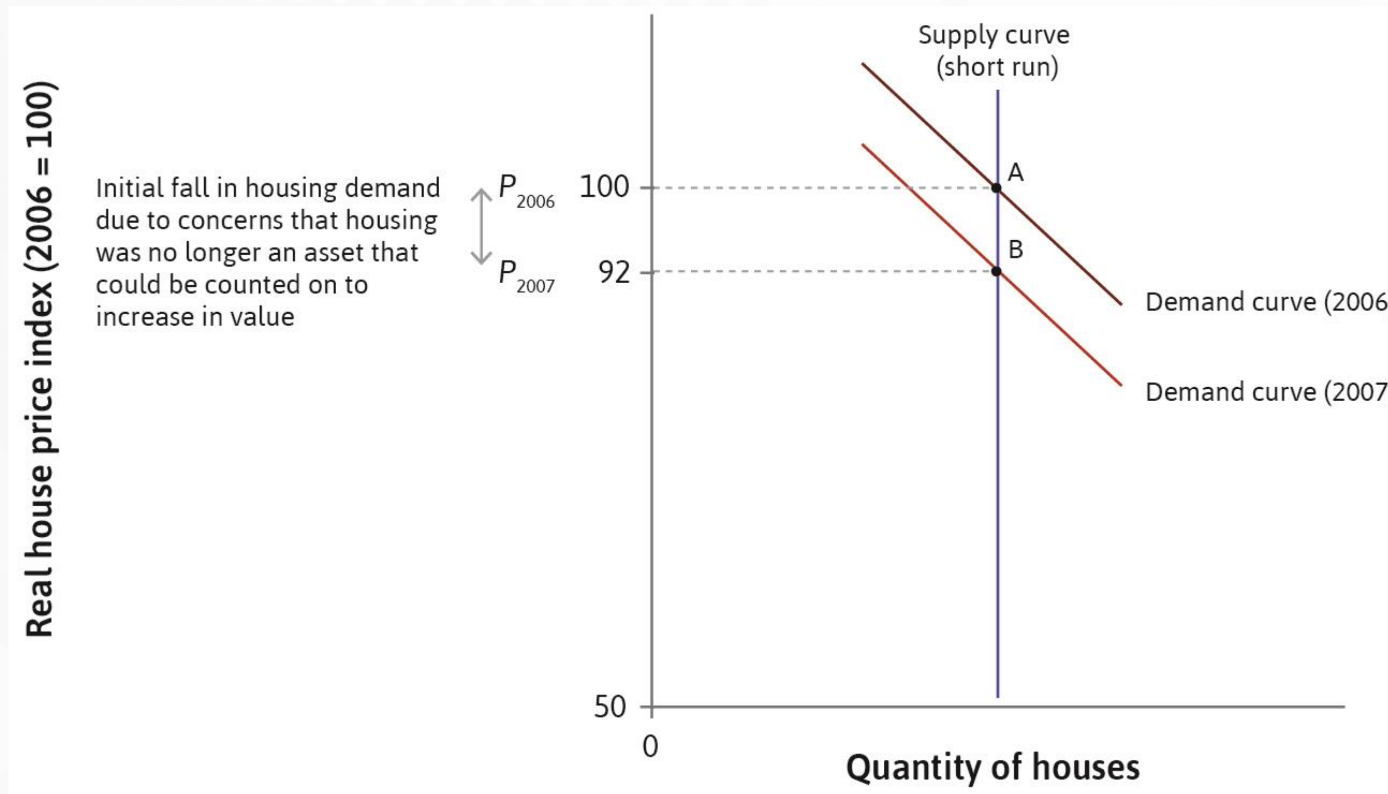
- But then subprime homeowners begin to default on their mortgages, and eventually the growth of homeowner defaults outpaces the growth of new potential homebuyers.

Demand for housing at peak prices (mid-2006)



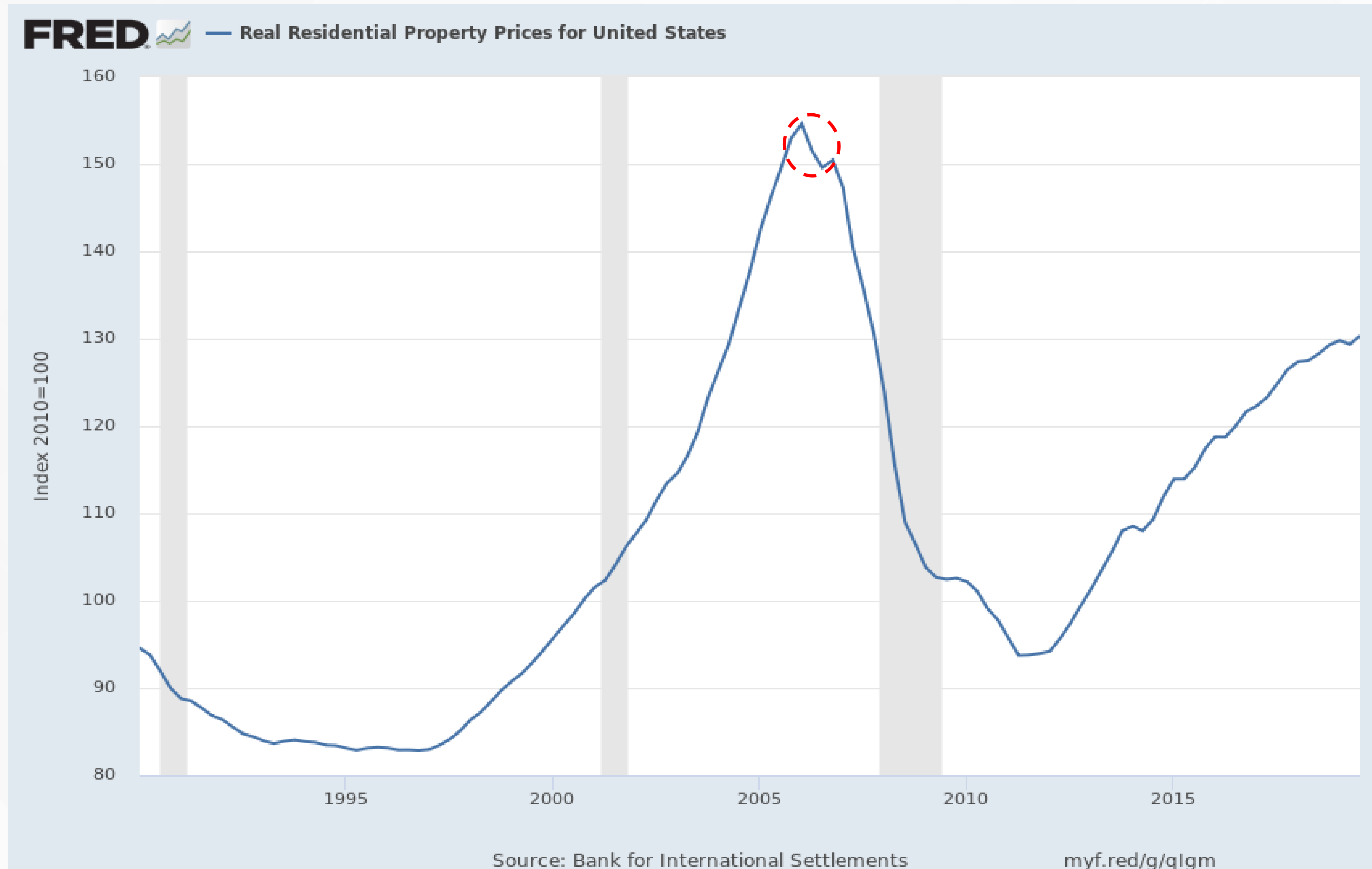
- When housing prices were rising, lenders increased access to loans by lowering borrowing criteria.
- **Financial deregulation** and government policy to extend loans to poorer households encouraged this behavior.
- Demand for housing shifted right as more households qualified for mortgages

A small initial fall in prices in 2007…



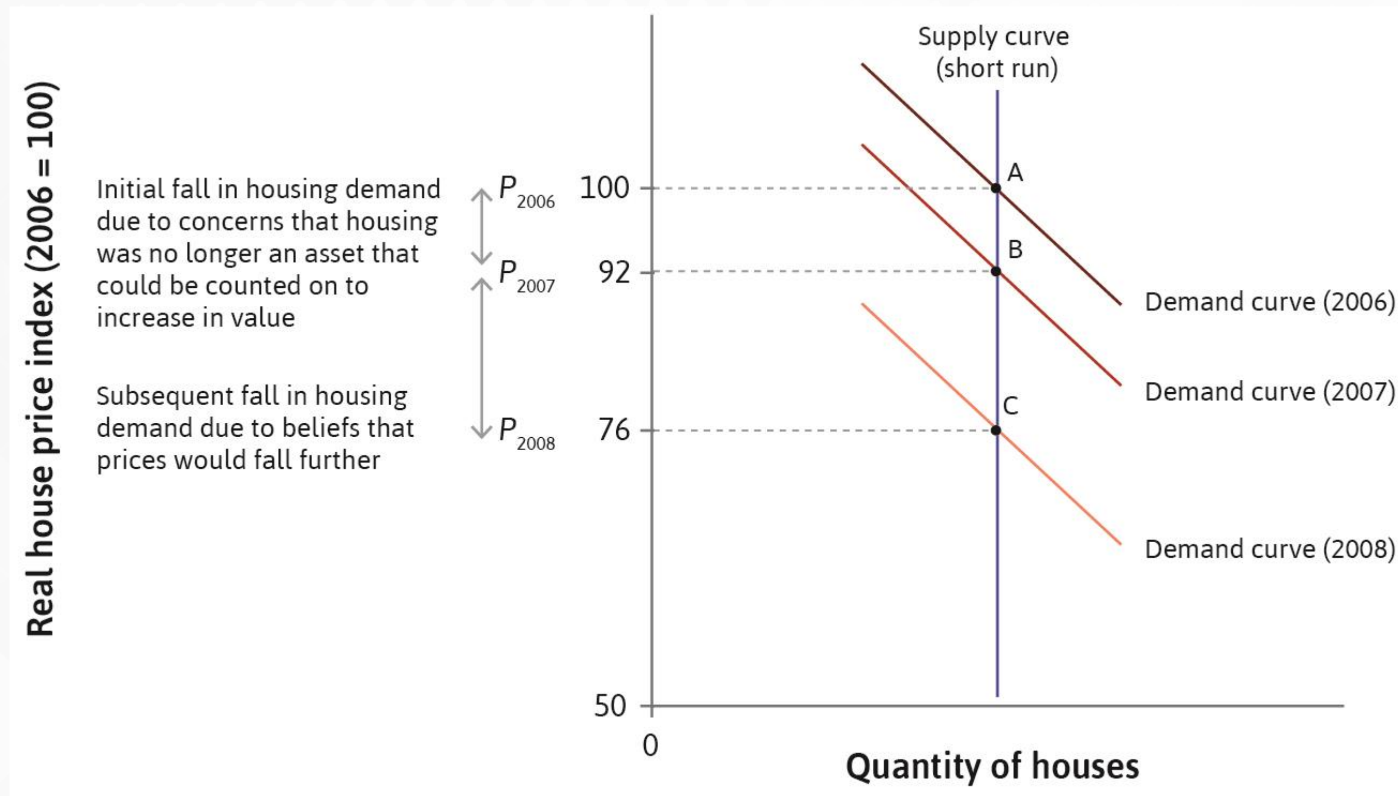
- House prices began to decline in 2007 as demand shifted downwards from A to B, pushing the house price index down to 92 from its peak of 100.

Real residential property prices – US, 1990 – 2020



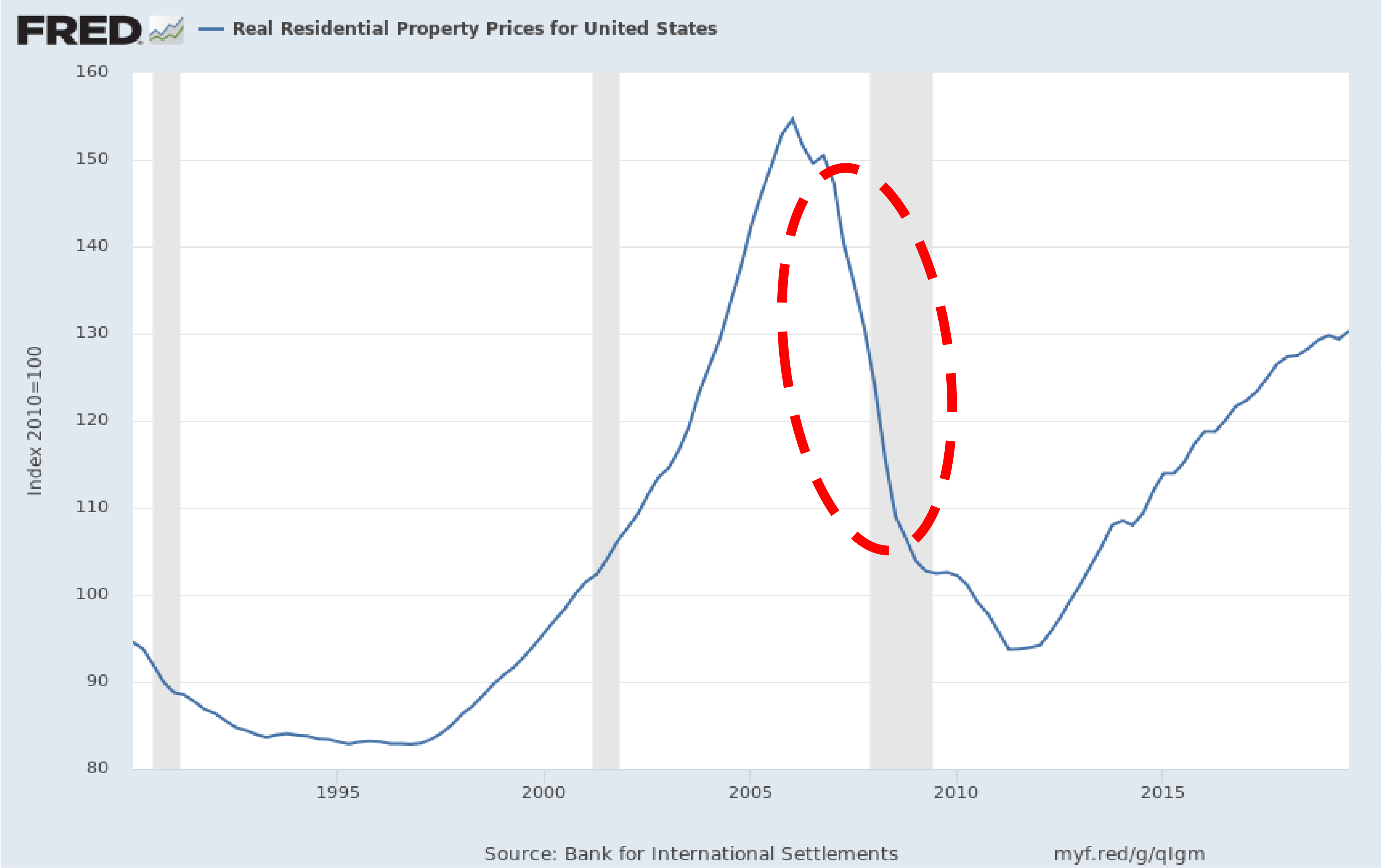
Source: https://fred.stlouisfed.org/series/QUSR628BIS#0

Led to a further collapse in demand



- The belief that house prices will always go up is no longer realistic.
- This change in beliefs resulted in the further downward shift in demand creating a new lower equilibrium value for house prices.

Followed by a collapse in demand

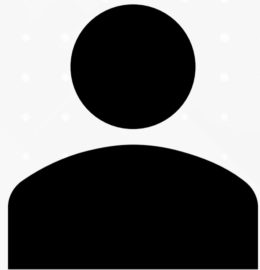


Source: https://fred.stlouisfed.org/series/QUSR628BIS#0

B. Why was the damage so great?

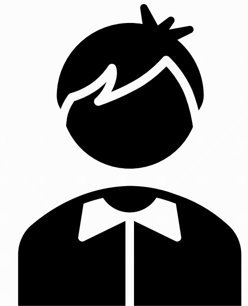
Why was the damage so great?

- Have to consider all of the entities involved:



Homeowners

Banks



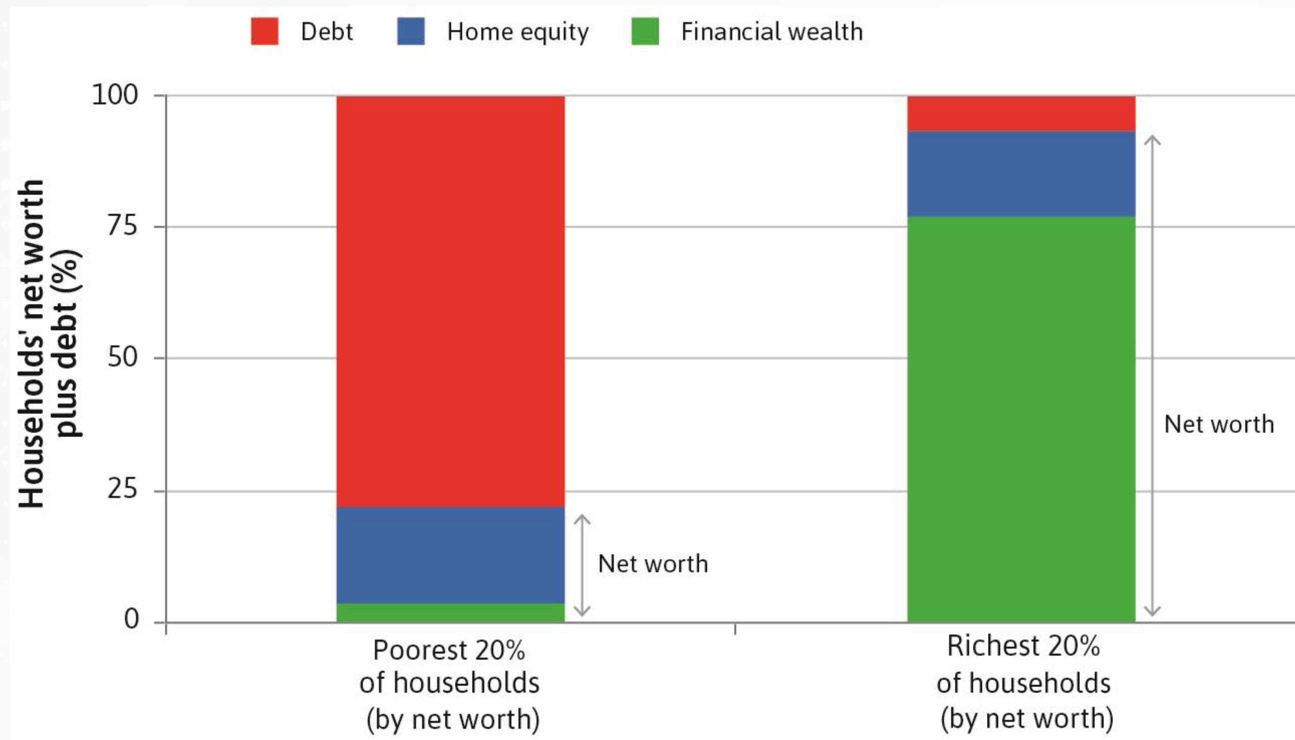
Global investors

Households: why did spending in the US decline so much?

- **Financial accelerator**: same mechanism at work during the Great Recession as during the Great Depression.
- As prices of houses fell, the value of households' assets and collateral fell too.
- If the value of collateral falls, people can and do borrow less money for other purchases, such as consumer durables.
- As beliefs about housing prices continued to drive demand and prices down, the value of collateral and ability to borrow fell even more.
- This is how household decisions led to a drop in aggregate demand.

Why did US spending decline so much?

Household wealth and debt in 2007: Bottom and top quintiles

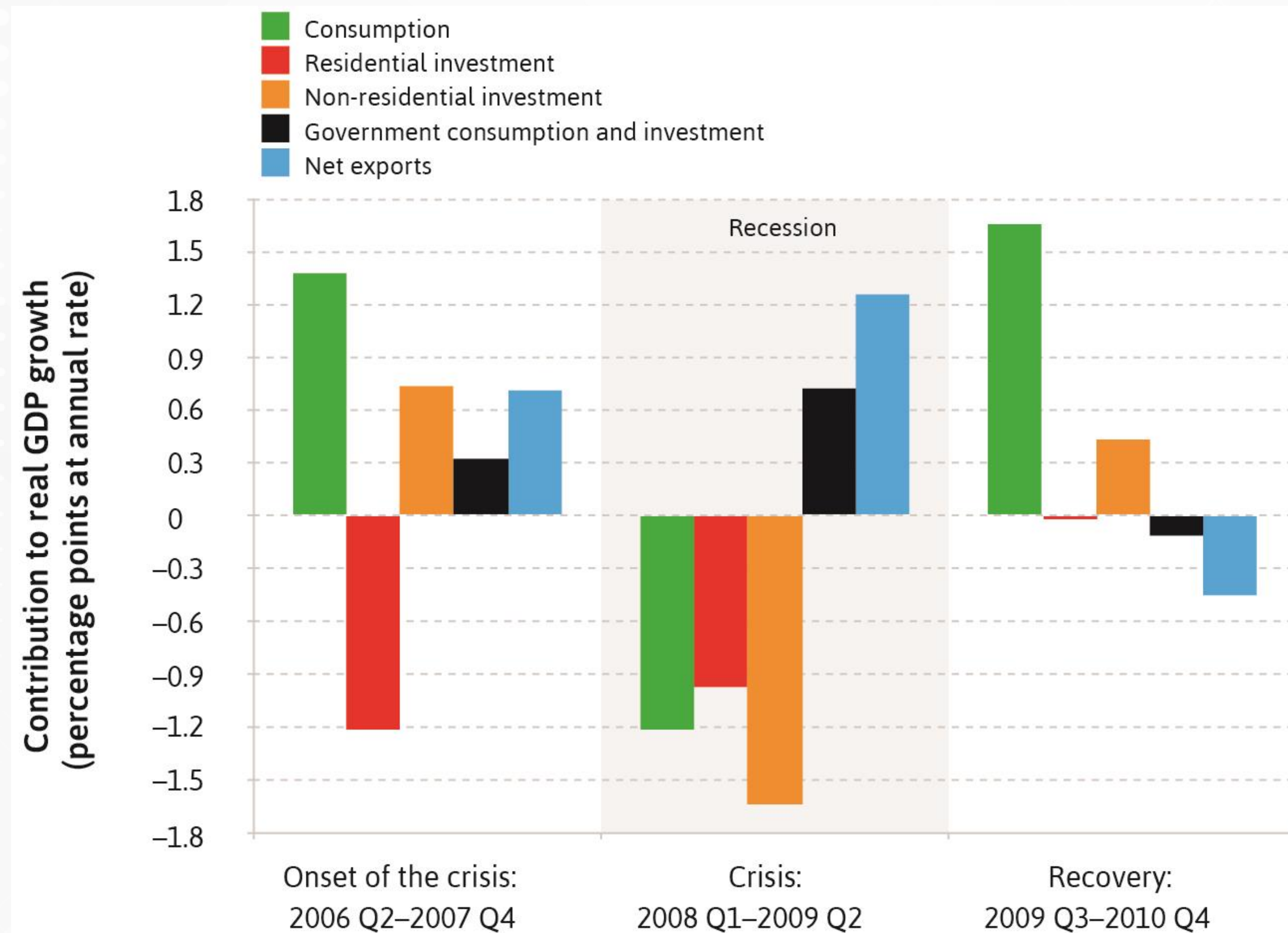


Source: Figure 17.20 from *The Economy*

"The sharp decline in home prices starting in 2007 concentrated losses on people with the least capacity to bear them, disproportionately affecting poor homeowners who then stopped spending. What about the tech crash? In 2001, stocks were held almost exclusively by the rich. The tech crash concentrated losses on the rich, but the rich had almost no debt and didn't need to cut back their spending."

Amir Sufi & Atif Mian

The poor cut spending much more because of limited assets



Source: Figure 17.26 from *The Economy*

Banks: why did they get into so much trouble?

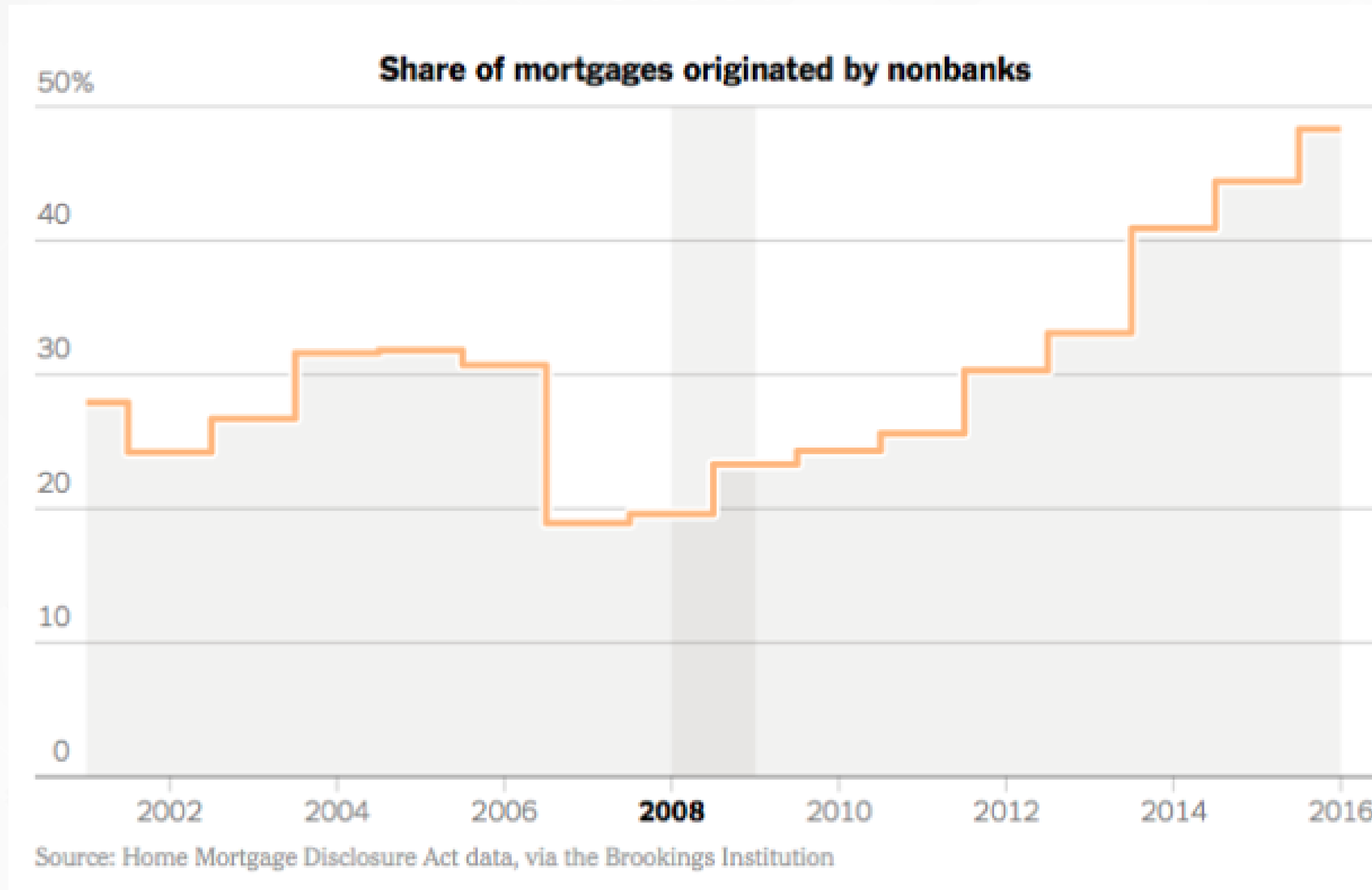
- **Leverage**
  Heavy reliance on leverage rather than equity to finance operations makes banks vulnerable to even small drops in investment value.
- **Incentives to undertake risky behavior**
  Tax incentives to borrowing, low interest rates on loans, rising demand for mortgages.
- **Moral hazard**
  Bailouts for banks, rating agencies and investors, insured deposits.
- **Deregulation of the financial sector**
  Increased deregulation of banks’ activities and the shadow banking system.

The shadow banking system

- According to Ben Bernanke, the Fed Chair at the time of the crisis, "**Shadow banking…** comprises a diverse set of institutions and markets that, collectively, carry out traditional banking functions — but do so outside, or in ways only loosely linked to, the traditional system of regulated depository institutions."
- The shadow banking system consists of intermediaries that fall outside the realm of regulated banking.
- Also refers to unregulated activities by regulated institutions.
- Played a major role in the expansion of housing credit and continues to expand.

Bernanke, Ben S (8 November 2013). "The Crisis as a Classic Financial Panic". At the 14th Jacques Polak Annual Research Conference, Washington, D.C.: Board of Governors of the Federal Reserve System

A lot of debt now lurks in the “shadows” of the financial system



- Lending has grown (again) outside the traditional, more heavily regulated banking system.
- Entities like private equity firms, hedge funds and mortgage companies.
- Much harder for regulators, investors and banks to keep track of where the risks lie in this **shadow banking sector**, potentially allowing big problems to go undetected.

Global investors: why did the damage spread so far?

Interrelationships

- **Globalization:** subprime mortgages were held by financial institutions worldwide.
  - Example: German banks borrow from US money market funds to buy MBS.

- **New techniques for managing risk**: MBS, meant to spread the risk from mortgage lending, gets more institutions involved.
  - Before, banks make loans to home buyers and home buyers pay back banks.
  - Now, investment banks buy mortgages from lenders, bundle them together, and sell them to other investors (longer chain of transactions).

The collapse of Lehman Brothers

- In Spring 2008, the Federal Reserve arranged for Bear Stearns to be acquired by JP Morgan, providing support through guarantees rather than allowing it to fail.
- This intervention by the central bank conflicts with the principle that firms should be allowed or required to fail if they cannot meet their obligations.
- Fall 2008: Federal Reserve and others allowed Lehman Brothers to file for bankruptcy.
- Why did they let Lehman fail?
  - Believed a bankruptcy wouldn’t cause too much damage
  - Decided to send message that even important institutions should be subject to market discipline

Contagion and panic

- Panic sets in!
- Banks try to reduce their borrowing by selling their mortgages.
- Prices of mortgage-related securities decline.
- Banks’ equity (relative to debt) further declines.
- The trigger of failure of Lehman Brothers dramatically spreads the shock to the whole financial system and other financial markets.

C. Solutions: bailouts and regulations

How did the US government respond to the recession?

- Fiscal stimulus programs: **Economic Stimulus Act of 2008** and **American Recovery and Reinvestment Act of 2009**.
- Monetary policy: the Federal Reserve used both conventional and unconventional policy tools to deal with the recession.
  - Decrease the federal funds rate to 0-0.25% by December 2008.
  - **Forward guidance**: the promise that interest rates were going to stay low "for some time" and then "for an extended period" → investment and inflation (avoid deflation)
  - Easing credit programs that provided loans directly to firms.
  - Large Scale Asset Purchase (aka **Quantitative Easing**) – purchase of MBSs and mortgages to prop up the housing market and lower interest rates on other assets.

Source: Rich, R. "The Great Recession". *Federal Reserve History.* Nov 22, 2013. Accessed August 3, 2020. https://www.federalreservehistory.org/essays/great_recession_of_200709

Should we let banks fail? Credibility and threats

- The events following the Lehman bankruptcy were much worse than expected.
- As a matter of principle it's easy to say we should let banks fend for themselves.
- However, when a bank is in trouble, the authorities are concerned with the costs that the bank's failure might impose on the financial system and the economy.
- Once banks are in difficulties and there's threat of substantial damage, it may be better to forget about fundamental principles and instead avert immediate damage.
- In order to affirm the principle that banks be allowed to fail, we have to be able to reduce the costs of failure!
- Introduce the **Dodd-Frank Wall Street Reform and Consumer Protection Act**.

Financial regulation of Dodd-Frank Act (a selection)

- Create various **oversight agencies** to monitor the financial health of institutions that could cause another major crisis if they failed, and oversee restructuring of said firms to prevent the use of tax dollars to prop them up.
- Establish **Consumer Financial Protection Bureau** (CFPB) to prevent predatory lending in the mortgage market and help consumers better understand terms of mortgages.
- Establish **Volcker Rule** to restrict how and what banks can invest, and to limit banks' involvement with hedge funds and private equity firms, which are considered too risky.
- Significant portions of the Dodd-Frank law were rolled back in 2018 by Congress and President Trump.

Source: Hayes, A. and T. Brock. "Dodd-Frank Wall Street Reform and Consumer Protection Act". *Investopedia.* Jul 20, 2020. Accessed August 3, 2020.
https://www.investopedia.com/terms/d/dodd-frank-financial-regulatory-reform-bill.asp

D. Aftermath and legacy

The impact of the Great Recession

- Longest recession since WWII (December 2007 to June 2009).
- GDP declined 4.3% from peak to trough, unemployment rose to 9.5% in June 2009 and peaked at 10% in October 2009.
- S&P 500 Index fell 57% from peak (October 2007) to trough (March 2009).
- Home prices fell 30% and net worth of households fell from $69 trillion to $55 trillion.

Source: Rich, R. "The Great Recession". *Federal Reserve History.* Nov 22, 2013. Accessed August 3, 2020. https://www.federalreservehistory.org/essays/great_recession_of_200709

Return to New Keynesian ideas

"If you were going to turn to only one economist to understand the problems facing the economy, there is little doubt that the economist would be **John Maynard Keynes**. Although Keynes died more than a half-century ago, his diagnosis of recessions and depressions remains the foundation of modern macroeconomics."

– Economist Gregory Mankiw in *The New York Times*

Ben Bernanke, Chair of the Federal Reserve at the time, is a economic historian who studied the Great Depression – many of the lessons of that time were employed during the Great Recession.

Source: https://www.imf.org/external/pubs/ft/fandd/2014/09/basics.htm

Economists and their responsibility

- Economists agree that the causes were numerous, that each of these many factors were to blame, underscoring the complexity of the crisis.
- At the same time, **Anat Admati**, leading expert on the banking industry and financial reform, disagrees on the comparison that banking experts often make between "banking crises" and "natural disasters".
  - Natural disasters cannot be prevented. When they occur, the government provides emergency support. But are banking crises unavoidable?
- Also, Admati argues that economists have a responsibility to advise public policy and expose misinformation and misleading claims, but "sadly, among the enablers of our inefficient and distorted financial system are economists and academics".

Source: Admati, A. "Political Economy, Blind Spots, and a Challenge to Academics". *ProMarket.* Nov 15, 2019. Accessed August 1, 2020. https://promarket.org/2019/11/15/political-economy-blind-spots-and-a-challenge-to-academics/

“Your Moment of Zen”™

"These new regulations will fundamentally change the way we get around them."

Published in The New Yorker, March 9, 2009 by P.C. Vey
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