

ECON 3010

Intermediate Macroeconomics

Chapter 12

Aggregate Demand II:
Applying the IS-LM Model

Equilibrium in the *IS–LM* model

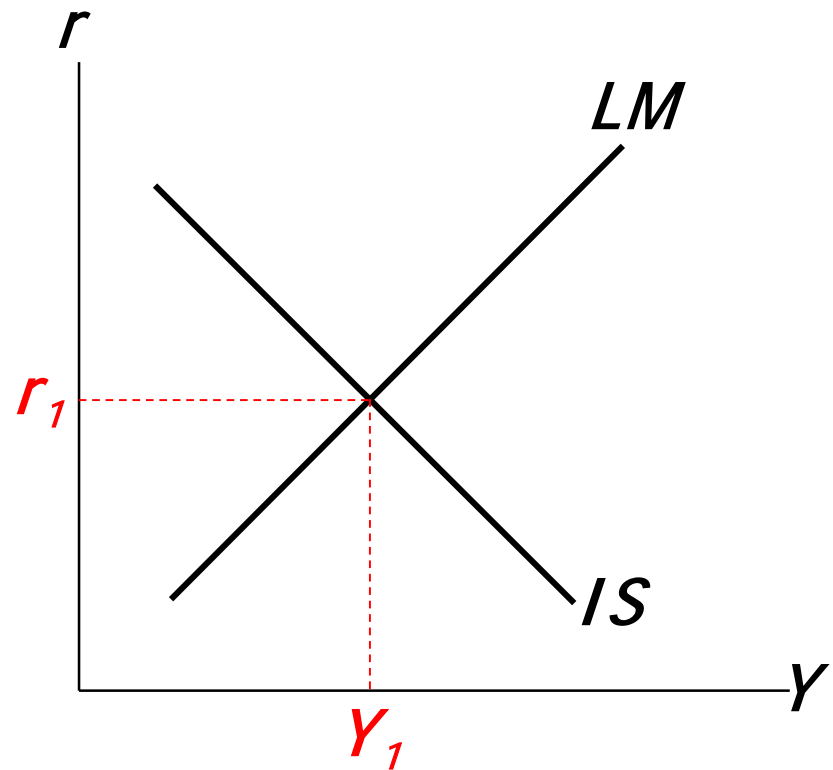
The *IS* curve represents equilibrium in the goods market.

$$Y = C(Y - \bar{T}) + I(r) + \bar{G}$$

The *LM* curve represents money market equilibrium.

$$\bar{M} / \bar{P} = L(r, Y)$$

The intersection determines the unique combination of Y and r that satisfies equilibrium in both markets.



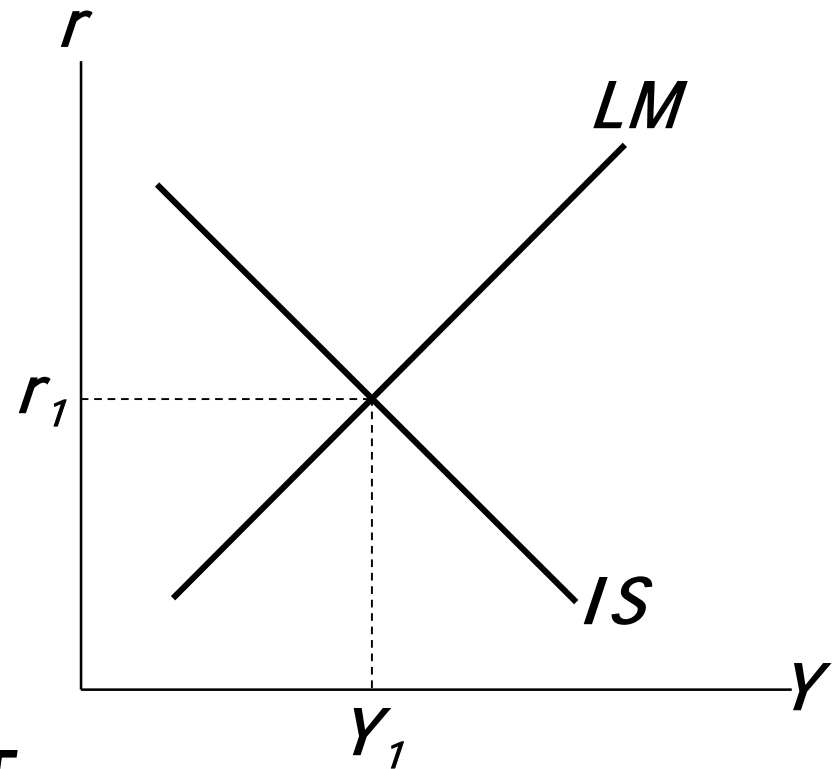
Policy analysis with the *IS-LM* model

$$Y = C(Y - \bar{T}) + I(r) + \bar{G}$$

$$\bar{M}/\bar{P} = L(r, Y)$$

We can use the *IS-LM* model to analyze the effects of

- fiscal policy: **G** and/or **T**
- monetary policy: **M**



An increase in government purchases

1. IS curve shifts right

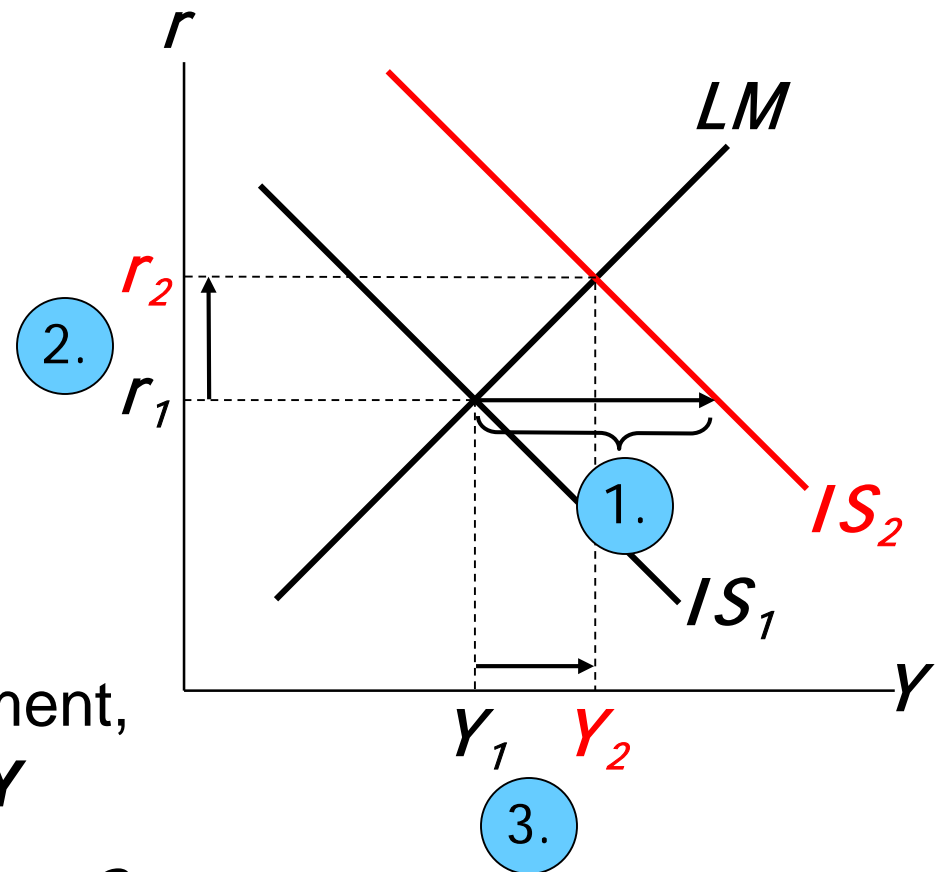
by $\frac{1}{1 - MPC} \Delta G$

causing output & income to rise.

2. This raises money demand, causing the interest rate to rise...

3. ...which reduces investment, so the final increase in Y

is smaller than $\frac{1}{1 - MPC} \Delta G$

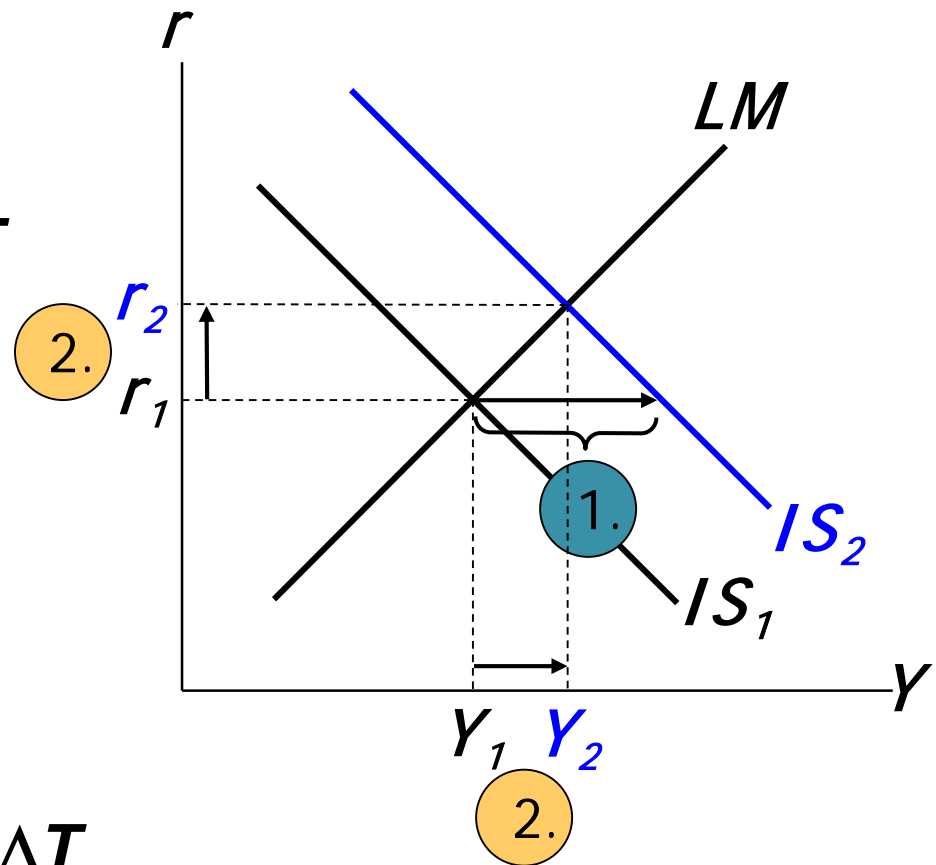


A tax cut

Consumers save $(1-MPC)$ of the tax cut, so the initial boost in spending is smaller for ΔT than for an equal ΔG ... and the IS curve shifts by

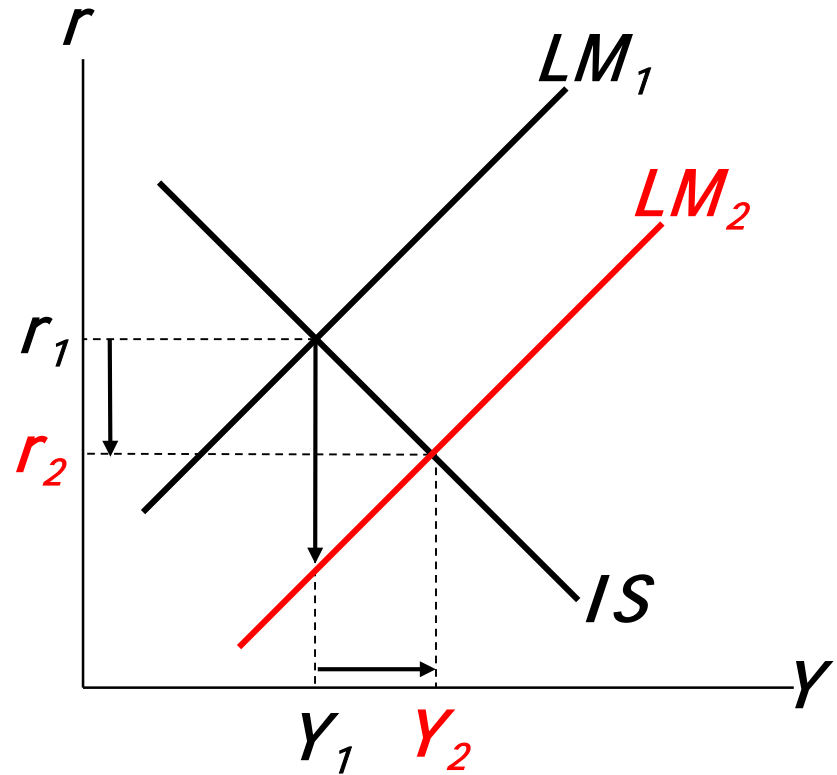
1.
$$\frac{-MPC}{1-MPC} \Delta T$$

2. ...so the effects on r and Y are smaller for ΔT than for an equal ΔG .



Monetary policy: An increase in M

1. $\Delta M > 0$ shifts the LM curve down (or to the right)
2. ...causing the interest rate to fall
3. ...which increases investment, causing output & income to rise.



Shocks in the *IS-LM* model

***IS* shocks:** exogenous changes in the demand for goods & services.

Examples:

- stock market boom or crash
⇒ change in households' wealth ⇒ ΔC
- change in business or consumer confidence
⇒ ΔI and/or ΔC

Shocks in the *IS-LM* model

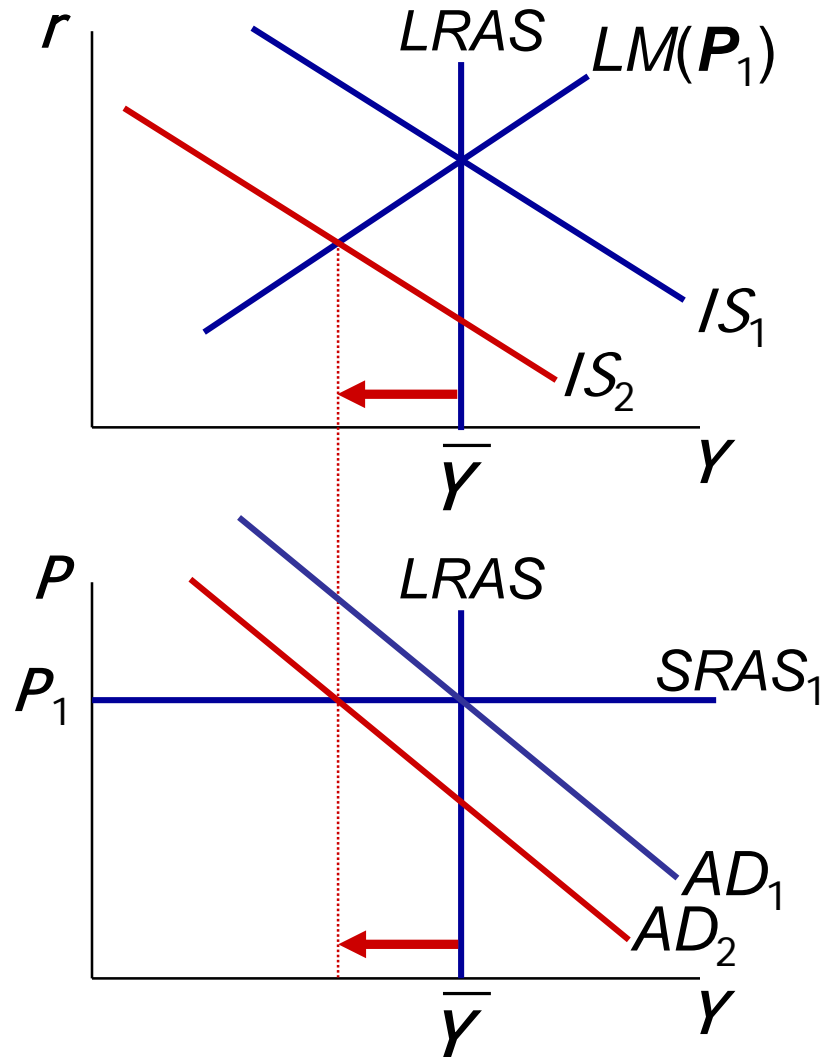
LM shocks: exogenous changes in the demand for money.

Examples:

- A wave of credit card fraud increases demand for money.
- More ATMs or the Internet reduce money demand.

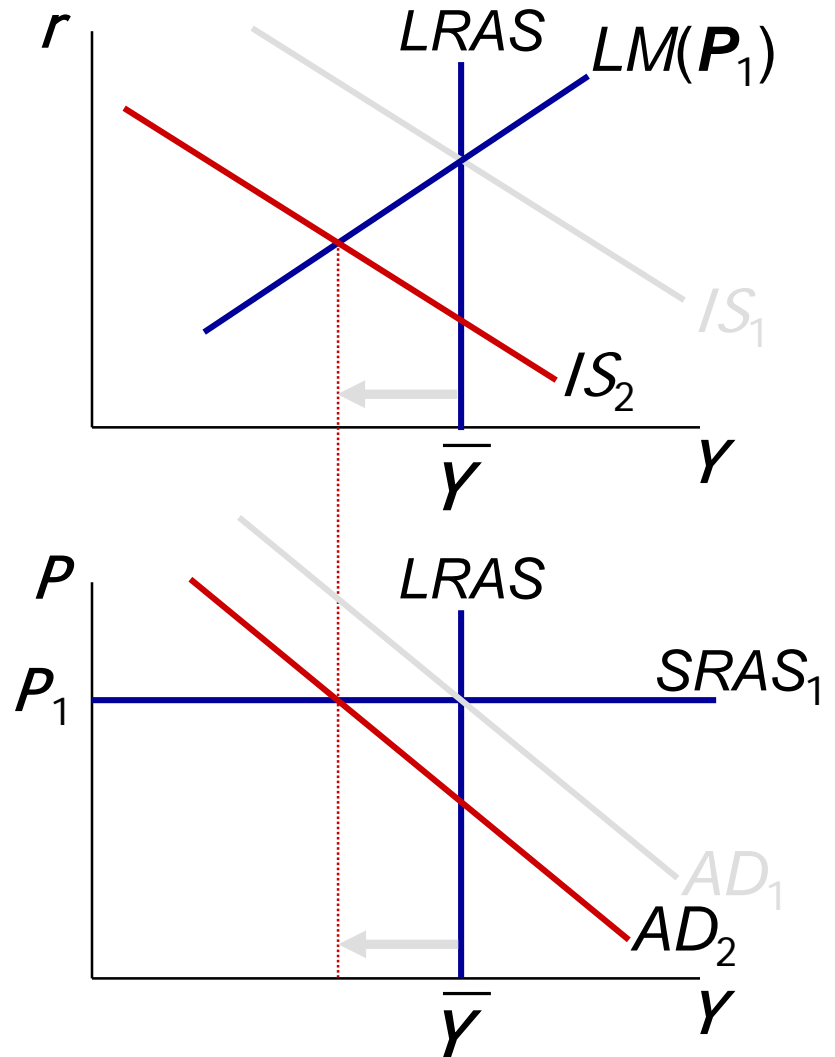
The SR and LR effects of an IS shock

A negative IS shock shifts IS and AD left, causing Y to fall.



The SR and LR effects of an IS shock

In the new short-run equilibrium, $Y < \bar{Y}$

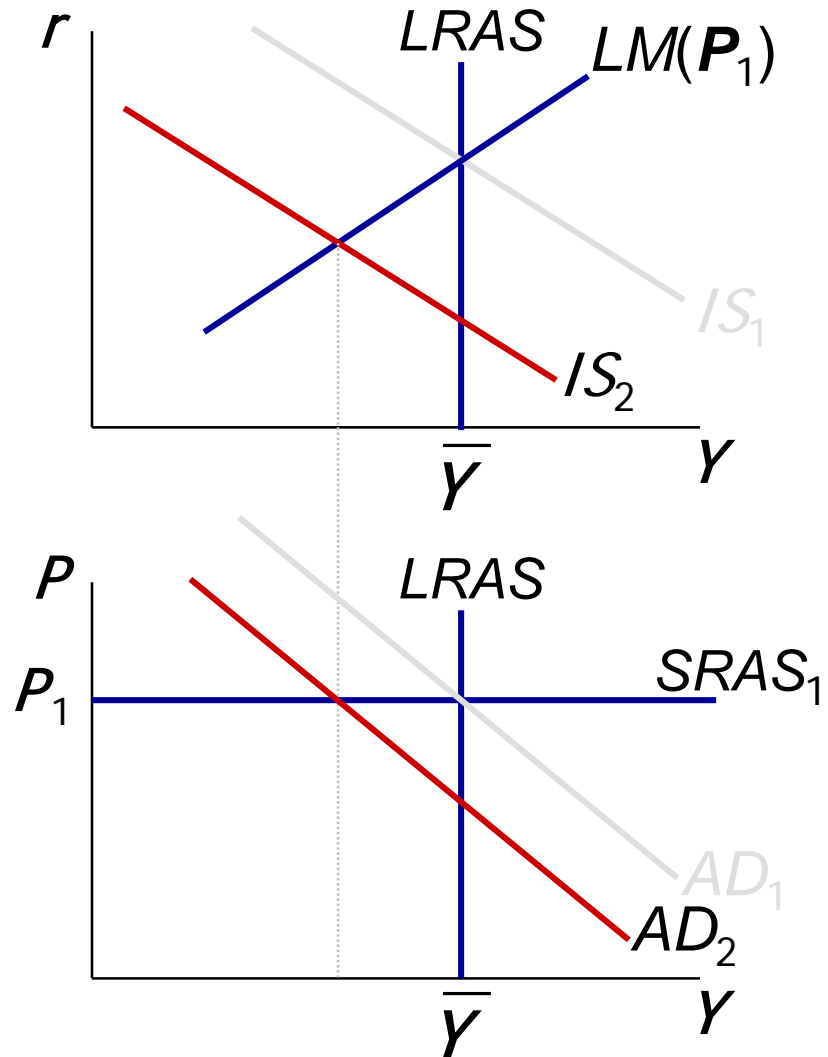


The SR and LR effects of an IS shock

In the new short-run equilibrium, $Y < \bar{Y}$

Over time, P gradually falls, causing:

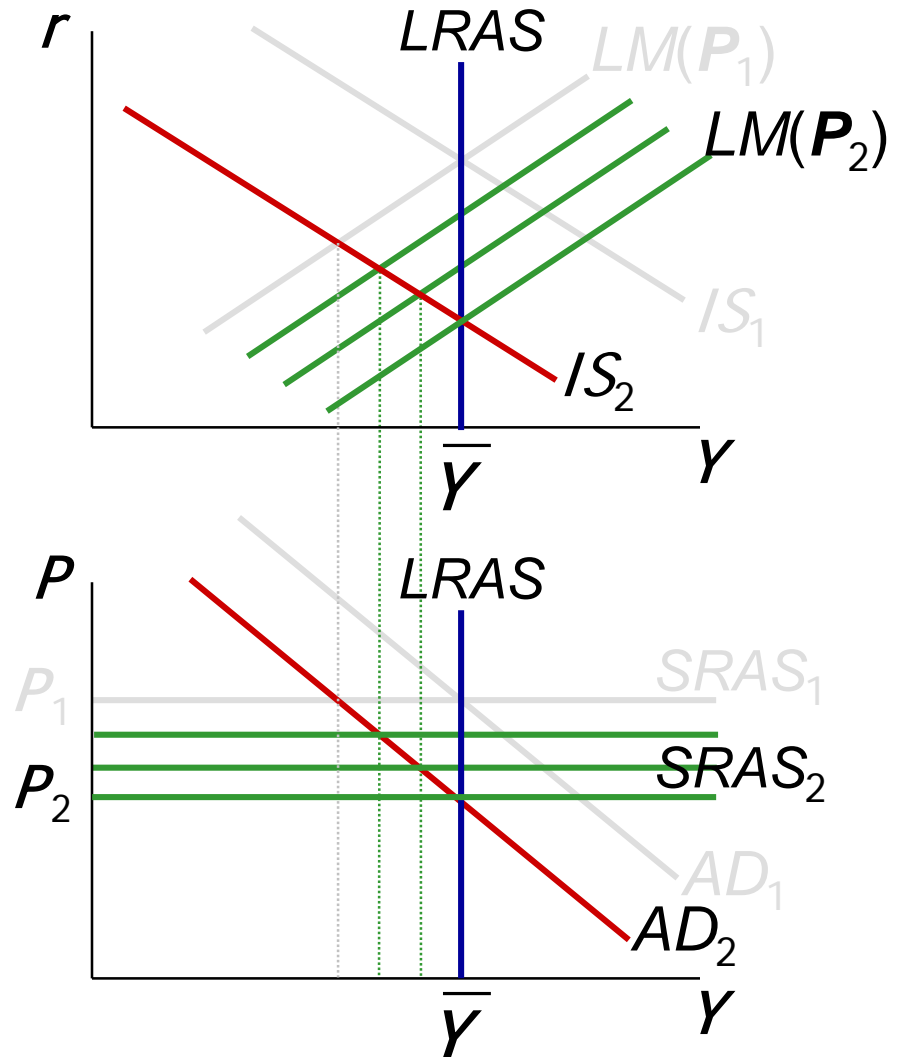
- $SRAS$ to move down
- M/P to increase, which causes LM to move down



The SR and LR effects of an IS shock

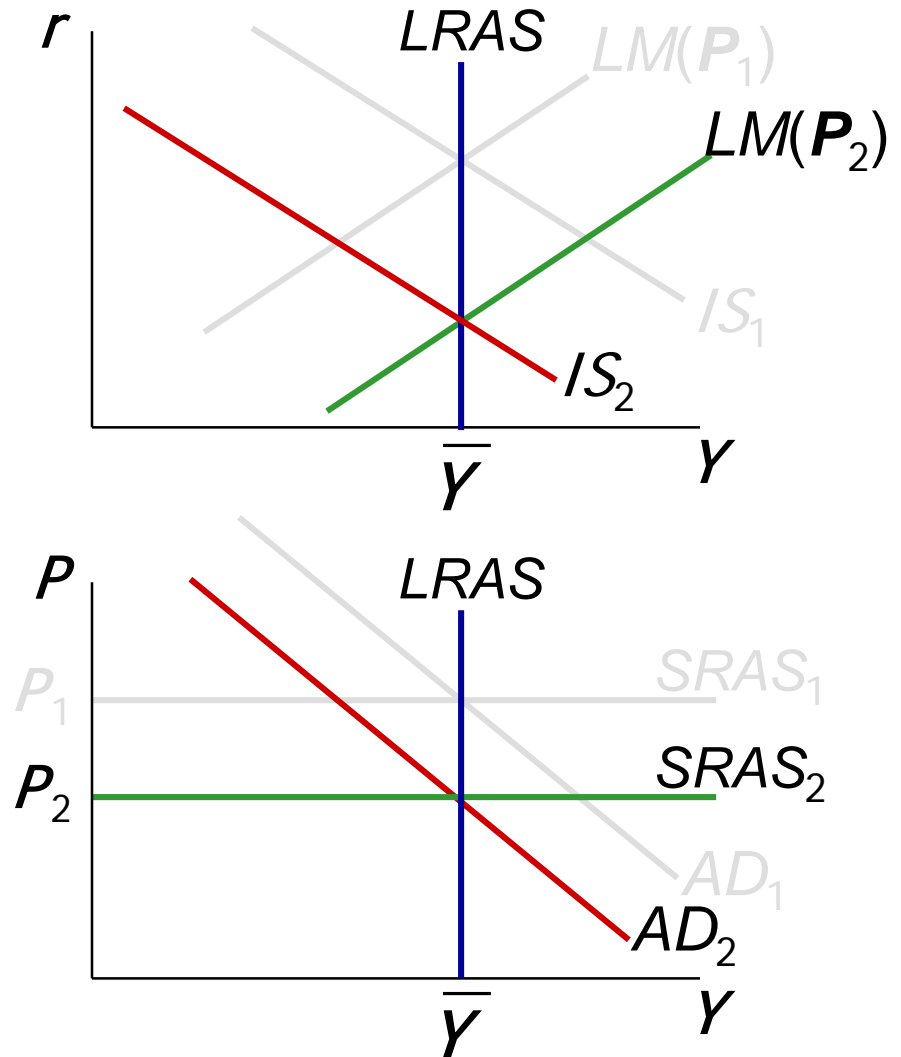
Over time, P gradually falls, causing:

- $SRAS$ to move down
- M/P to increase, which causes LM to move down



The SR and LR effects of an IS shock

This process continues until economy reaches a long-run equilibrium with $Y = \bar{Y}$

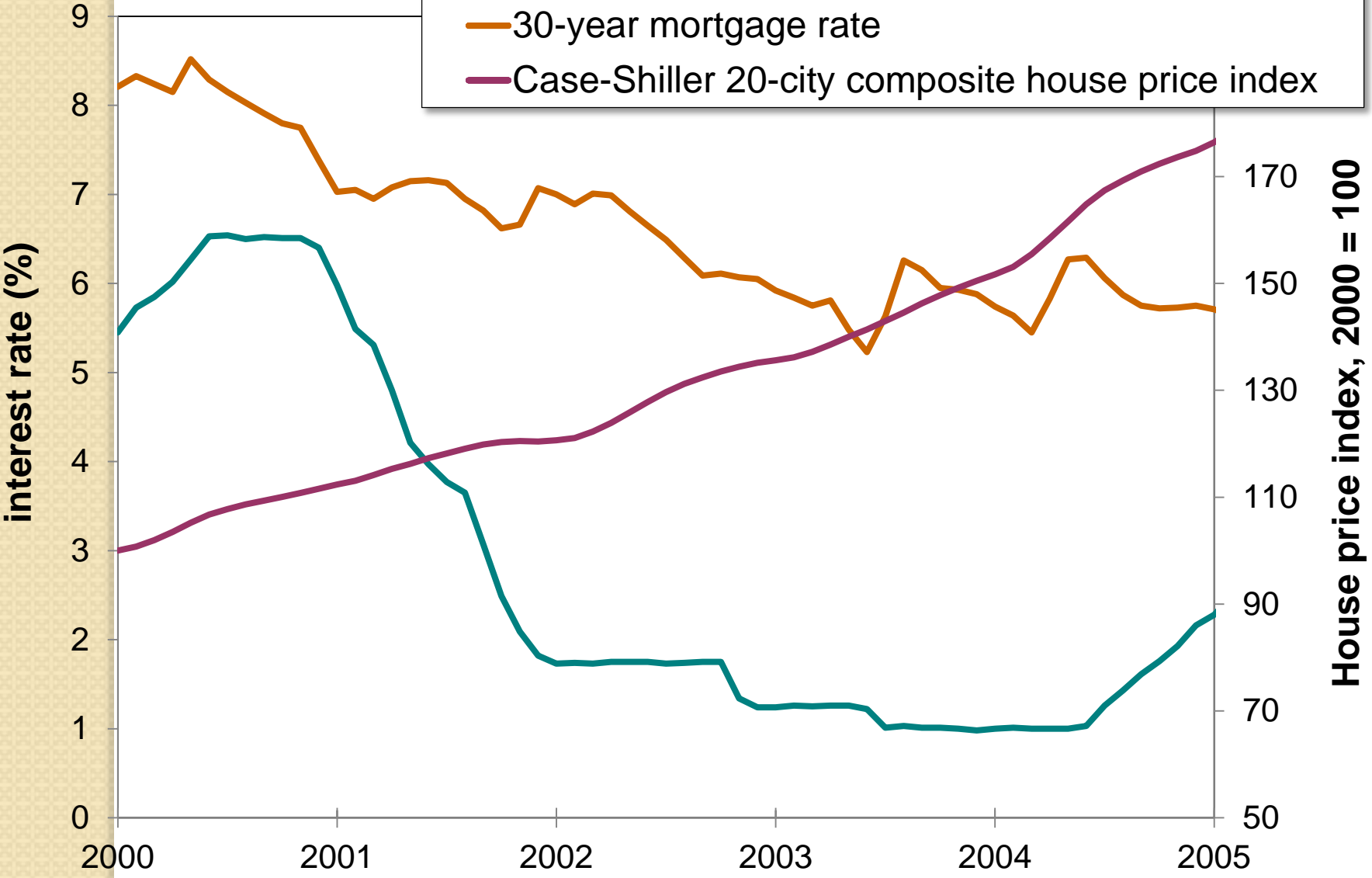
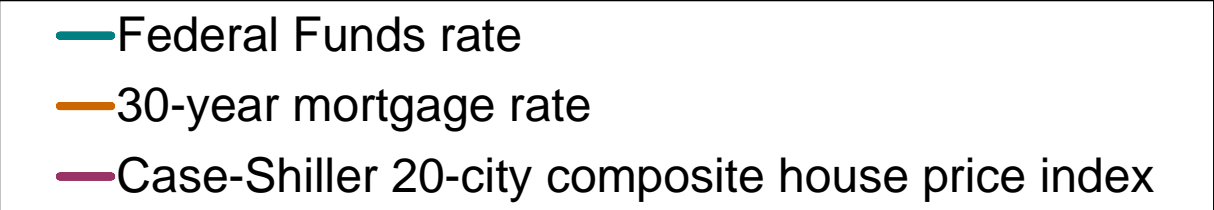


CASE STUDY

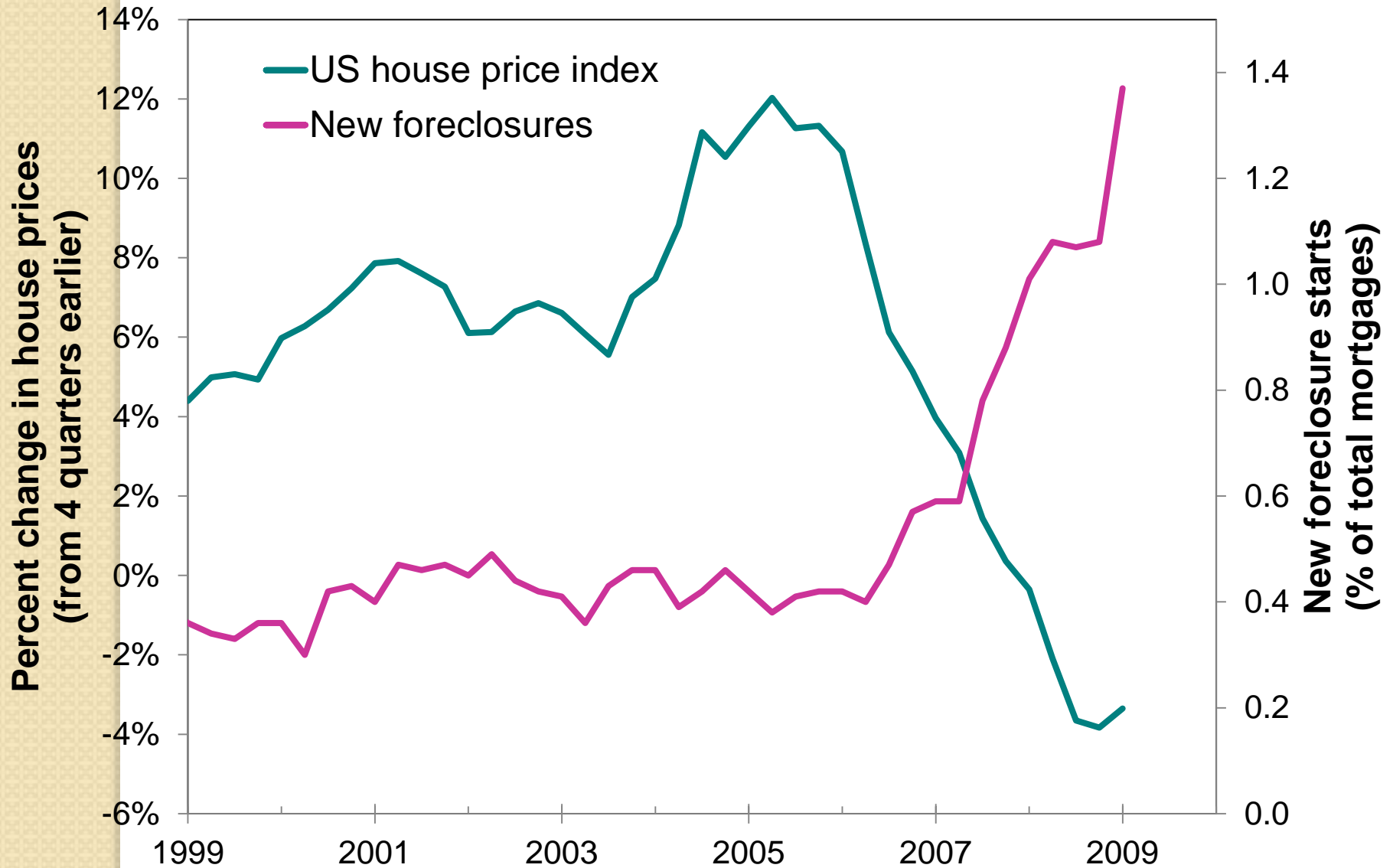
The 2008–09 financial crisis & recession

- 2009: Real GDP fell, unemployment approached 10%
- Important factors in the crisis:
 - early 2000s Federal Reserve interest rate policy
 - subprime mortgage crisis
 - bursting of house price bubble, rising foreclosures
 - falling stock prices
 - failing financial institutions
 - declining consumer confidence, drop in spending on consumer durables and investment goods

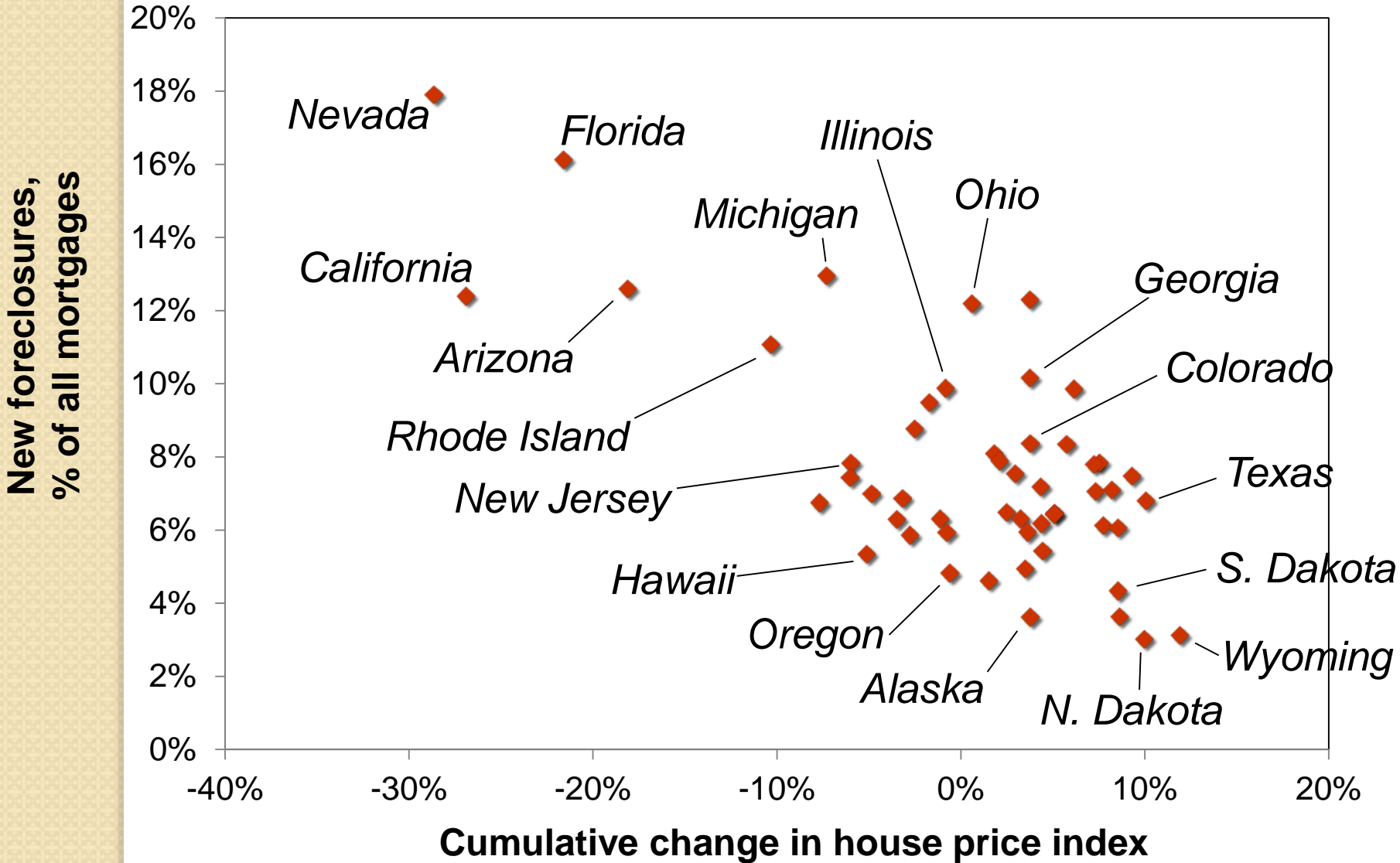
Interest rates and house prices



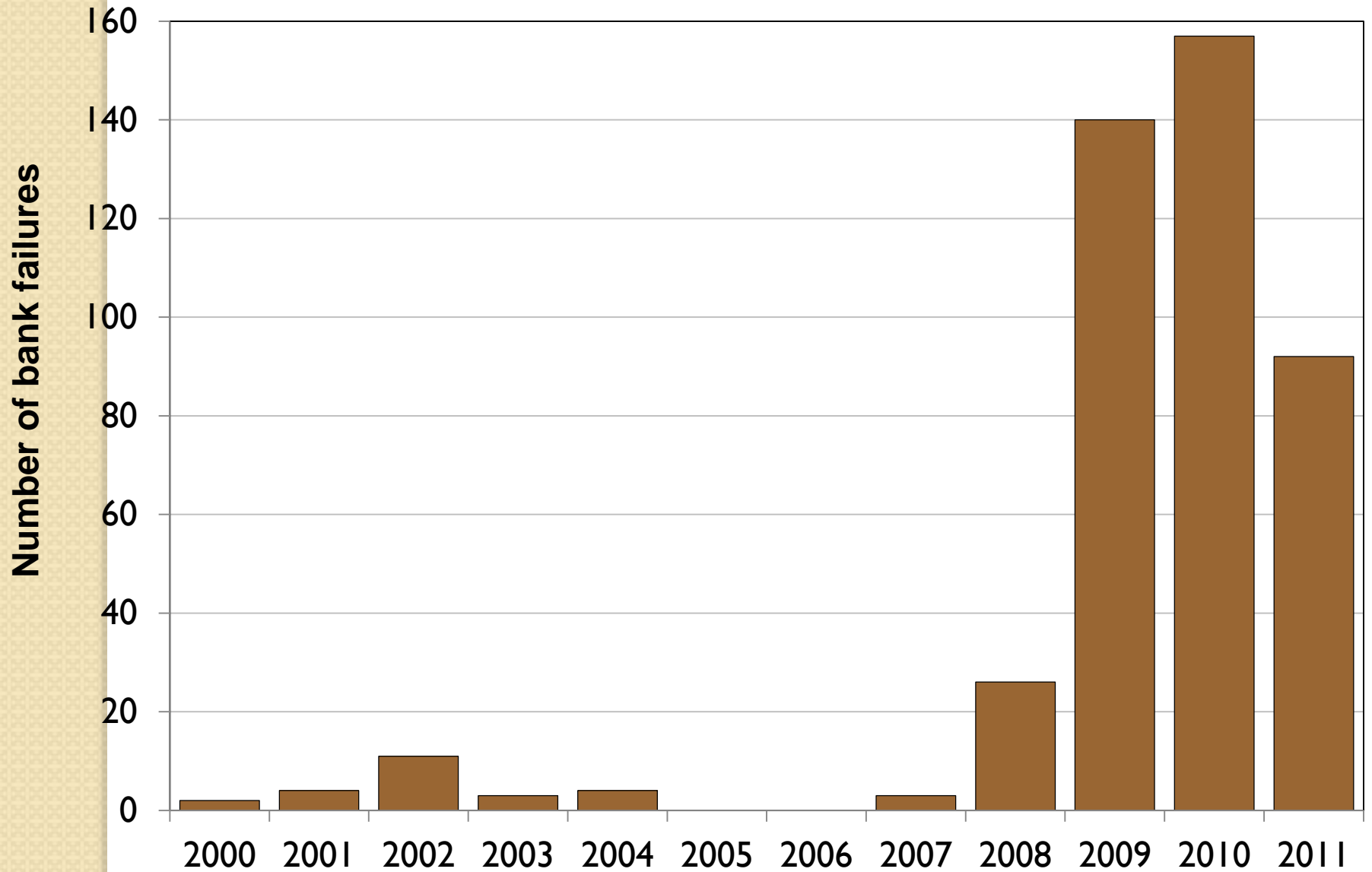
Change in U.S. house price index and rate of new foreclosures, 1999–2009



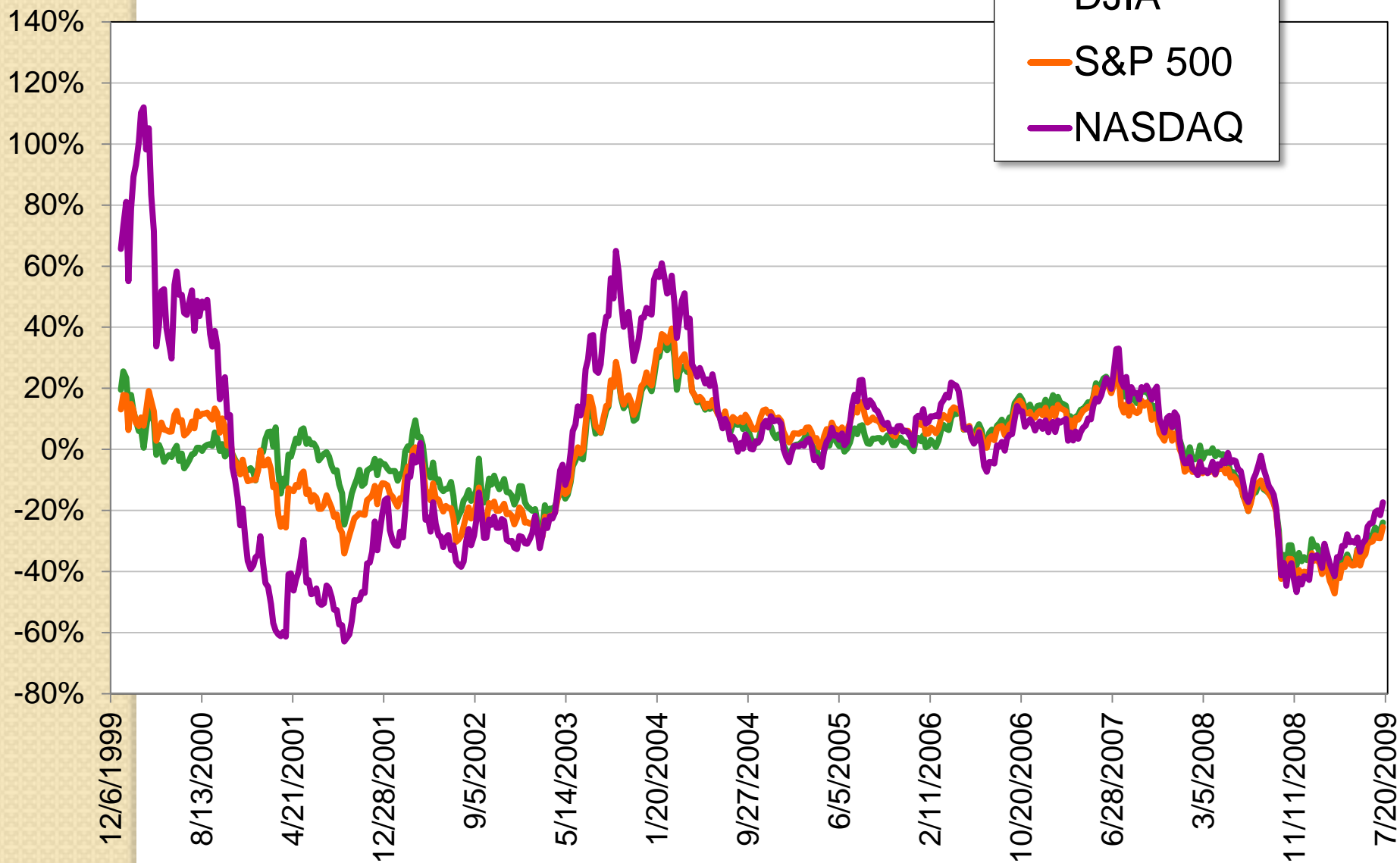
House price change and new foreclosures, 2006:Q3–2009:Q I



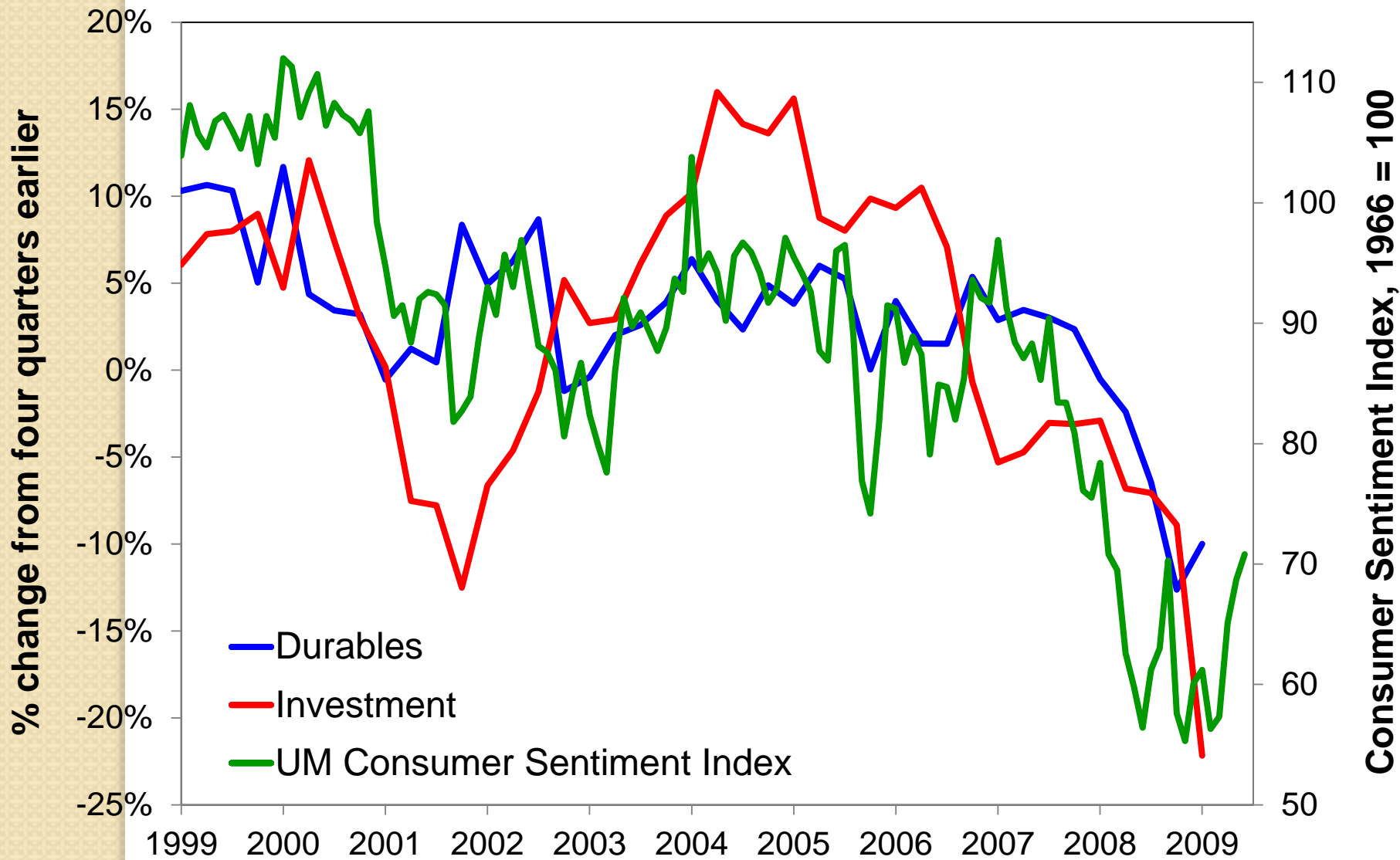
U.S. bank failures by year, 2000–2011



Major U.S. stock indexes (% change from 52 weeks earlier)



Consumer sentiment and growth in consumer durables and investment spending



Real GDP growth and unemployment

