Monetary Policy
and
the Housing Bubble

Ben S. Bernake (2010)

Outline

- Introduction
- Objective
- Evidence
  - Review U.S. Monetary Policy 2002-2006
  - Evaluating the policy
  - Monetary policy and the housing bubble
- Conclusion

Introduction

- Severe financial crisis began in 2007
- Housing bubble
- It’s essential that we learn the lessons from the crisis
- Causes of the crisis are controversial
  - Some assigned monetary policy a central role in crisis
  - Others agued that the policy was appropriate for the macroeconomics conditions at that time

Objective

To review evidence on the link between **monetary policy** and the rapid **house price appreciation**

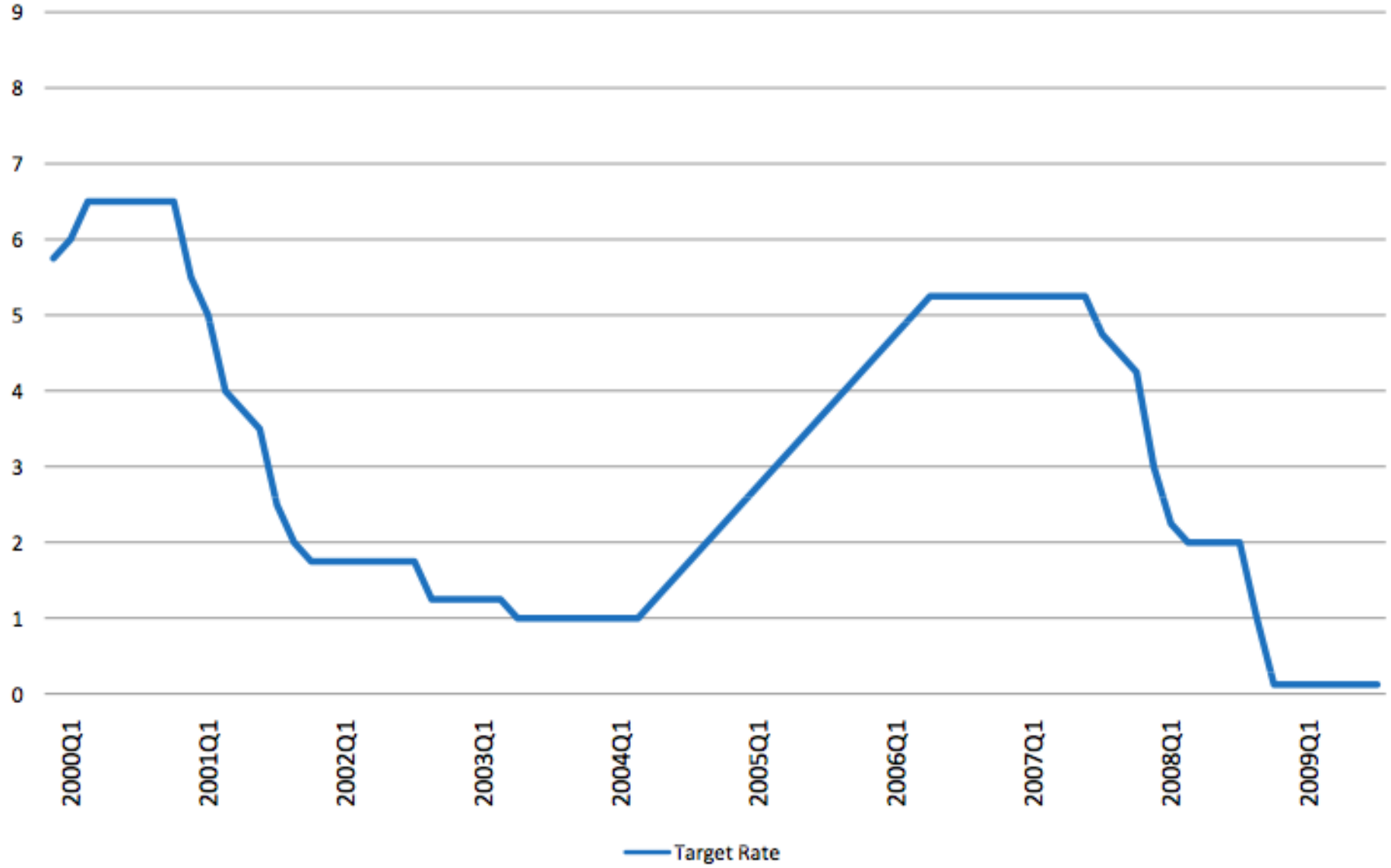
Evidence

- To answer the questions on the relationship between monetary policy and the housing bubble
  - Review U.S. Monetary policy (2002-2006)
  - Evaluate the Tightness or Ease of Monetary Policy
  - Discuss some evidence on the source of housing bubble
  - Draw some lessons for future monetary policy

U.S.Monetary Policy, 2002-2006

- In the consequence of 2001 recession
- Focus on one key indicator of monetary policy :
  - The target federal funds rate

The Target Federal Funds Rate



Evaluating the Tightness or Ease of Monetary Policy

- Whether policy easier than necessary ?
- Approach to this question :
  - Compare Federal Reserve Policies during that period to the recommendations derived from Taylor rule

Evaluating the Tightness or Ease of Monetary Policy

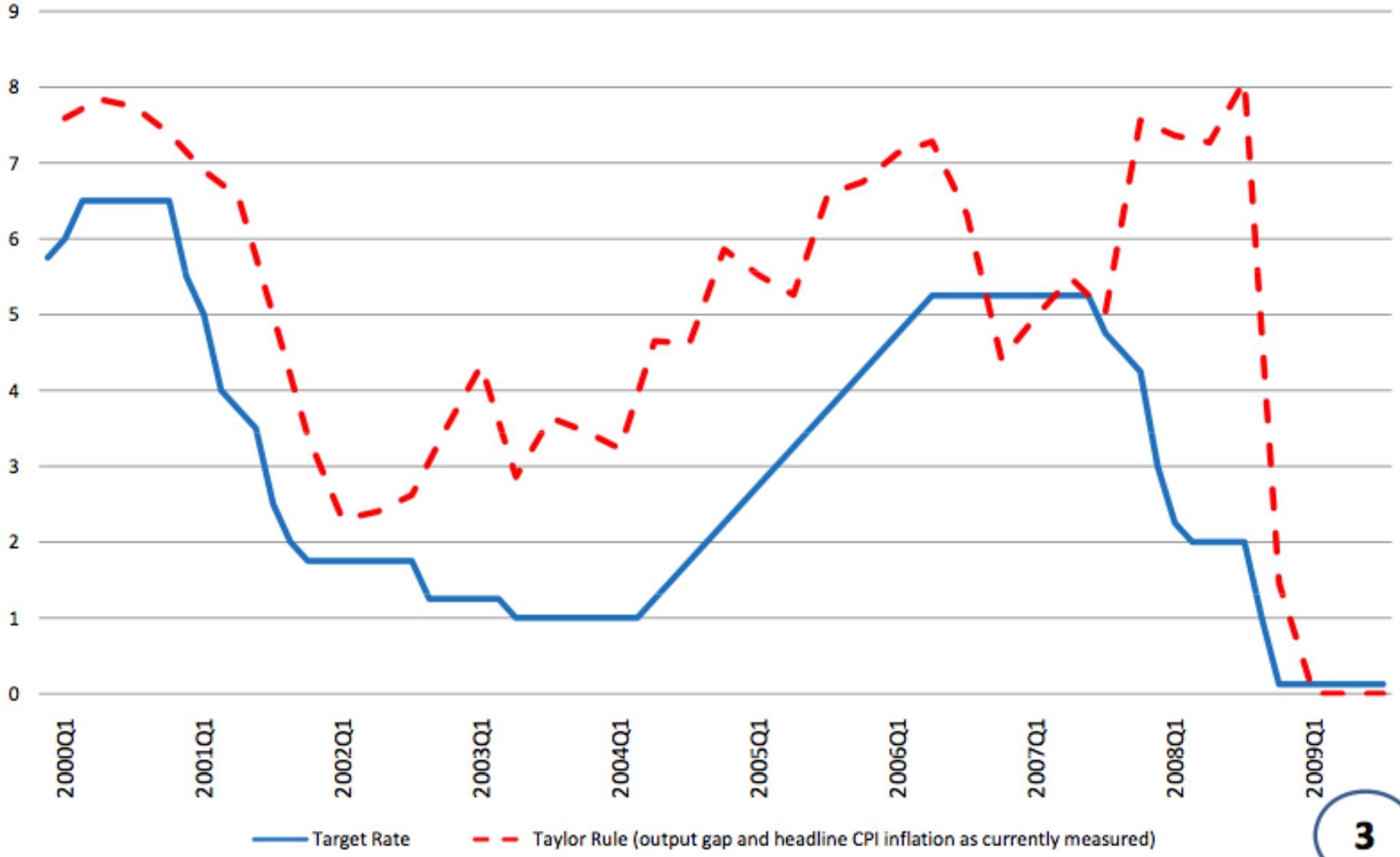
General form of the Taylor rule:

$$i_t = 2 + \pi_t + a(\pi_t - \pi^*) + b(y_t - y_t^*)$$

where

- i_t is the prescribed value of the policy interest rate in a given period t;
- $\pi_t - \pi^*$ is the deviation of the actual inflation rate π_t from its target π^* in period t;
- $y_t - y_t^*$, the "output gap," is the deviation of actual real output y_t from potential output y_t^* in period t; and
- a and b are positive numbers.

The Target Federal Funds Rate and the Taylor (1993) Rule Prescriptions



Source: Federal Reserve Board, Bureau of Labor Statistics, Bureau of Economic Analysis, and Federal Reserve staff calculations.

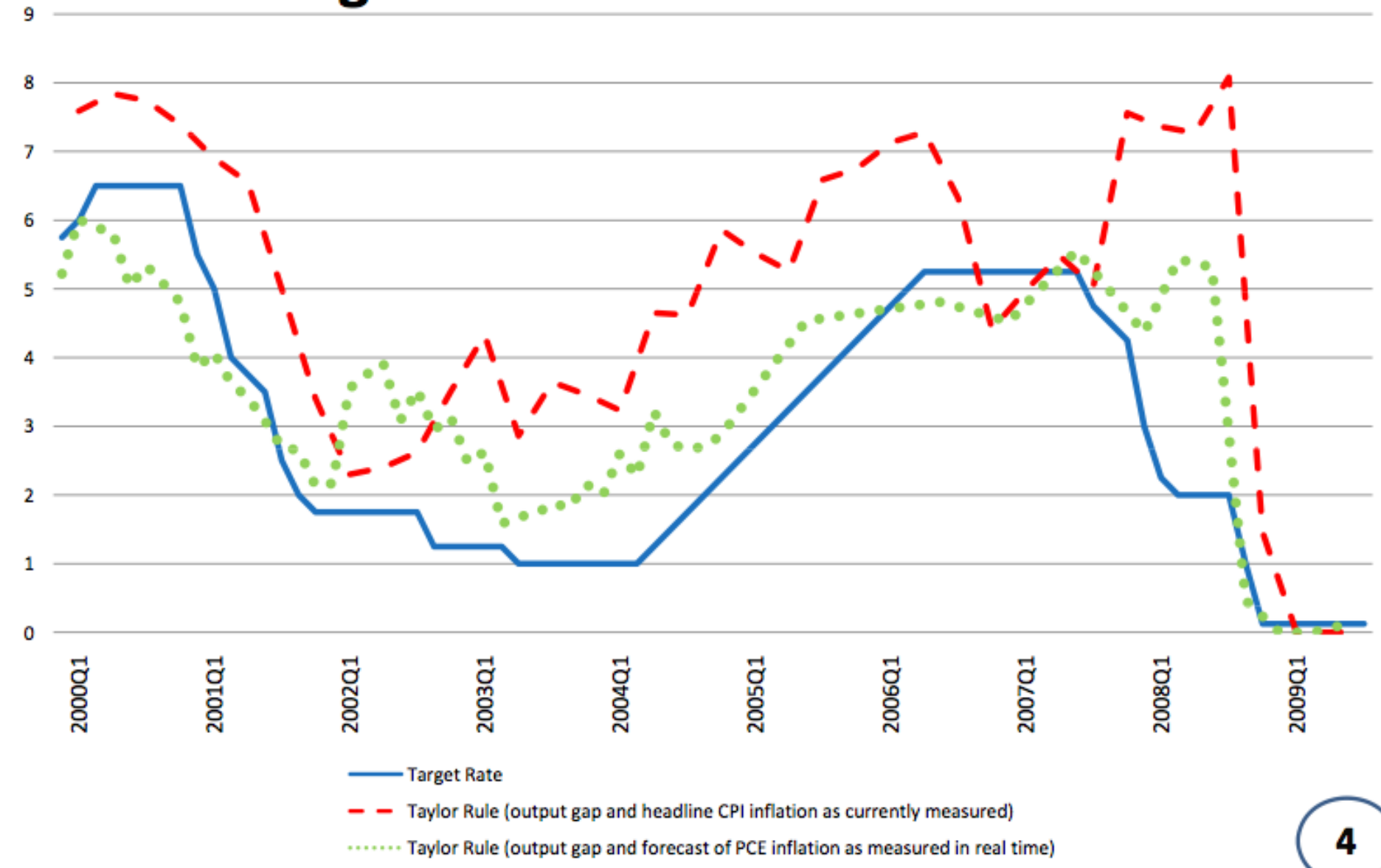
Evaluating the Tightness or Ease of Monetary Policy

- However, Taylor rule is just a rule of thumbs
- Some disagreement on about the details of the construction of such rule
- Most significant concern on the use of Taylor rule in this paper
  - - Monetary policy works with a lag
  - - The **forecast values** should be used rather than **current value**

Evaluating

- Thus, an alternative version of Taylor rule is used
  - Replace the inflation measure in the model
  - Use forecast of PCE inflation as measure in real time instead of headline CPI inflation as currently measured

The Target Rate and the Taylor Rule Prescriptions Using Real-Time Inflation Forecasts



Source: Federal Reserve Board, Bureau of Labor Statistics, Bureau of Economic Analysis, and Federal Reserve staff calculations.

Monetary Policy
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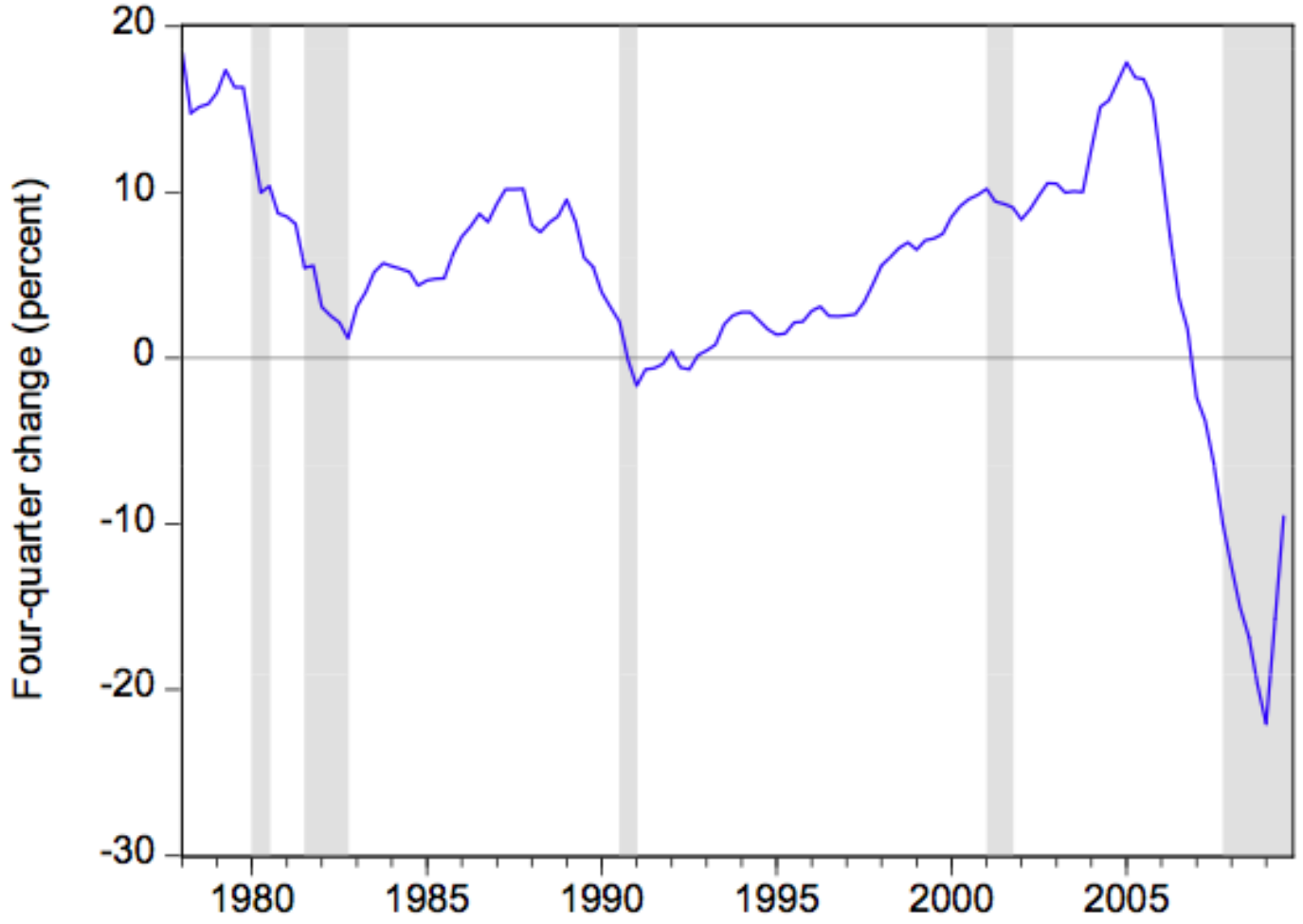
Rate of Increase in House Prices 1978:Q1-2009:Q3



Note: Shaded areas refer to NBER recessions.

Source: FirstAmerican LoanPerformance.

Monetary Policy and the Housing Bubble

- **Housing bubble might have some contribution from monetary policy**

- To assesse the possible contribution, consider :
  - 1. Magnitude of house price increase
  - 2. International evidence

1. Magnitude of house price increase

Question

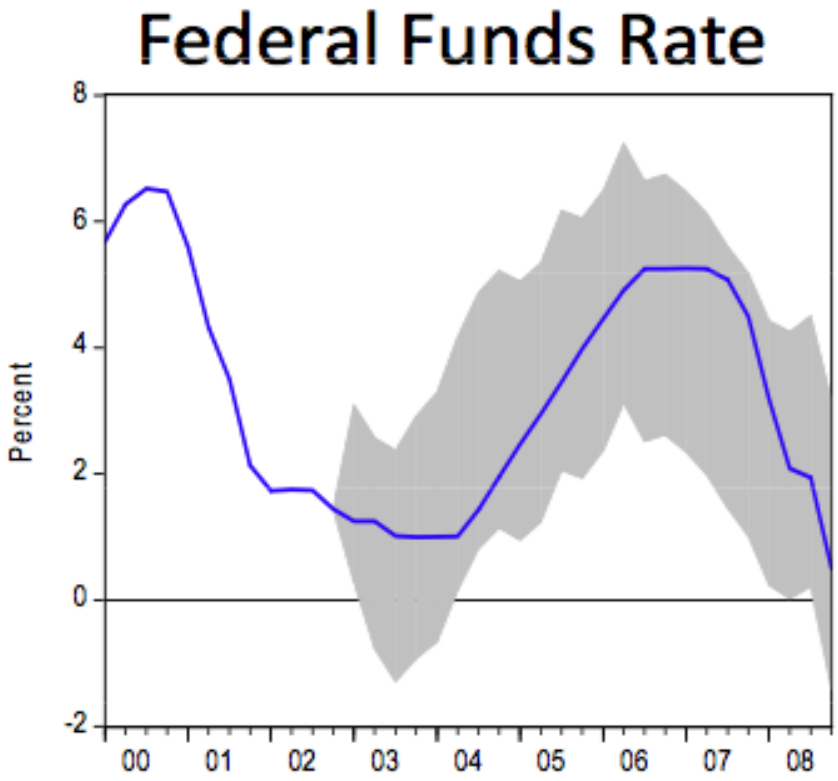
- Can accommodative monetary policies account for magnitude of increase in house price ?
- If not, what does account for it ?

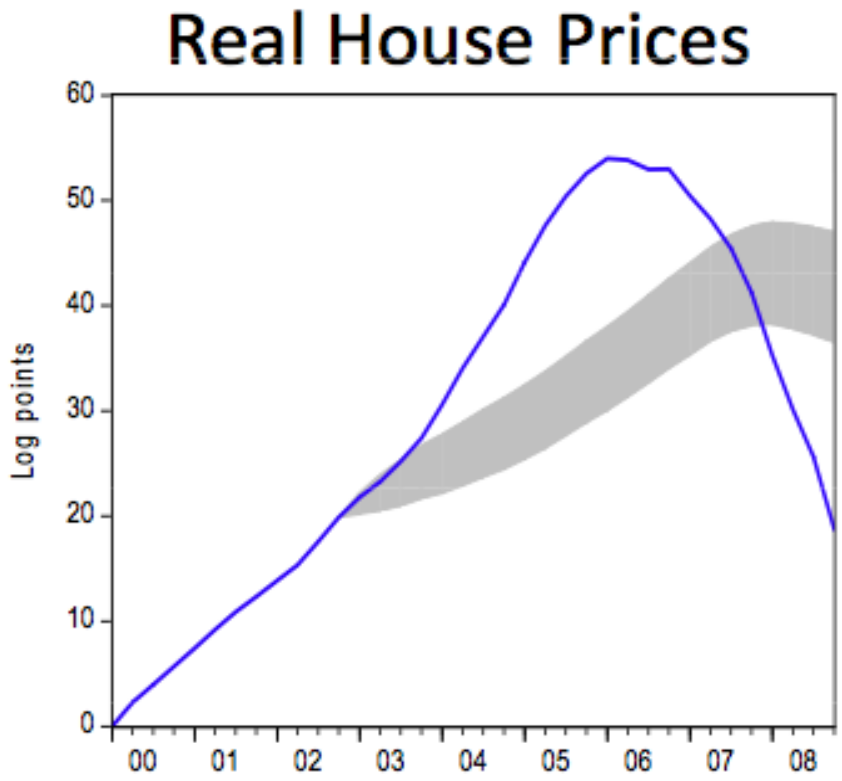
Methodology

- Econometric model: Vector autoregression Model
- Variables : Measure of economic growth, inflation, unemployment, residential investment, house prices, Federal Funds rate
- Period : 1997-2002
- Use model to predict the behavior of variables studied

Results

Conditional Forecasts for the Federal Funds Rate and House Prices





Note: Shaded areas denote values within 2 standard deviations of the conditional forecast of each variable.

Nontraditional Mortgage Features

(Percent of ARM originations)

	Interest Only		Extended Amortization		Negative Amortization	Pay-Option
	Subprime	Alt-A	Subprime	Alt-A	Alt-A	Alt-A
2000	0	3	0	0	---	---
2001	0	8	0	0	---	---
2002	2	37	0	0	---	---
2003	5	48	0	0	19	11
2004	18	51	0	0	40	25
2005	21	48	13	0	46	38
2006	16	51	33	2	55	38

2. International Evidence

Question

- If monetary policy was an important source of house price appreciation in U.S. , countries with easier monetary policies should have significant rise in house price as well

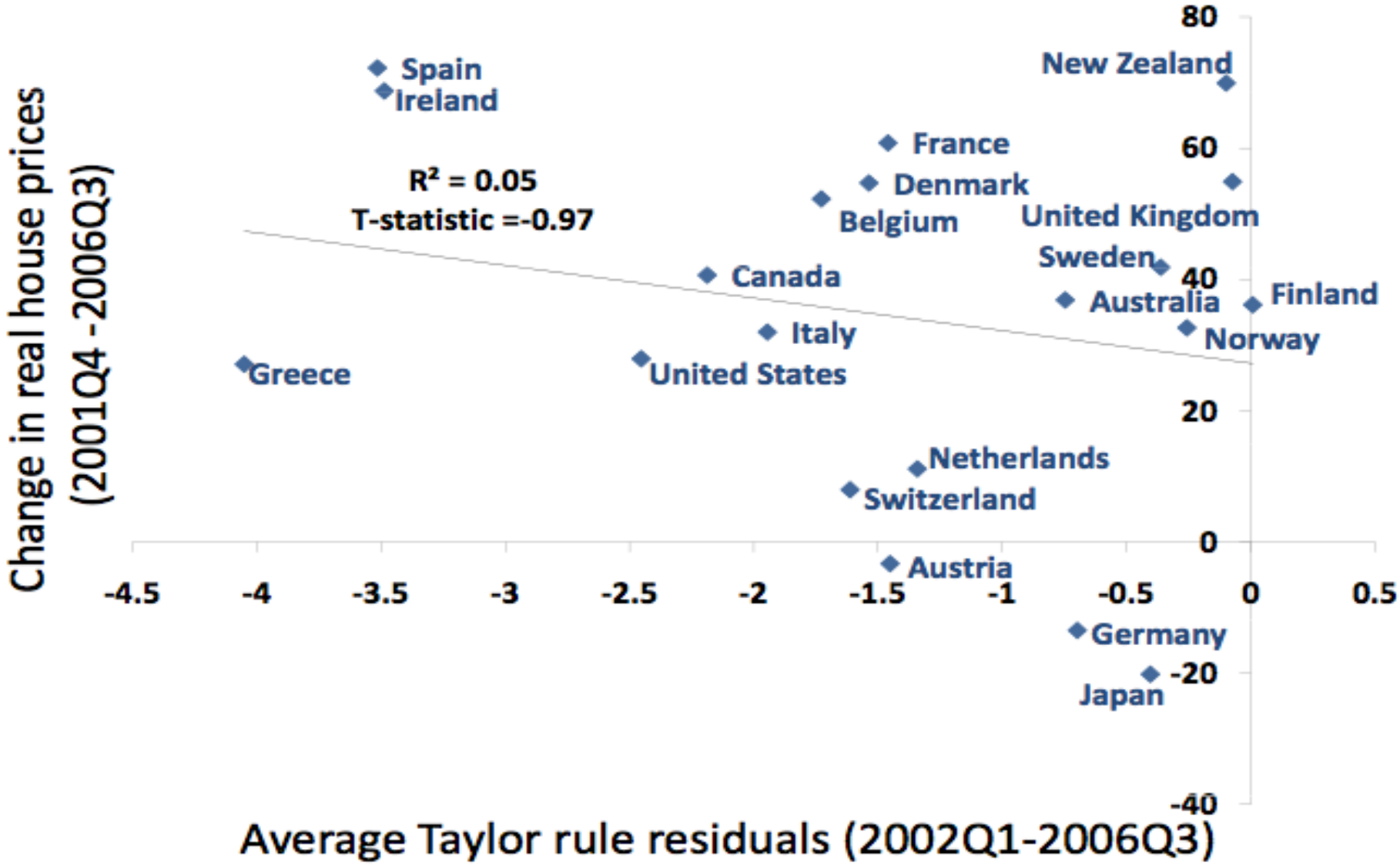
Methodology

- Econometric model: The relationship between monetary policy stance and house prices appreciation

- Data : - Percentage change in real house price
  - Average deviation of policy from the prescription of Taylor rule

- 20 industrial countries

Monetary Policy and House Prices in the Advanced Economies



2. International Evidence

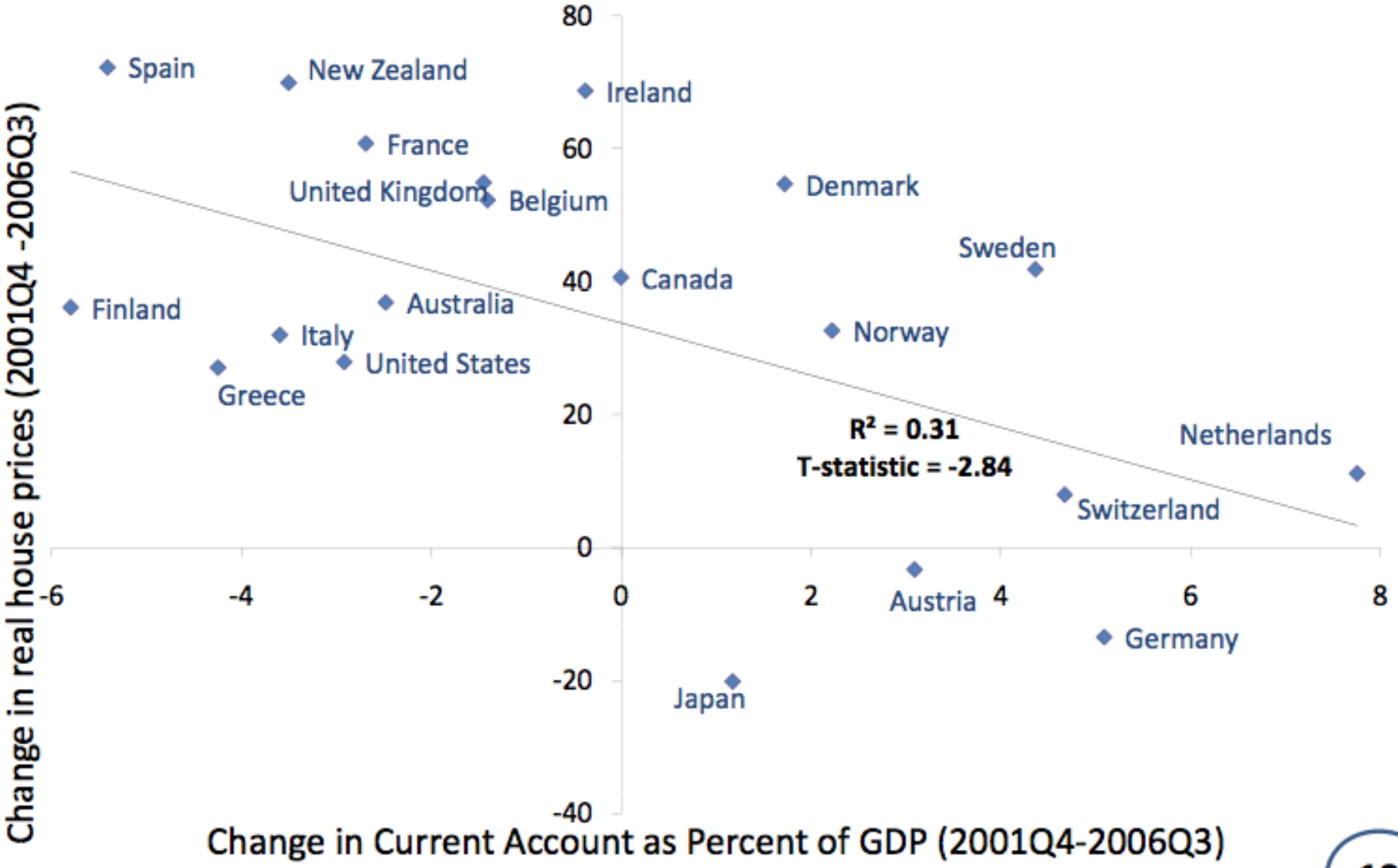
Results :

- The relationship is quite weak :
  - 11 out of 20 countries => both tighter and greater house price appreciation than US
- The overall relationship shown by regression line :
  - Has expected slope (tighter policy -> slower appreciation)
  - But statistically insignificant
  - R2=0.05 : Monetary policies difference explain only about 5% of variation in house price appreciation across countries

Monetary Policy and the Housing Bubble

- Since monetary policy is insignificant
- What does account for the rise in house price
  - Capital inflows from emerging markets to industrial countries ? (Global saving glut hypothesis)

Current Accounts and House Prices in the Advanced Economies



Relationship between capital inflows and house price appreciation

Result

- Has expected slope : current account worsen (cap. Inflow rise) -> house price appreciation rise
- Highly significant
- R2=0.31 : 31% of variation in house price appreciation across countries is explained by capital inflows

Conclusions

- Aim : to review evidence on the link between monetary policy and the rapid rise in house price
- Result : the direct linkages are weak
- Monetary policy works with lag, response to any change in inflation and other economic variable must consider whether the change is temporary or longer-lasting
- The magnitude of house price appreciation seems too large to explain by monetary policy alone
- Cross-country relationship shows no significant relationship between monetary policy and house price appreciation
- Implication : the best response to housing bubble would have been regulatory, rather than policy