Lecture 19: Mian & Sufi, Part II

ECON 43370: Financial Crises

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Unemployment

To be unemployed, one must be (i) not working but (ii) actively search for work

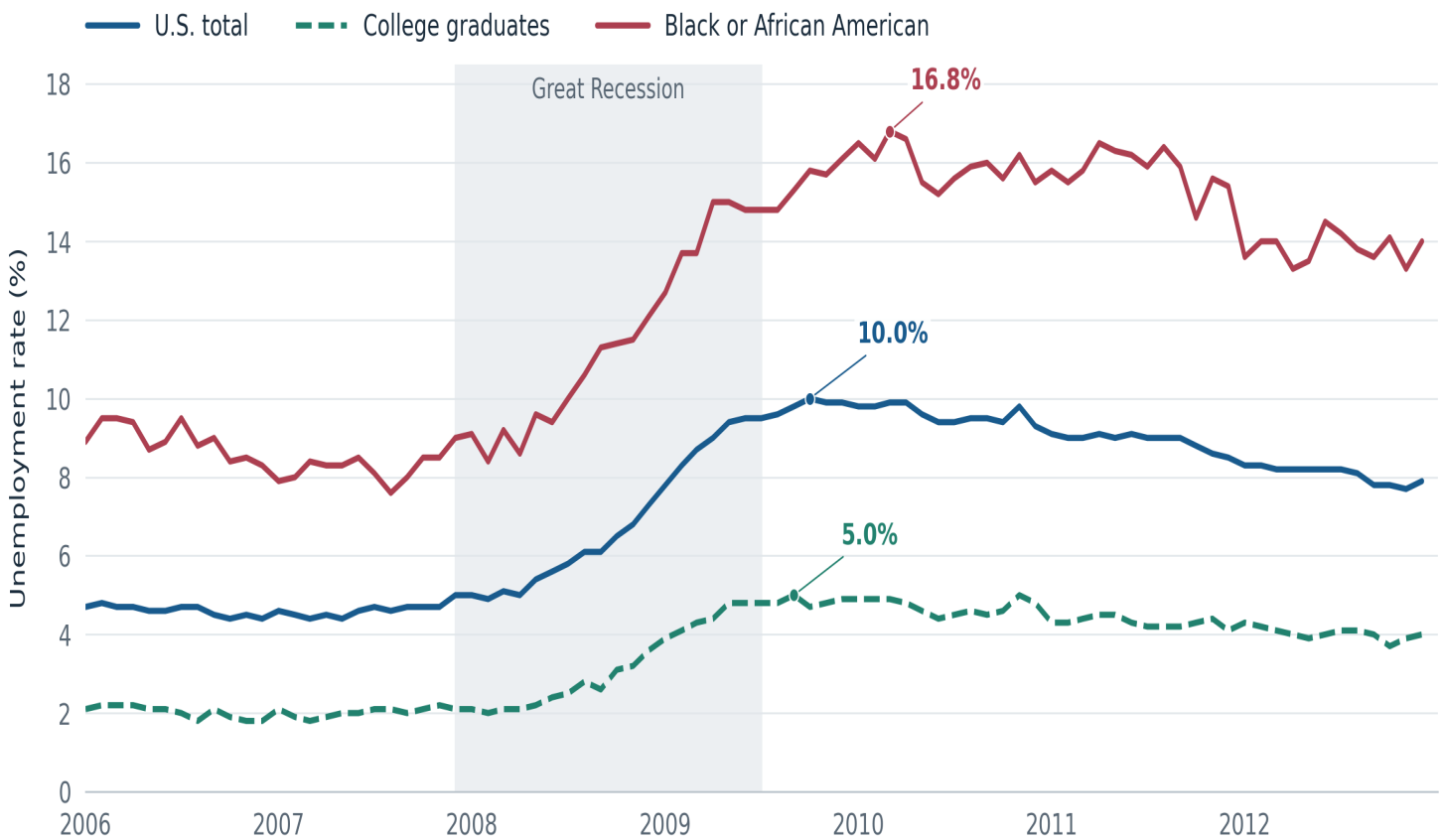
In a sense, this means that (notional) supply and demand are not meeting

Some kind of friction:

- Wage rigidity
- Relocation frictions

Unemployment in the Great Recession

United States | January 2006–December 2012 | Monthly, seasonally adjusted



College graduates: bachelor's degree or higher, age 25+. U.S. total and Black series: age 16+.

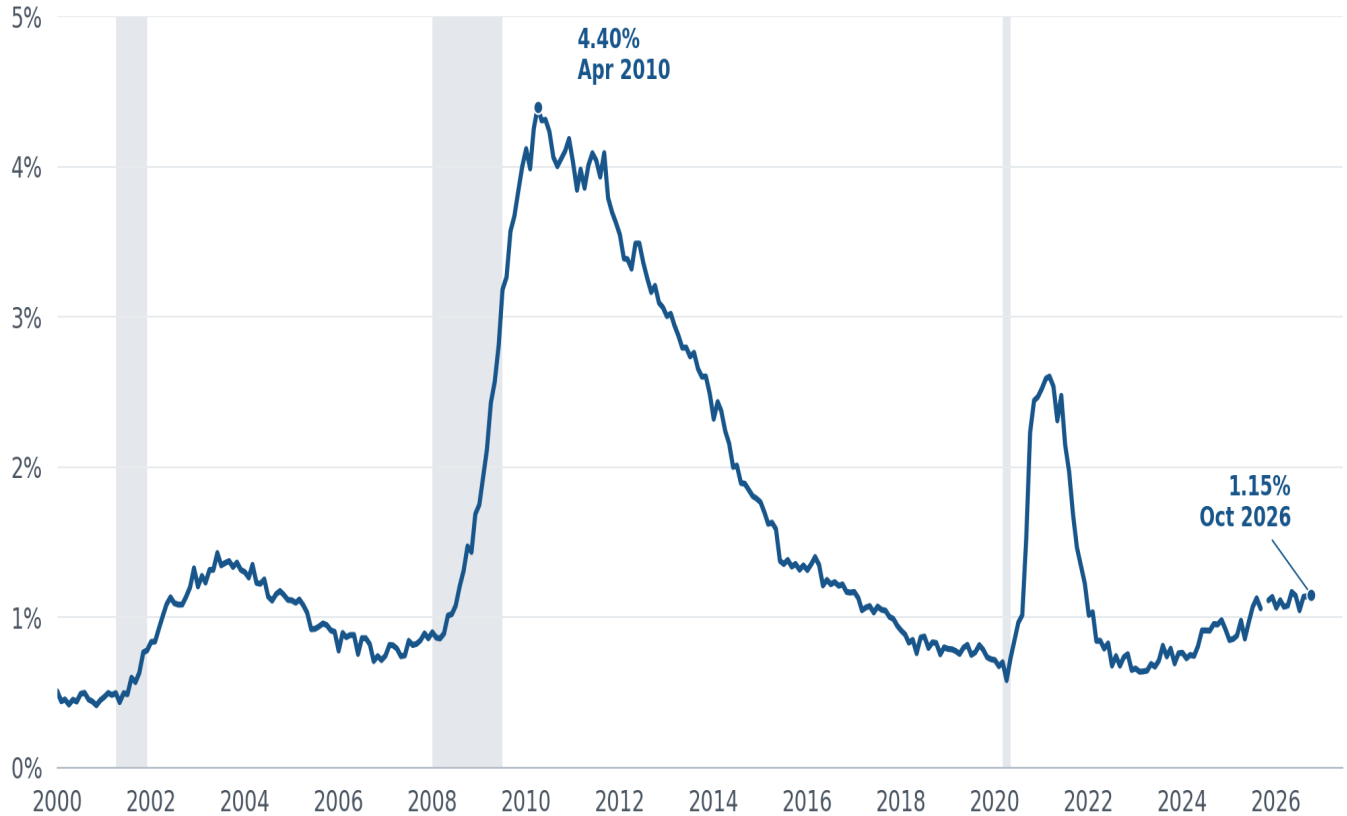
Shading: December 2007–June 2009 (NBER). Labels show peak rates within the plotted period.

Source: U.S. Bureau of Labor Statistics via FRED (UNRATE, LNS14027662, LNS14000006). Retrieved November 6, 2026.

Long-term unemployment in the United States

Unemployed for 27+ weeks as a share of the civilian labor force

Monthly, seasonally adjusted | January 2000–October 2026



Sources: U.S. Bureau of Labor Statistics via FRED (UEMP27OV and CLF16OV); NBER recession indicator (USREC).

Rate = 100 × unemployed for 27+ weeks / civilian labor force. Gray shading denotes recessions.

October 2025 is missing because the household survey was not collected during the federal shutdown. Retrieved November 9, 2026.

Tradeable vs. Non-Tradeable

Non-tradeable goods are produced and consumed within a geographic area

- Largely things like services (e.g., haircuts)

Tradeable goods can be consumed in a different location than where they are consumed

- Largely goods (e.g., automobiles)

Of course, not all goods are tradeable (e.g., houses) and not all services are non-tradeable (e.g., financial advisor)

Mian & Sufi Hypothesis

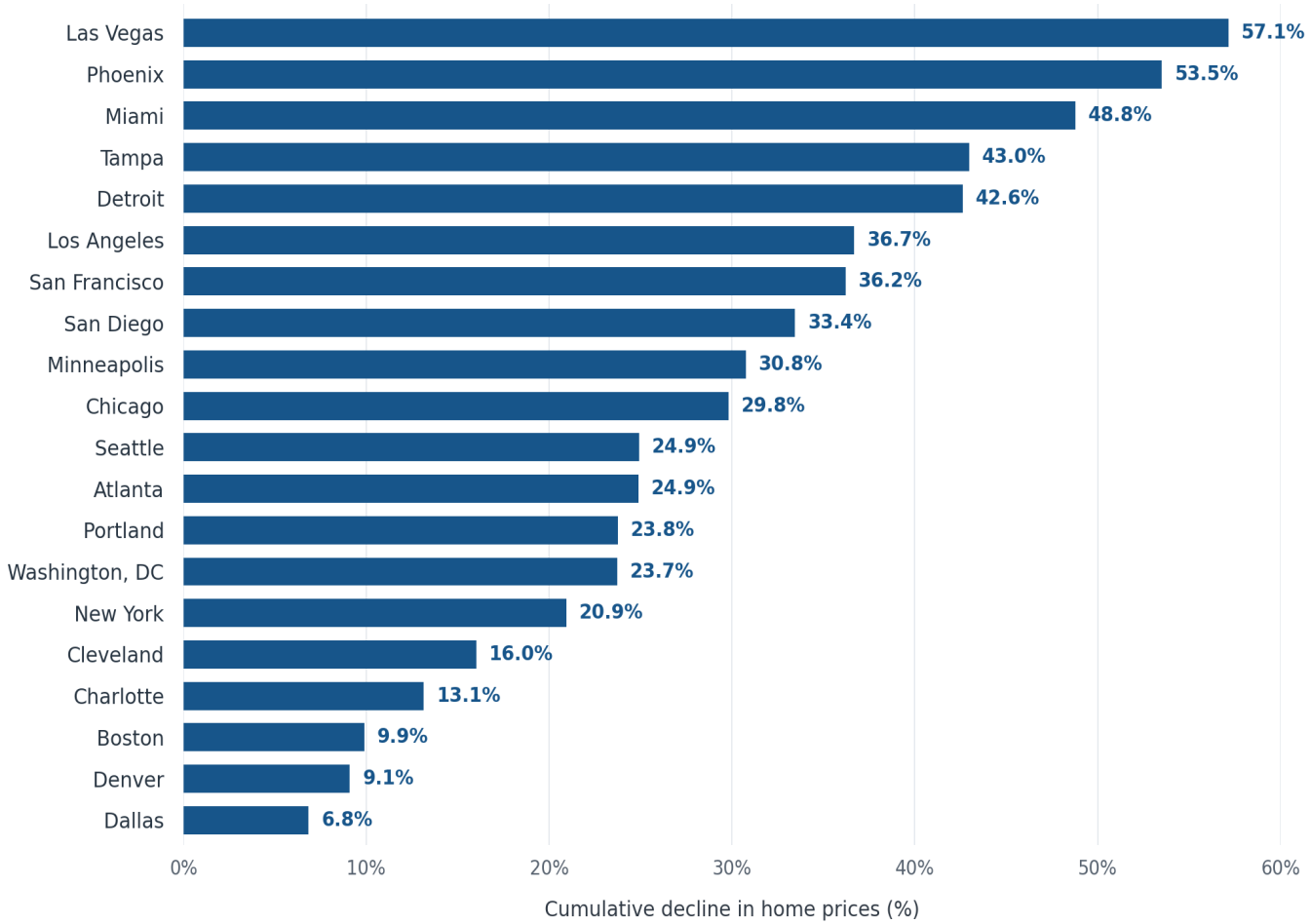
Basic idea of the "levered losses" framework:

- Expect to see job loss for non-tradeable jobs only in areas hard hit by net worth declines (e.g., Florida)
- Expect to see job loss for tradeable jobs everywhere

Home price declines across 20 U.S. metro areas

Cumulative decline, January 2007–December 2010

Case-Shiller home price indexes | Nominal prices, seasonally adjusted

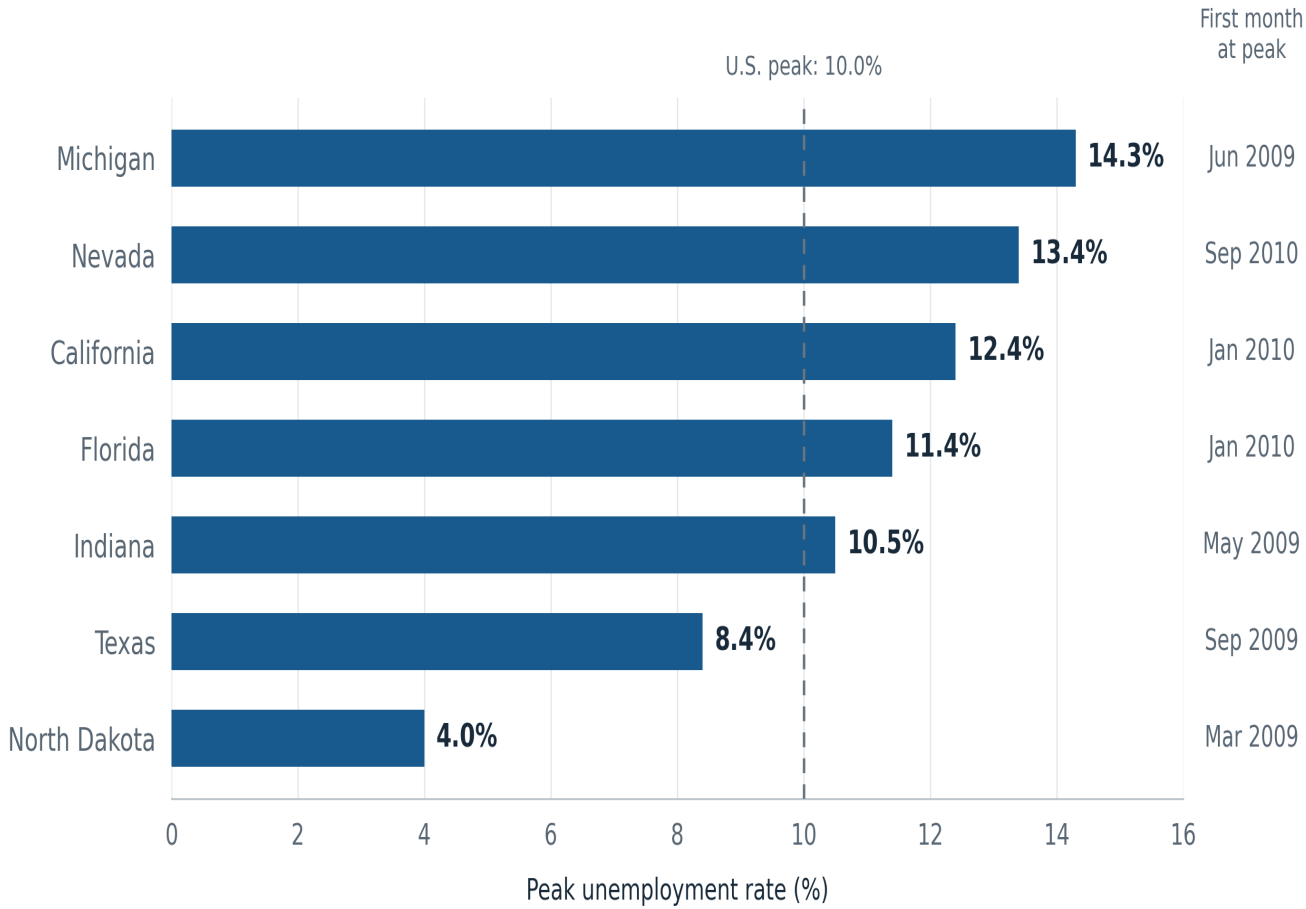


Source: S&P Dow Jones Indices, S&P Cotality Case-Shiller Home Price Indices, via FRED. Retrieved November 9, 2026.

Decline = 100 × [1 − (December 2010 index / January 2007 index)]. Bars show the magnitude of the decline.

Peak unemployment across selected states

Great Recession and aftermath | Maximum monthly rate, December 2007–December 2012



Monthly, seasonally adjusted. The window includes the recovery because unemployment often peaked after June 2009.

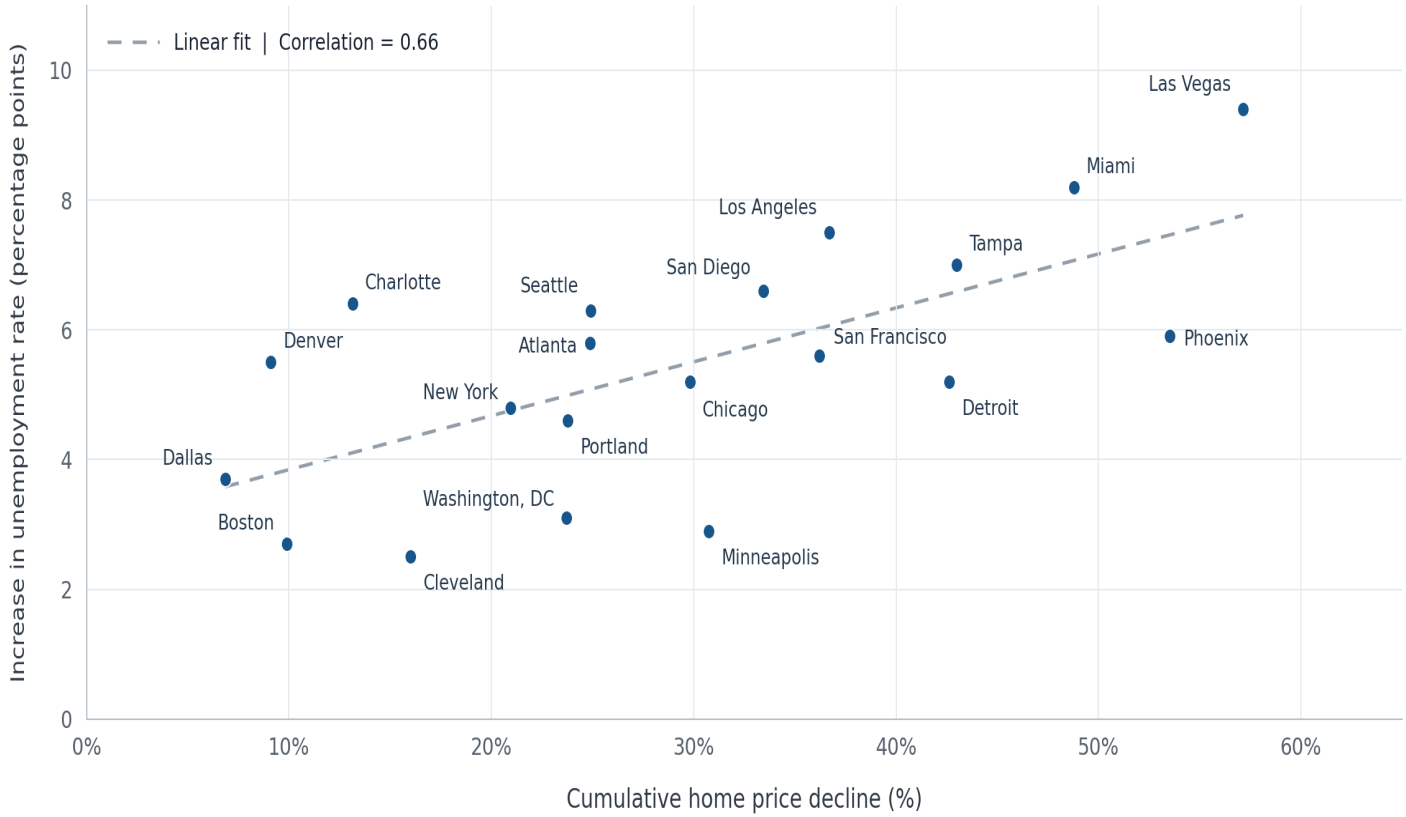
For tied peaks, the first month is shown. Dashed line: U.S. peak of 10.0% in October 2009.

Source: U.S. Bureau of Labor Statistics via FRED (MIUR, NVUR, CAUR, FLUR, INUR, TXUR, NDUR). Retrieved November 6, 2026.

House price declines and rising unemployment

20 Case-Shiller metro areas | January 2007–December 2010

Home price declines are shown as positive percentages



Sources: S&P Dow Jones Indices (Case-Shiller) and U.S. Bureau of Labor Statistics, via FRED. Retrieved November 9, 2026.

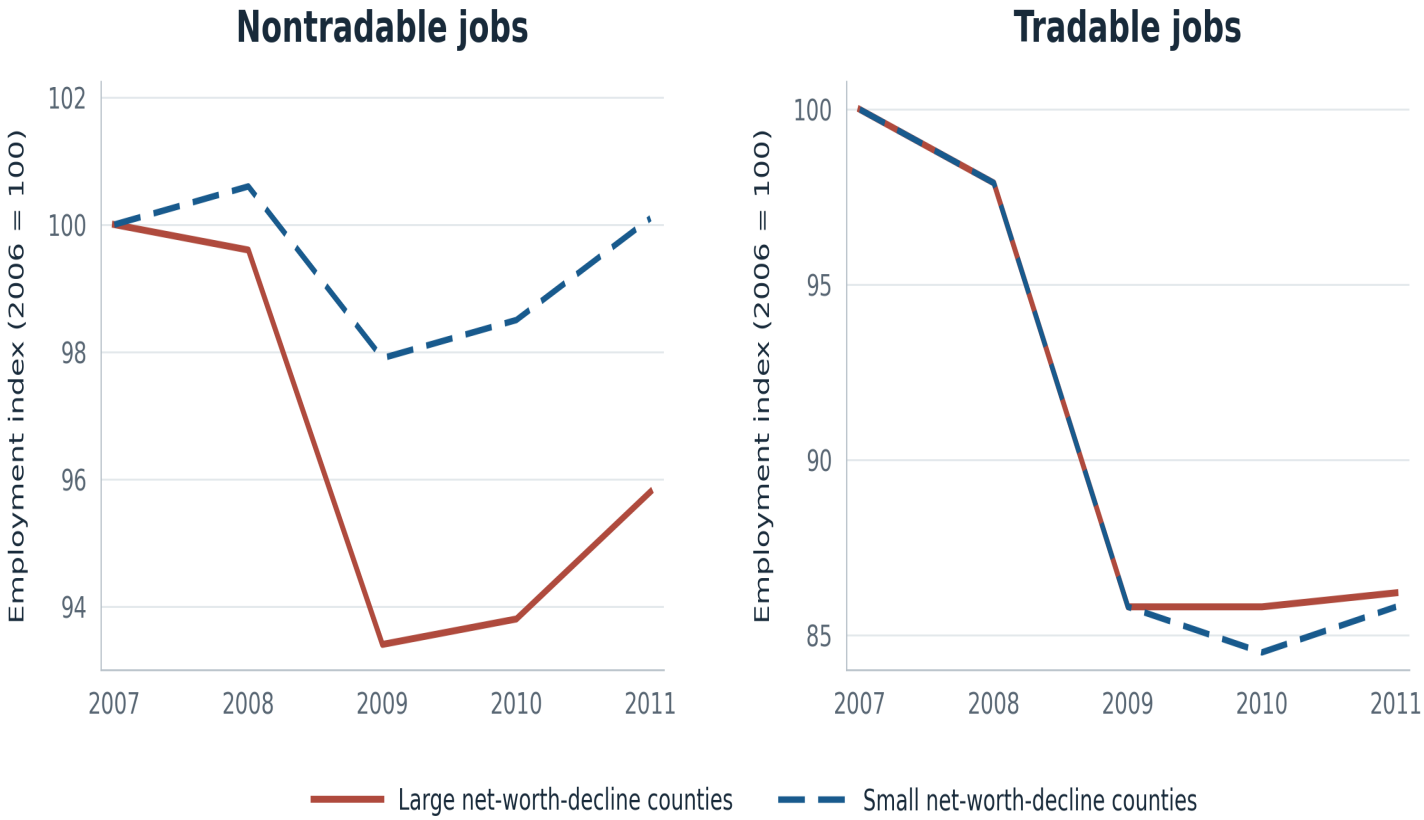
Prices: nominal, seasonally adjusted. Unemployment: smoothed seasonally adjusted; change = Dec. 2010 rate − Jan. 2007 rate.

BLS metro boundaries are approximate matches to Case-Shiller coverage; Boston uses the historical New England city-and-town area.

Dashed line: unweighted ordinary least squares fit across the 20 metro areas.

Employment decline during the Great Recession

Mian & Sufi, House of Debt — recreation of Figure 5.1



Groups: the 20% of counties with the largest versus smallest declines in housing net worth during the recession.

Approximate values digitized from the published figure. Separate y-axis scales and index label follow the original.

Source: Atif Mian and Amir Sufi, House of Debt (University of Chicago Press, 2014), Figure 5.1, p. 65.

Credit Expansion

Credit (in particular mortgage credit) expanded dramatically in the years leading up to the Great Recession

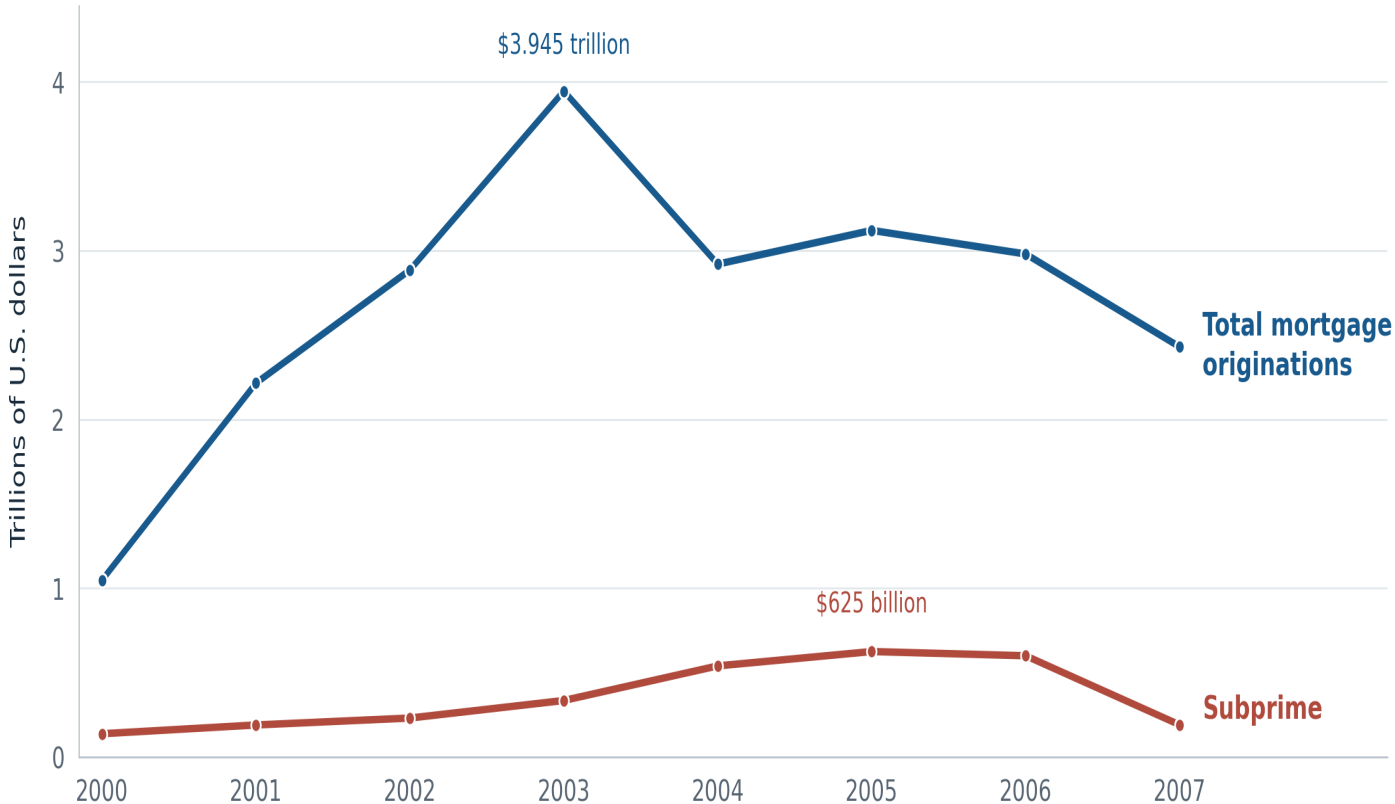
Unsurprisingly, this credit funneled mostly to marginal borrowers

Why does this matter?

- Helps make sense of the bubble
- Also underscores that the bursting hurt the households who were most vulnerable

U.S. mortgage lending, 2000–2007

Annual mortgage originations | Total and subprime



New lending during each year, including refinancing; these are flows, not outstanding mortgage balances.

Subprime is included in total mortgage originations. Figures are published industry estimates in nominal dollars.

Sources: Inside Mortgage Finance / Inside MBS & ABS, as reported by U.S. Congress, FHFA, and the Federal Reserve.

Supply Elasticity

Did the expansion in credit cause the housing bubble, or vice versa?

Classic identification problem (e.g., demand and supply)

M & S compare elastic areas (e.g., Indianapolis) with inelastic areas (e.g., San Francisco)

- With elastic housing supply, price can't go up much, so the "bubble" is sort of shut down
- But mortgage credit did expand to marginal borrowers even in these areas
- Suggestive that credit wasn't chasing a bubble, but rather creating it

Credit Supply and Demand

Credit supply went up everywhere

Homeowners took advantage

This was mostly for low-credit score borrowers

And largely through HELOCs

Some of this might have been because of pre-existing borrowing constraints. Some (more) of it via

HELOC

Home **E**quity **L**ine **O**f **C**redit

Suppose your house is worth $300,000 and you have a $200,000 mortgage ($100,000 of equity)

Bank might extend credit, using the home equity as collateral

Essentially makes you another loan for, say, $20,000

This gives you cash ($20,000) but increases your total debt on the home to $220,000 (i.e., like a second mortgage)

The Asian Financial Crisis and the Demand for Safe Assets

The Asian Financial Crisis (1997): foreign banks had borrowed heavily in dollars

Things went bust

This led to capital outflow that had to end up somewhere (US)

It also led foreign central banks to begin stockpiling US safe assets (e.g., Treasuries) to be able to lend in a future crisis

This, in part, fueled the "Global Savings Glut" (Ben Bernanke, 2005)

Securitization

Securitization had been going on for some time

In the housing market, originally just done by GSEs

But demand for safe assets (not just from abroad, but from large institutional investors, as told by Gorton): started getting "private-label" mortgage backed securities (MBSs)

Supply was reacting to demand!

The Basics of GSE

Government **S**ponsored **E**nterprises

- Fannie Mae and Freddie Mac are now essentially the same (and both under federal conservatorship)
- Originally, Freddie was for S&Ls

They bought, packaged, securitized, and sold mortgages. Only "conforming" mortgages

They guaranteed payments to holders of MBS

Their business model: keep some of the incoming payments for servicing and as insurance premia, pay the rest out

In addition to selling off securitized mortgages, they also came to hold a bunch (funded largely througfh short-term debt). This is how they got into trouble in 2008

Securitization and Risk

Agency-backed MBS (Fannie and Freddie) were considered "risk-free": they guaranteed payments, and there was an "implicit" government backstop (which was later used)

Private-label MBS not risk-free, but plausibly less risk

- Suppose you have one asset that pays \$100 with 90 percent probability and 0 otherwise
- 10 percent chance of earning \$0 (\$90 in expectation)!
- Suppose I pool 1000 loans with these features, assuming independence
- Expected average payout is still \$90, but variation falls from \$900 (one draw) to \$0.90 (average over 1000 draws)

Tranching

Suppose an individual mortgage pays \$100,000 most of the time, \$50,000 in default (10 percent)

Tranching: split the payments into senior (\$50,000) and junior (\$50,000)

Senior tranche is riskless!

Junior tranche is quite risky: \$0 10 percent of the time, \$50,000 90 percent of the time

Pooling

Now pool two mortgages with the exact same characteristics together (two loans means $200,000)

Senior tranche: $100,000 and completely riskless

Assuming independence, junior tranche worth:

- $100,000: 81 percent of the time
- $50,000: 18 percent of the time
- $0: 1 percent of the time

Much less risky! But this assumes independence

Tranching and Covariance

Could keep going here, splitting into more and more tranches

Where the logic breaks down: covariance

The calculation above assumes independence

- That was a decent assumption looking back
- House price movements were localized – there hadn't been large downswings that were common to many areas

When housing markets blew up (simultaneously) in many markets, the low-level tranches were hammered

Securitization and Screening

If originators are making loans to hold, they have a strong incentive to screen potential applicants

With securitization, the incentives are lower

Keys et al (2010): regression discontinuity design

- Compare outcomes for people just above and below an artificial, discrete cutoff
- They find that borrowers with credit scores just above a cutoff for securitization actually had higher default rates
- Some evidence of low-documentation for these potential borrowers

Bubbles

Standard theory of asset pricing: price of an asset equals PDV Of anticipated cash flows

- Dividends for stocks, coupons + face value for bonds, rents for housing

Appropriate discount rate: compensates holder of cash flows for risk. Higher risk, higher required return (discount rate)

"Bubble": any deviation of an asset's price from fundamental value

- Don't really have good theories for why bubbles might (or might not) exist or why they might start in the first place

- "Greater fool": people will be willing to overpay for an asset if they think someone will else will overpay by even more in the future

But Bubbles Likely Do Exist

Smith, Suchanek, and Williams (1988) provide some experimental evidence

- People were told (i) expected value of remaining dividends and (ii) how many more periods there would be
- In 14/22 experiments, prices rose substantially above fundamentals before collapsing
- Knowing dividends is not the same as knowing prices. Traders appeared to have a "recency" bias in adjusting price forecasts
- Some participants event questioned what was going on but still kept buying
- Some evidence that experience helped move prices closer to fundamentals

Debt and Bubbles

Asset price is like anything else: demand equals supply

Our standard theory tells us that demand and/or supply ought to adjust to hit fundamental value

Why might credit matter?

Borrowing eases constraints on speculative buying

Reinforcing aspects: rising prices eases collateral constraints, which facilitates even more buying, further easing constraints

Debt, Safety, and Neglected Risks

Easy credit can rationalize buying into a bubble

But why lend into a bubble?

"Neglected Risks" (Gennaioli, Shleifer, Vishny 2012): investors treat low-probability events (e.g., house prices in many markets going down at the same time) as approximately zero

M & S argue that debt encourages this: with debt, doesn't care much about details and doesn't monitor so long as he/she gets paid

- This potential downside of debt is the exact opposite of the benefit of not having to monitor all the time (costly state verification, CSV)