The Great Recession and the Short-Run Model

— Week 11 —

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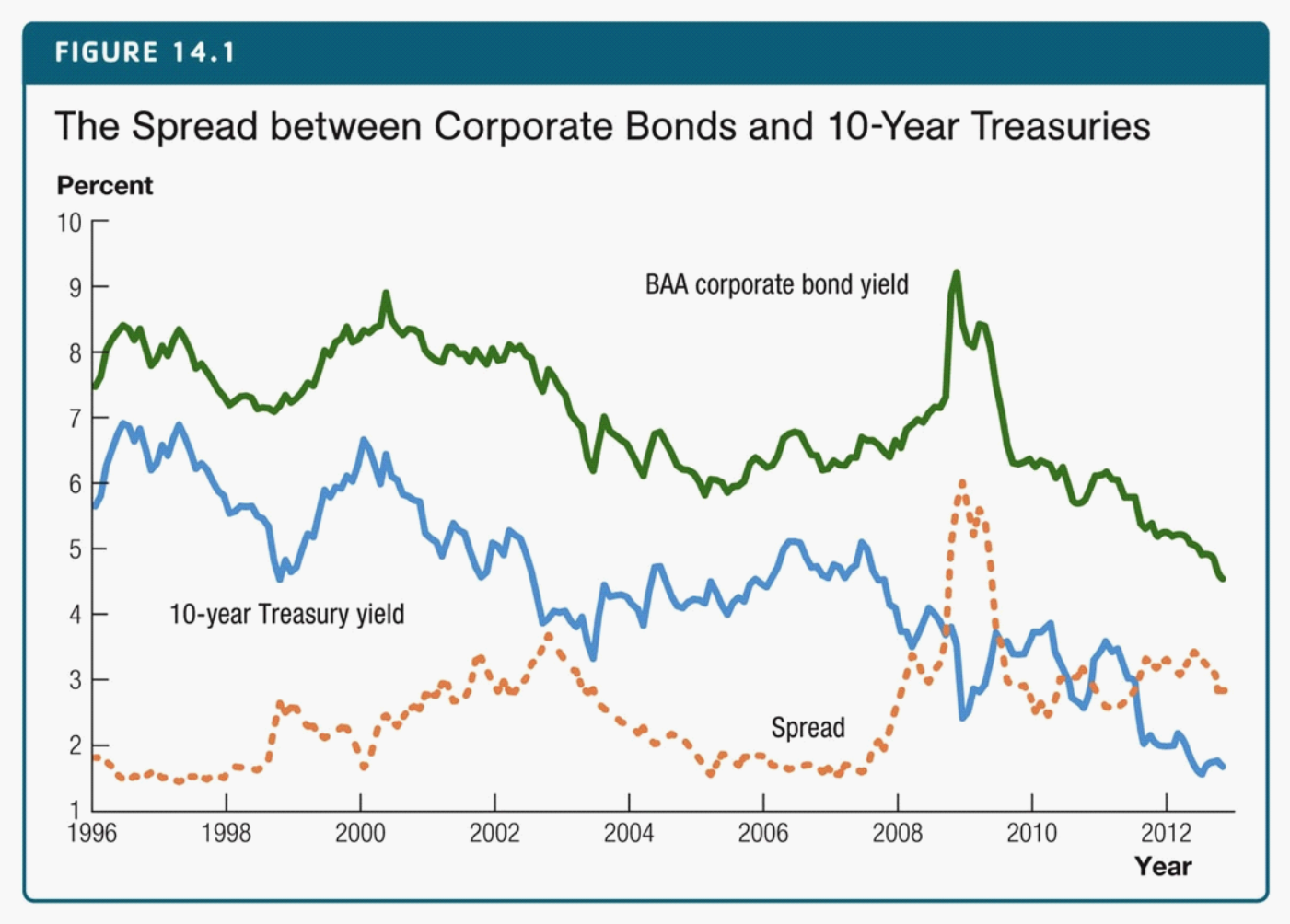
Summary

I – Financial Considerations in the Short-Run Model

Financial Frictions

1. Financial friction
    1. A financial factor that distorts **NORMAL** market interest rates
    2. Central Bank may reduce interest rates and market rates may increase
    3. Risk: high uncertainty may lead to increased risk
    4. Spreads: increased risk leads to increasing spreads
2. This was responsible for the spread in interest rates.
3. Deepening instead of mitigating the downturn

Frictions and the spread



Financial frictions into our short-run model

1. The fundamental equation with frictions

$$R = R^{\text{ff}} + \bar{f}$$

- R: Real interest rate
- R^{ff}: Real interest rate at which firms borrow in financial markets
- $\bar{f}$: Financial friction

1. During normal times we assume $\bar{f} = 0$.
2. During a financial crisis: $\bar{f}$ rises and interferes with the Fed's ability to stimulate the economy.

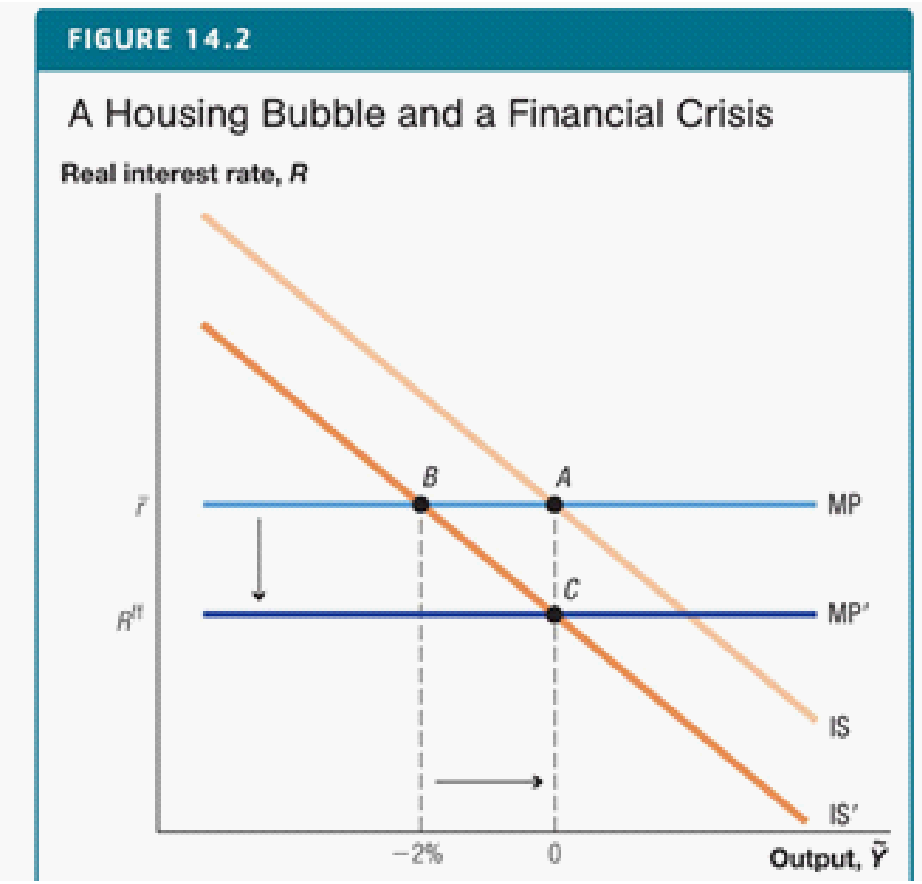
Stabilize the economy after the bursting of a housing bubble

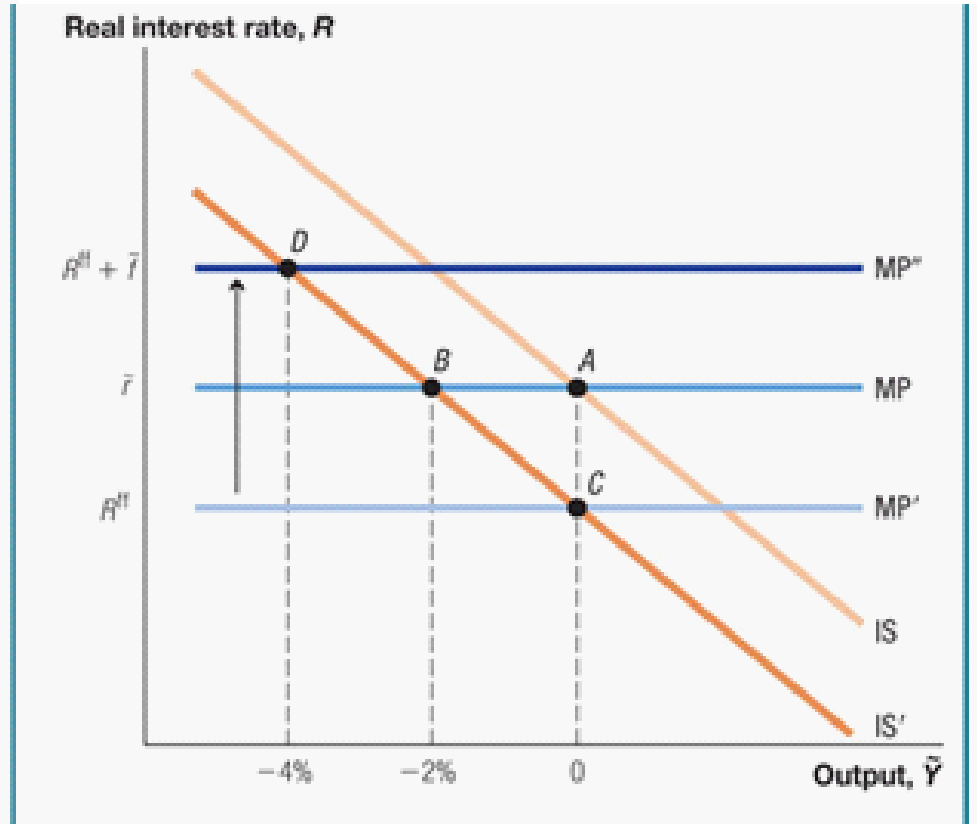
Friction in the IS/MP Framework

1. The Fed may lower the interest rate to stimulate the economy.
2. Counteracts the negative aggregate demand shock.
3. The collapse of a housing bubble causes the IS curve to shift back, producing a recession at point B. In response, the Fed lowers the fed funds rate, pushing the economy back to its potential at point C.
4. The financial crisis raises interest rates despite the Fed's efforts, producing a deep recession at point D.

Stabilize the economy after the bursting of a housing bubble

Friction in the IS/MP Framework





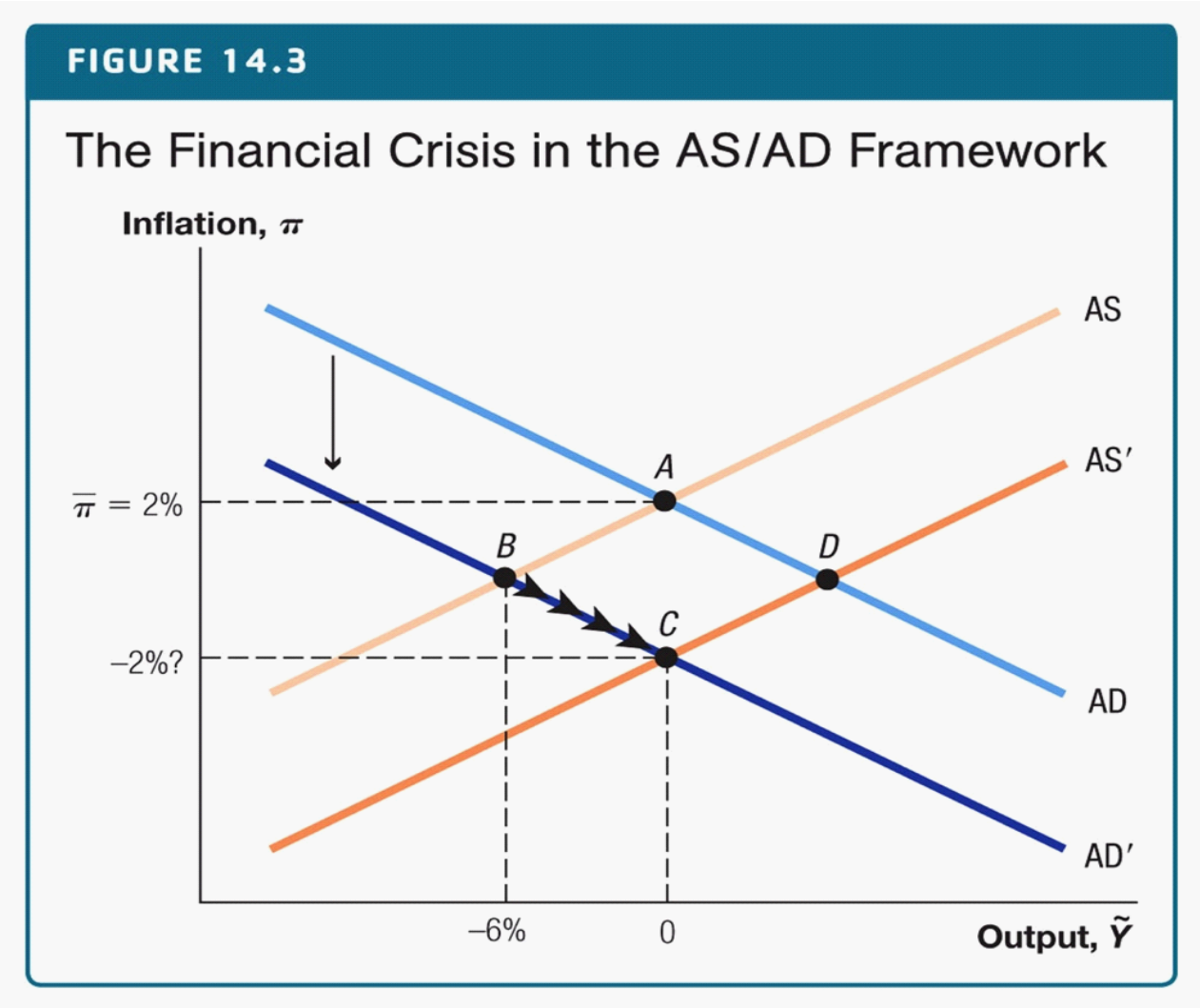
Stabilize the economy after the bursting of a housing bubble

Friction in the AS/AD Framework

1. Financial friction:
   1. Works through investment in the IS curve
   2. It shifts the AD curve inward, just like a negative demand shock.
2. The current situation has two related shocks that shift the AD curve down and to the left.
   1. A decline in housing and equity prices that reduces household wealth
   2. A rise in financial friction
3. These shocks result in a **deep recession** ... and **deflation**

Stabilize the economy after the bursting of a housing bubble

Friction in the AS/AD Framework



Deriving the New AD Curve

- Remember that

The IS curve:	$\tilde{Y}_t = \bar{a} - \bar{b}(R_t - \bar{r})$
The monetary policy rule:	$R_t^{ff} - \bar{r} = \bar{m}(\pi_t - \bar{\pi})$
The financial friction equation:	$R_t = R_t^{ff} + \bar{f}$

- Substituting this into the IS curve yields the new AD curve

$$\tilde{Y}_t = \underbrace{\bar{a} - \bar{b}\bar{f}}_{\text{AD shock}} - \bar{b}\bar{m}(\pi_t - \bar{\pi})$$

The Dangers of Deflation: the Economist

The dangers of deflation

The pendulum swings to the pit

Politicians and central bankers are not providing the world with the inflation it needs; some economies face damaging deflation instead

Oct 25th 2014 | WASHINGTON, DC | From the print edition

The Dangers of Deflation

Remember the Fisher equation

$$R_t = i_t - \pi_t$$

1. When inflation is negative, it raises the real interest rate ().
2. But in normal times, the central bank can handle this by lowering the nominal interest rate (i_t)
3. Surprise: imagine that nominal rates are cut ... and cut ... so they arrive at the Zero Lower Bound (ZLB)
4. Nominal interest rates can't be negative
5. Fed "runs out of room" with monetary policy

A liquidity trap: or the ZLB

1. Nominal interest rates reach the ZLB
2. Aggregate Demand can not be further stimulated because nominal rates can not go below zero
3. If inflation goes negative, three main problems:
    1. Wealth transfer from debtors to creditors (debtors have a higher propensity to consumption than creditors)
    2. Successive delaying consumer spending (tomorrow will be cheaper than today)
    3. Delaying investment spending due to very high real interest rates
4. **A deflationary spiral**: prices go down, demand goes down, prices go even further down, ...

II – Policy Responses to the Financial Crisis

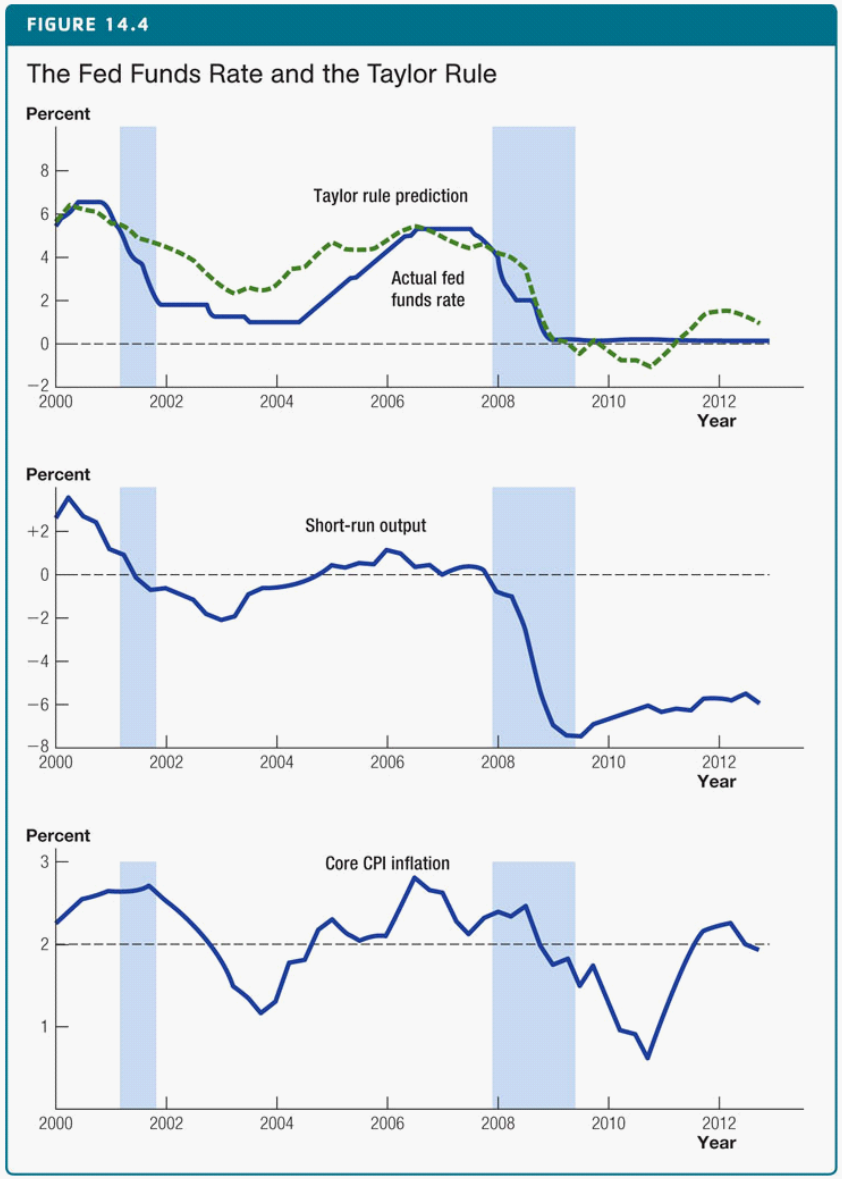
1. Recall our simple policy rule, which depends mainly upon inflation

$$i_t = R_t + \pi_t = \pi_t + \underbrace{\bar{r} + \bar{m}(\pi_t - \bar{\pi})}_{=R_t}$$

2. **The Taylor Rule** also allows the current level of short-run output to influence the fed funds rate
3. Something like this

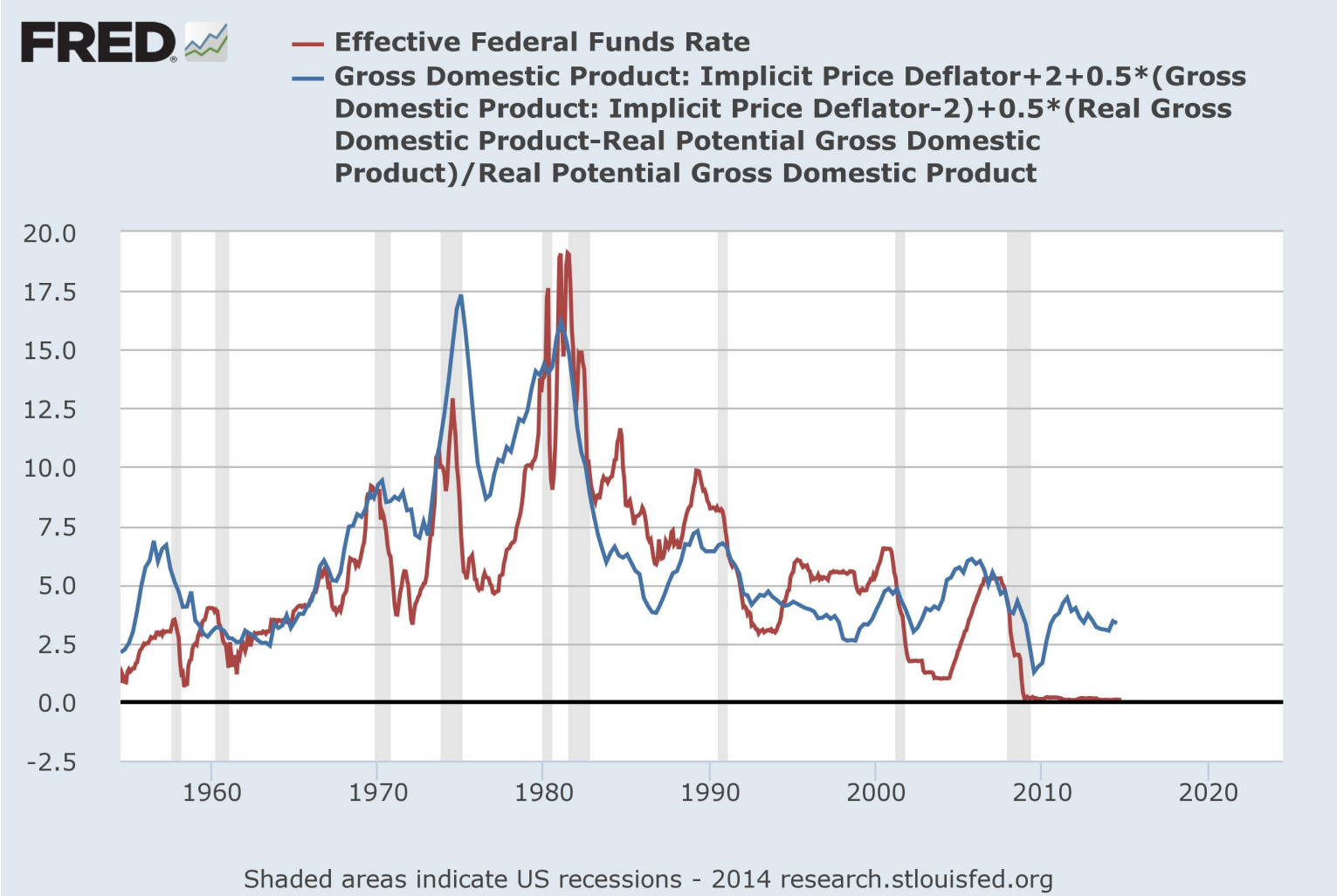
$$i_t = \pi_t + \bar{r} + \bar{m}\underbrace{(\pi_t - \bar{\pi})}_{cyclical\ \ \text{inf}lation} + \bar{n}\underbrace{(Y_t - \bar{Y})}_{=\tilde{Y}_t}$$

The Taylor Rule and Monetary Policy



The Taylor Rule and Monetary Policy

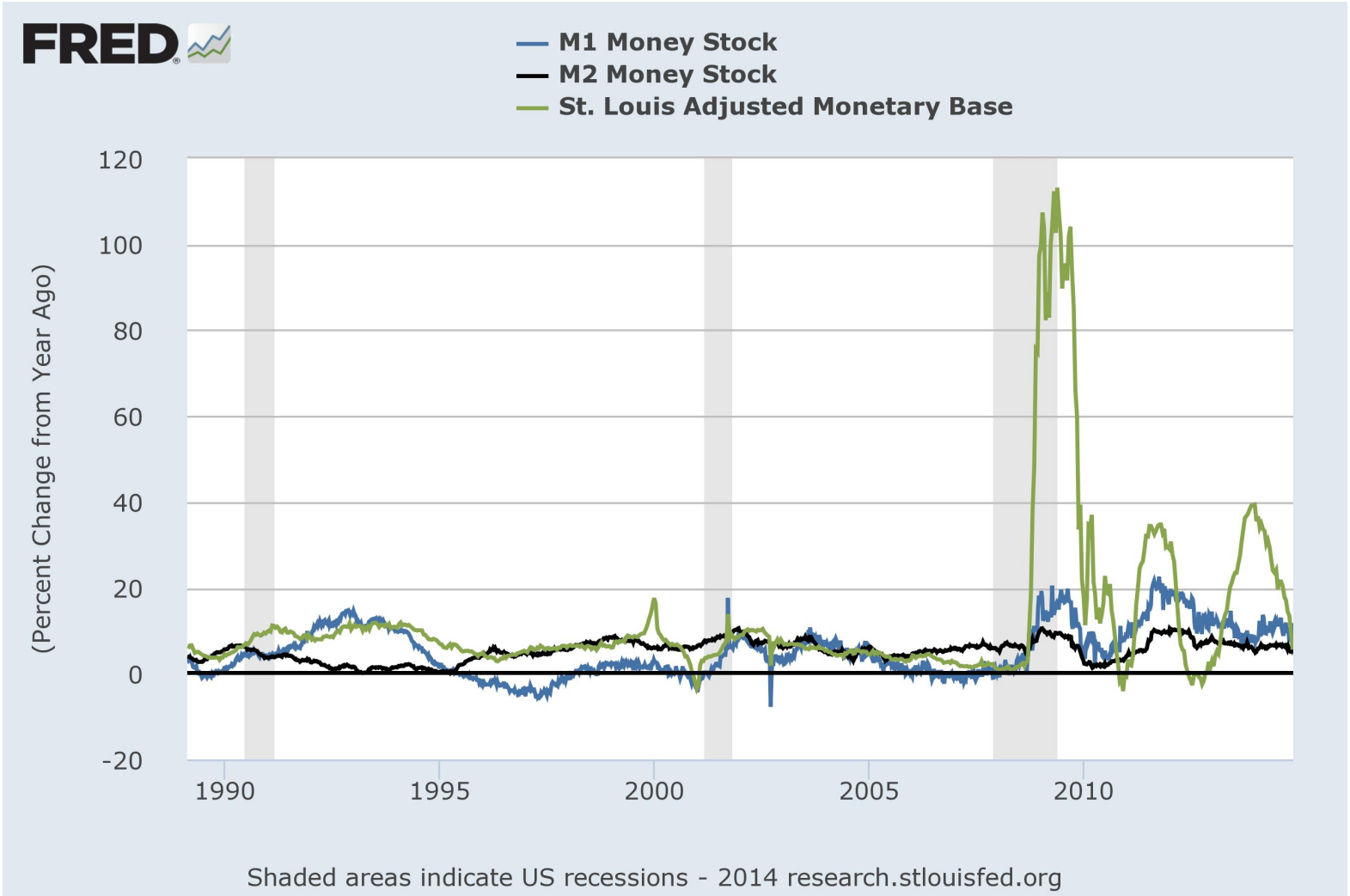
$$i_t = \pi_t + 2\% + 0.5(\pi_t - 2\%) + 0.5(Y_t - \bar{Y})$$



The Money Supply

1. Fed is currently focused on stimulating the economy and preventing deflation.
2. Rapid expansion of the money supply at the end of 2008 and beginning of 2009
3. No signal of inflation
4. No sign of a robust economic upturn

The growth rate of Money Supply



Should Monetary Policy Respond to Asset Prices?

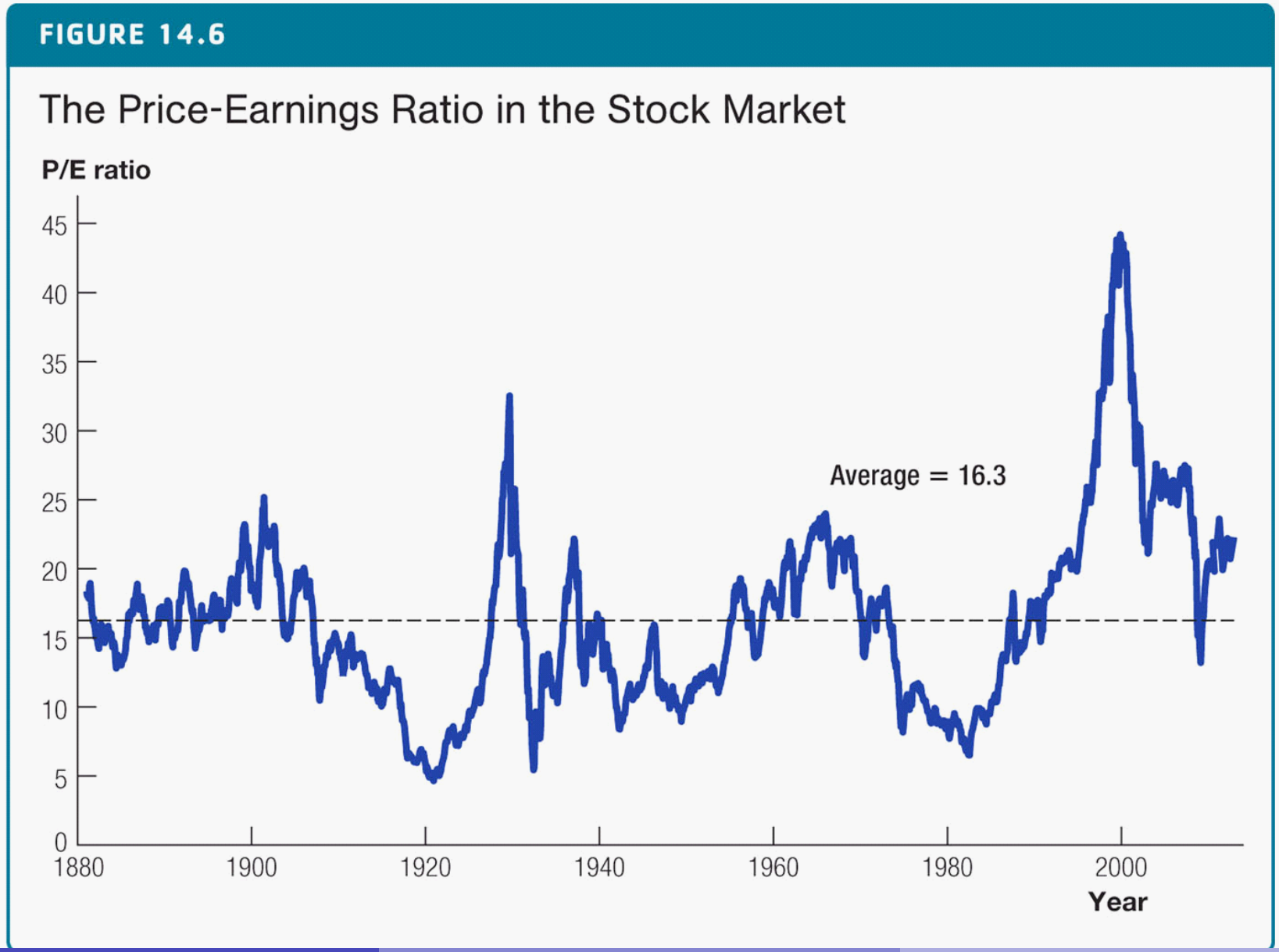
1. If there is a bubble in the stock market, or in the housing market, what should the Central Bank do?
2. Should it raise rates to burst those bubbles at an early age? Or not?
3. The apparently common sense answer seems to be: if there is a bubble, let's avoid bigger problems, let's burst it as soon as possible.
4. How? Let's use monetary policy, let's increase short term interest rates ... even if inflation is below target
5. Two main problems may arise:
    1. Ben Bernanke argument in 2002
    2. The Swedish case in 2011/2013

The Bernanke argument

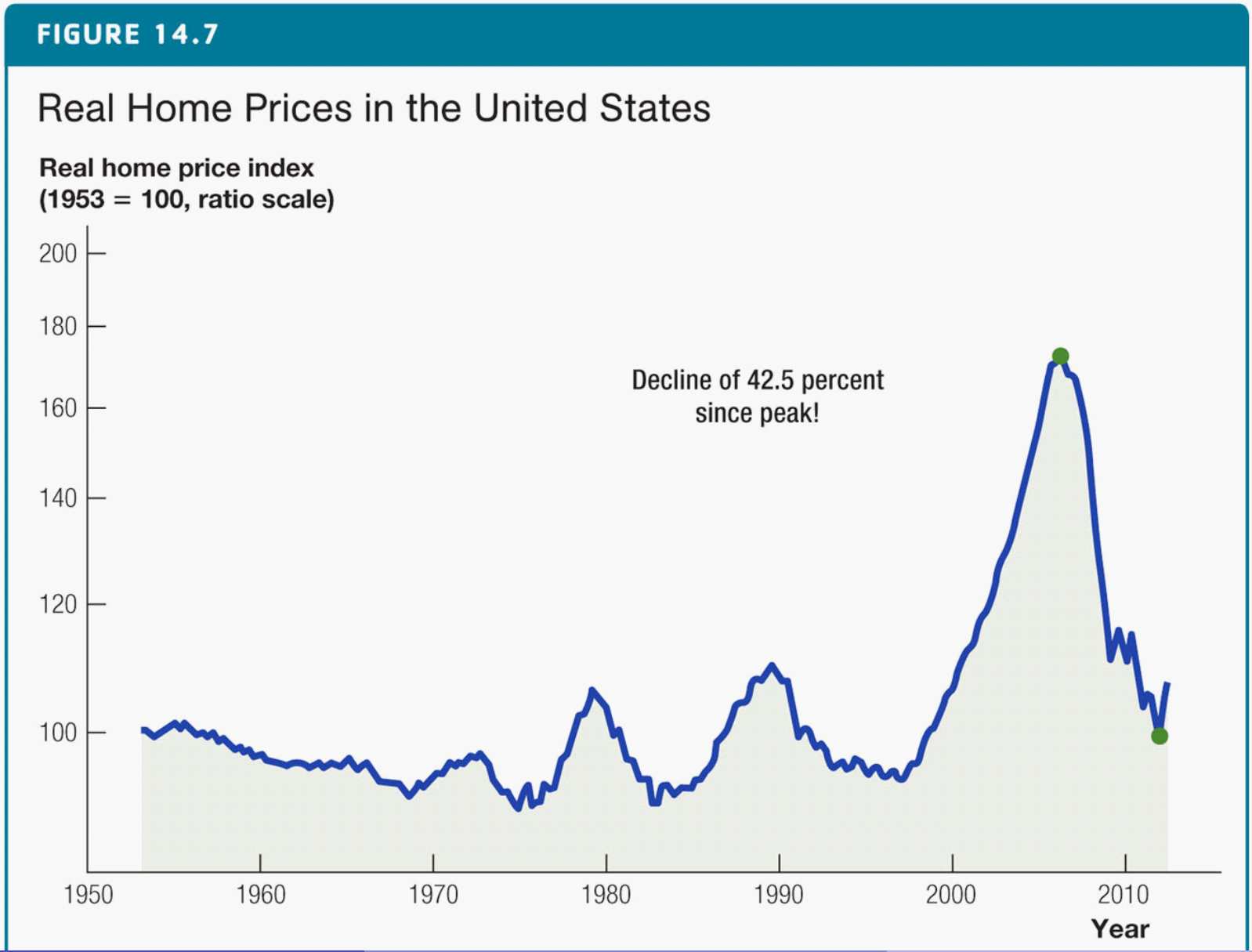
Ben Bernanke argued in 2002 that:

1. It is often difficult to tell if there is a bubble in real time.
2. Even if it is known that there is a bubble, standard monetary policy is too coarse an instrument to deal with the problem.
3. Policymakers should use more precise instruments.
    1. capital requirements
    2. the regulation of lending standards

The Bernanke argument



The Bernanke argument



The Swedish case in 2011/2013

Governor Ingves versus Deputy Governor Svensson

Central banks: Stockholm syndrome

Richard Milne in Stockholm Author alerts

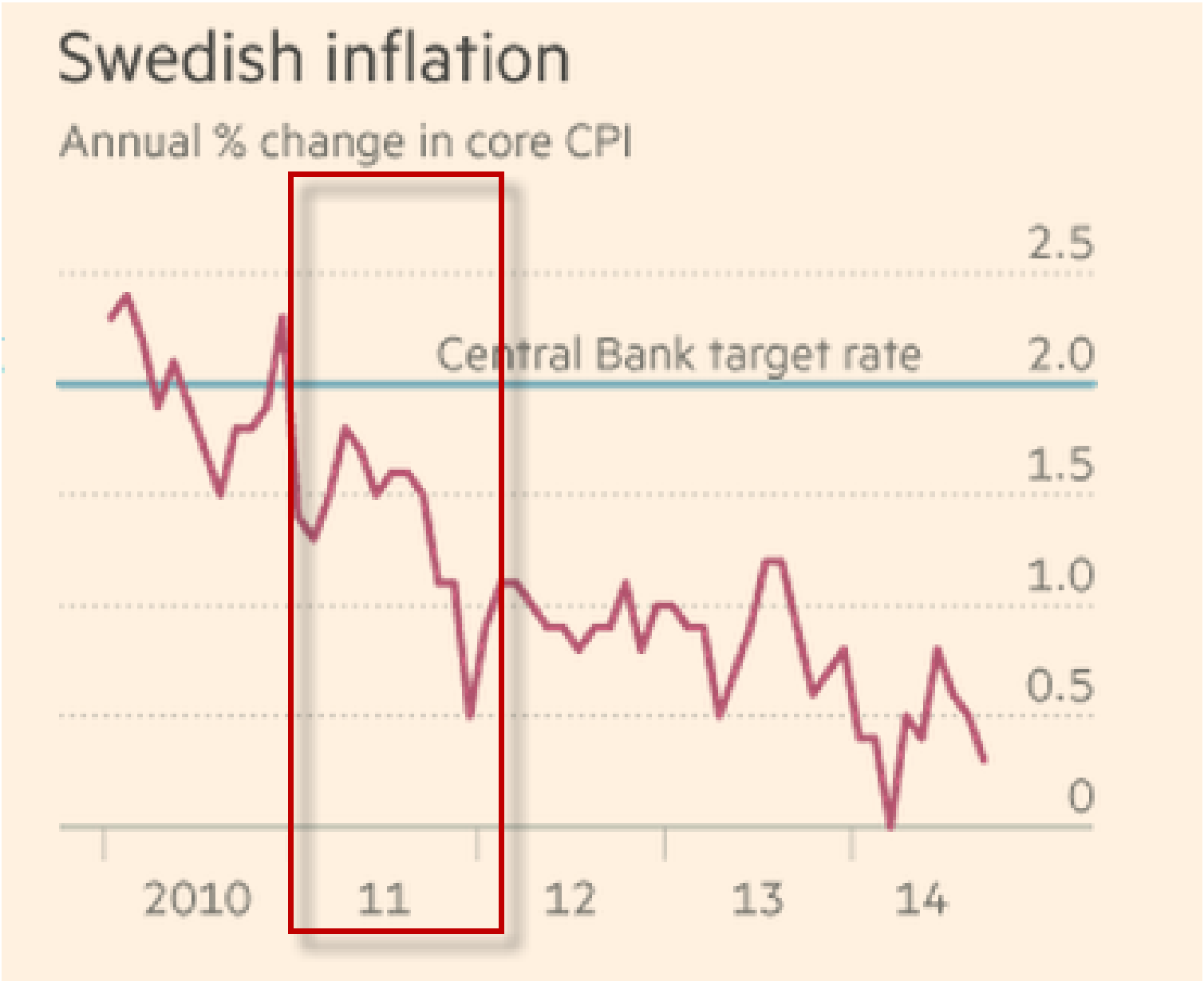
Swedish experience puts the Riksbank at the fore of debate on when to end crisis-fighting measures

Stefan Ingves (left), the governor of the Riksbank, clashed with Lars Svensson (right) over monetary policy

The Swedish case in 2011/2013

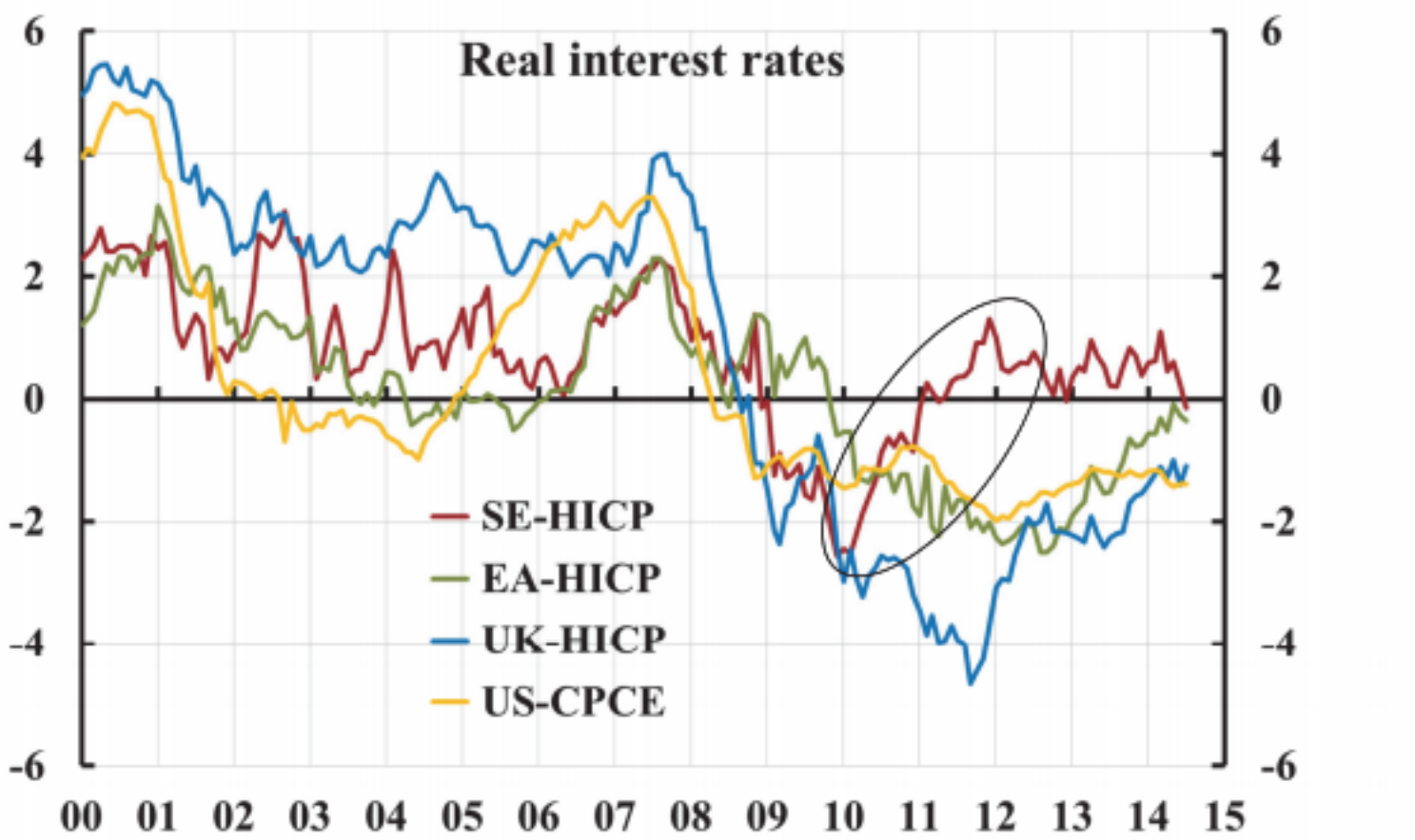
1. Sweden was experiencing from 2010 onwards a clear trend of lower and lower inflation
2. Deflation was more than a far distant possibility
3. However, from 2010–2012 the Swedish Central Bank increased short term rates
4. Why? Because of the fear of a housing bubble.
5. Ingves strongly supported the increase in short term rates
6. Svensson (a top world macroeconomist) opposed ... and resigned in 2012
7. In October 2014, the Central Bank cut short term rates ... to ZERO.

The Swedish case in 2011/2013



The Swedish case in 2011/2013

Real policy rate in Sweden, UK, and US, real Eonia rate in euro area



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The Fed's Balance Sheet: Quantitative Easing

1. When conventional monetary policy failed, the Fed and the Treasury created new policies.
2. The Fed has dramatically reshaped its balance sheet.
3. The size of the balance sheet more than doubled, growing by more than $3 trillion.
4. The composition of assets and liabilities also changed significantly.
5. From short term debt to long term debt: more risk in the balance sheet of the Fed

The Fed's Balance Sheet: Quantitative Easing

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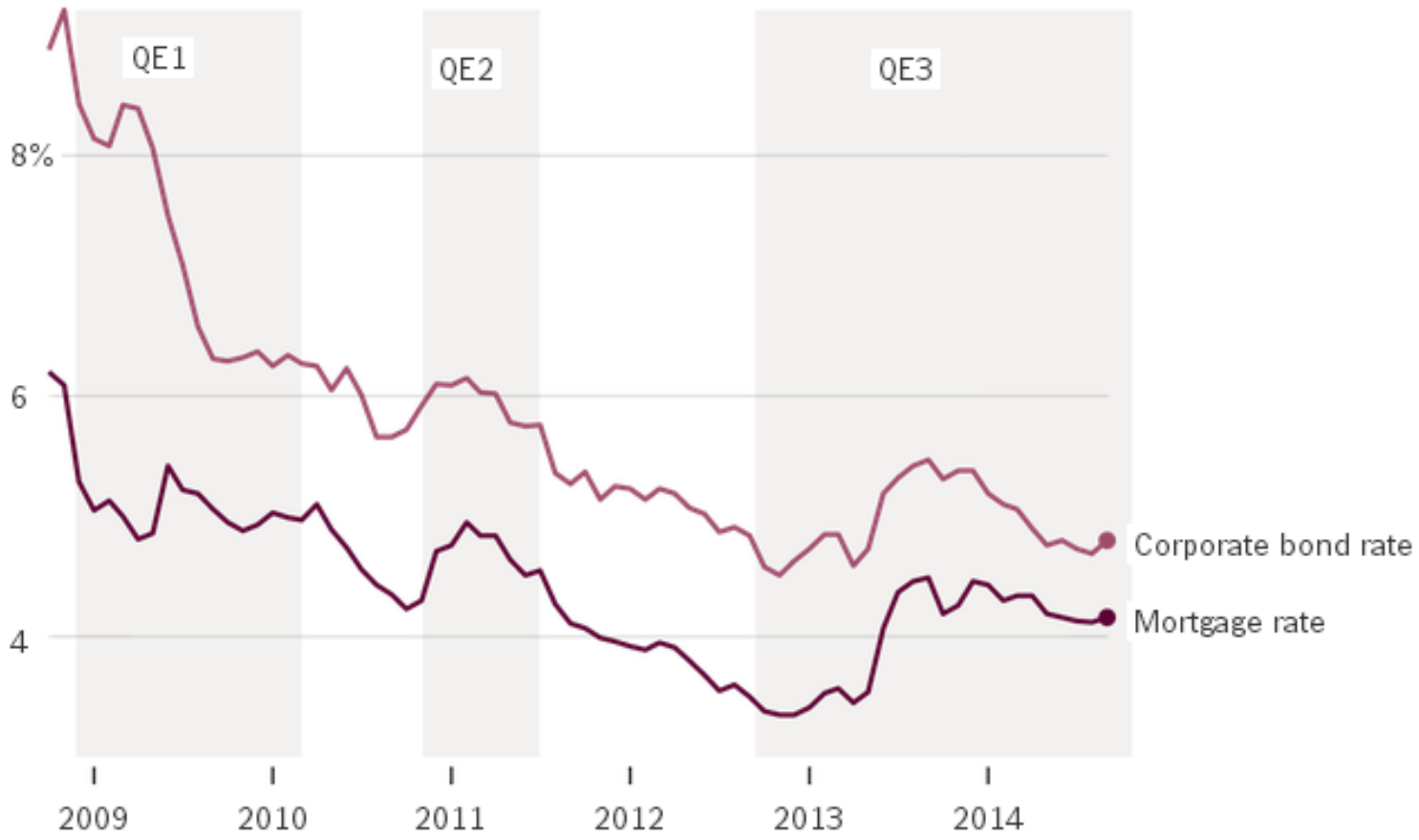
The Fed's Balance Sheet: Quantitative Easing



Mortgage rate is average 30-year fixed-rate mortgage. Corporate bond rate is yield on seasoned Baa-rated bonds.

Source: Moody's, Freddie Mac

The Fed's Balance Sheet: Quantitative Easing

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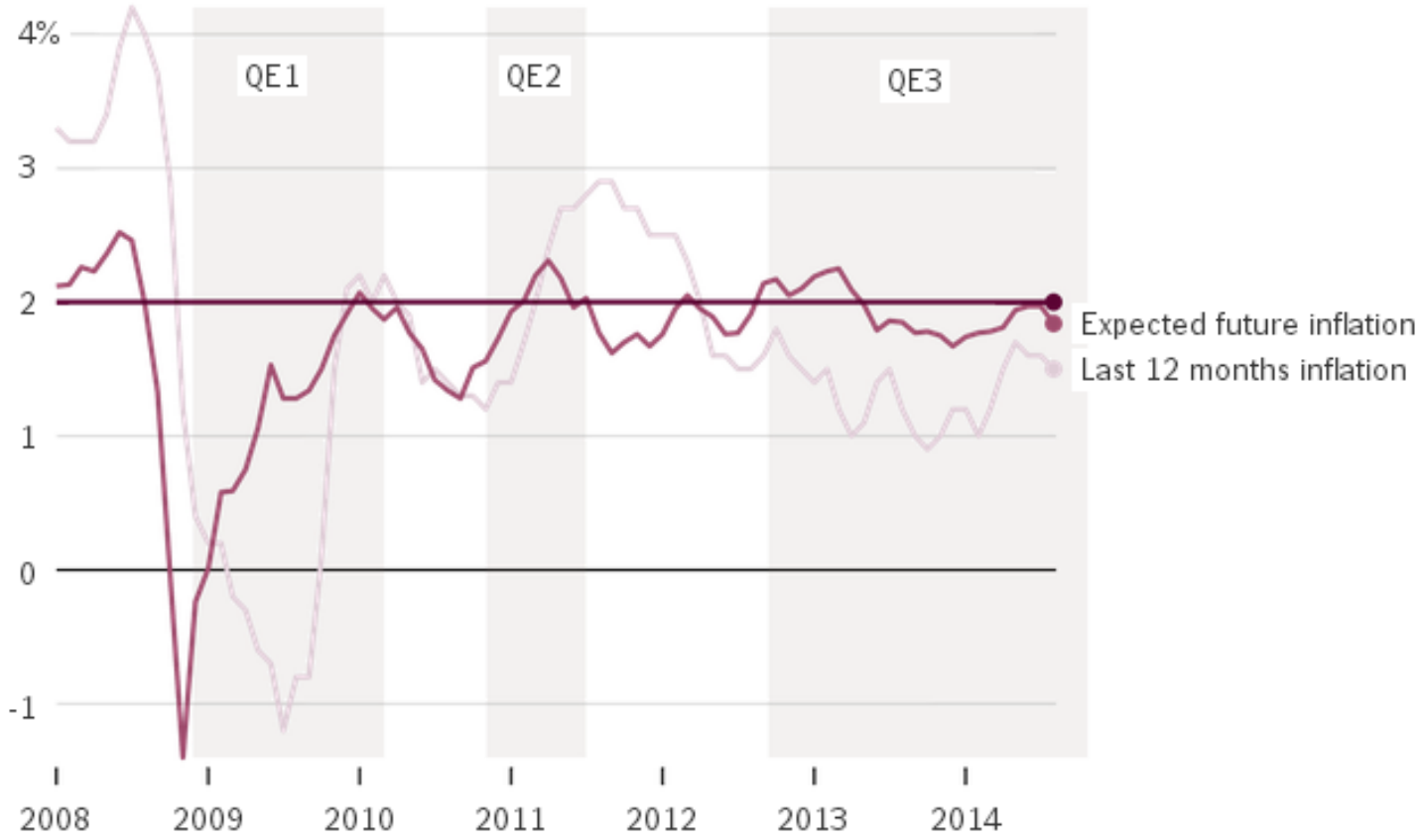
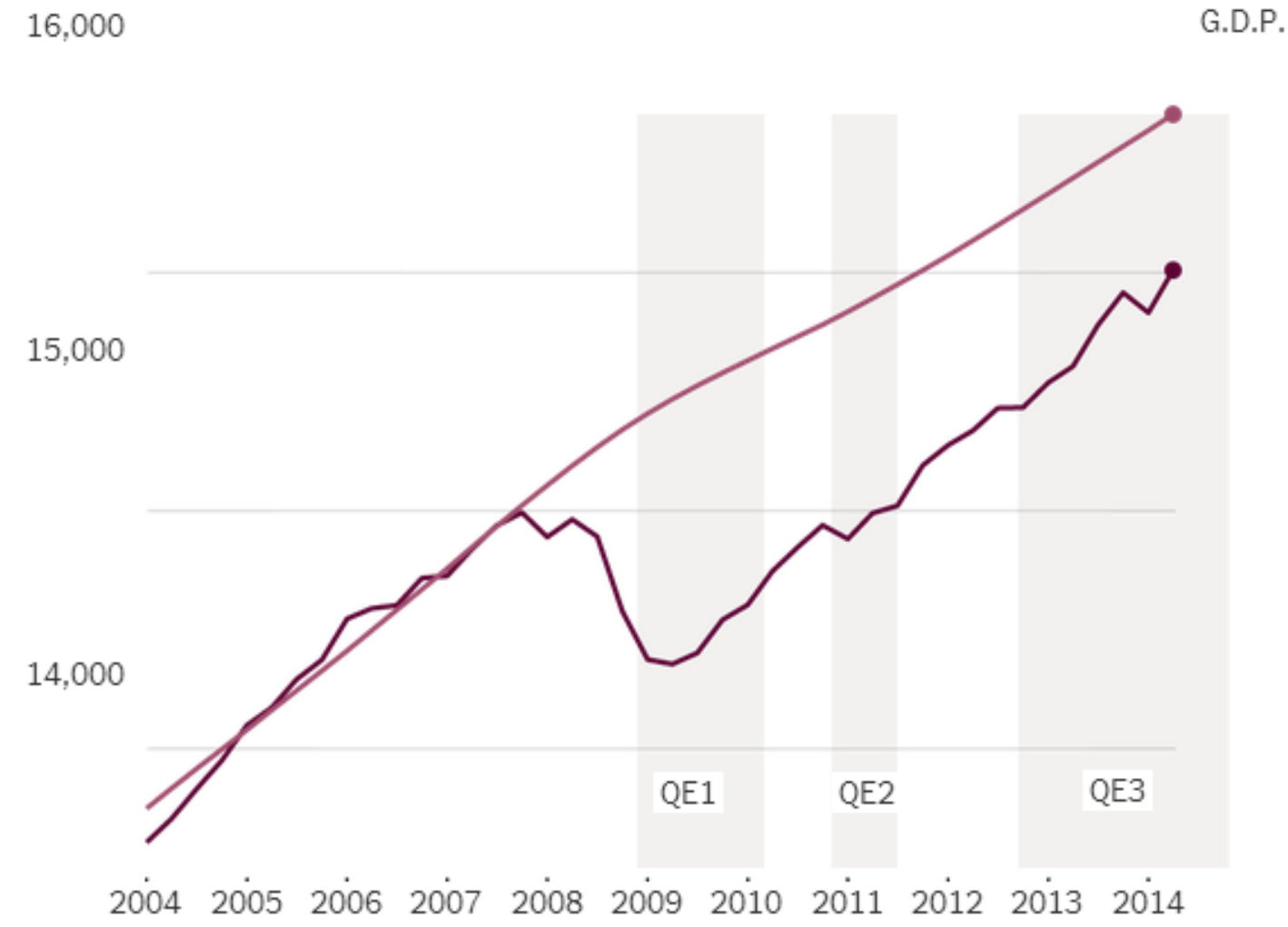


Expected future inflation is five-year breakeven between inflation-adjusted bonds and regular bonds. Last 12 months inflation is year-over-year change in the personal consumption expenditures price index.

Source: Federal Reserve, Bureau of Economic Analysis

The Fed's Balance Sheet: Quantitative Easing



Source: Congressional Budget Office, Bureau of Economic Analysis

Fiscal Stimulus

1. In February 2009, President Obama signed a $787 billion stimulus package.
2. Tax cuts and new government spending
3. Increased the deficit to 10 percent of GDP in 2009
4. Only 3 percent in 2008
5. Economists agree: fiscal stimulus is necessary.
6. Economists disagree: types of spending
7. Economists disagree: relative weight on tax cuts vs. new spending
8. Economists disagree: Ricardian Equivalence

III – Required readings

Required reading

For this week you are required to read **Read Chapter 14** of our adopted textbook.

Charles I. Jones (2014). Macroeconomics, Third Edition, W. W. Norton & Company.