

# Thoughts on the U.S. Macroeconomy

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## **Part 1**

# **Understanding Residential Housing Markets**

## Average Annual Real Price Growth By OECD Country

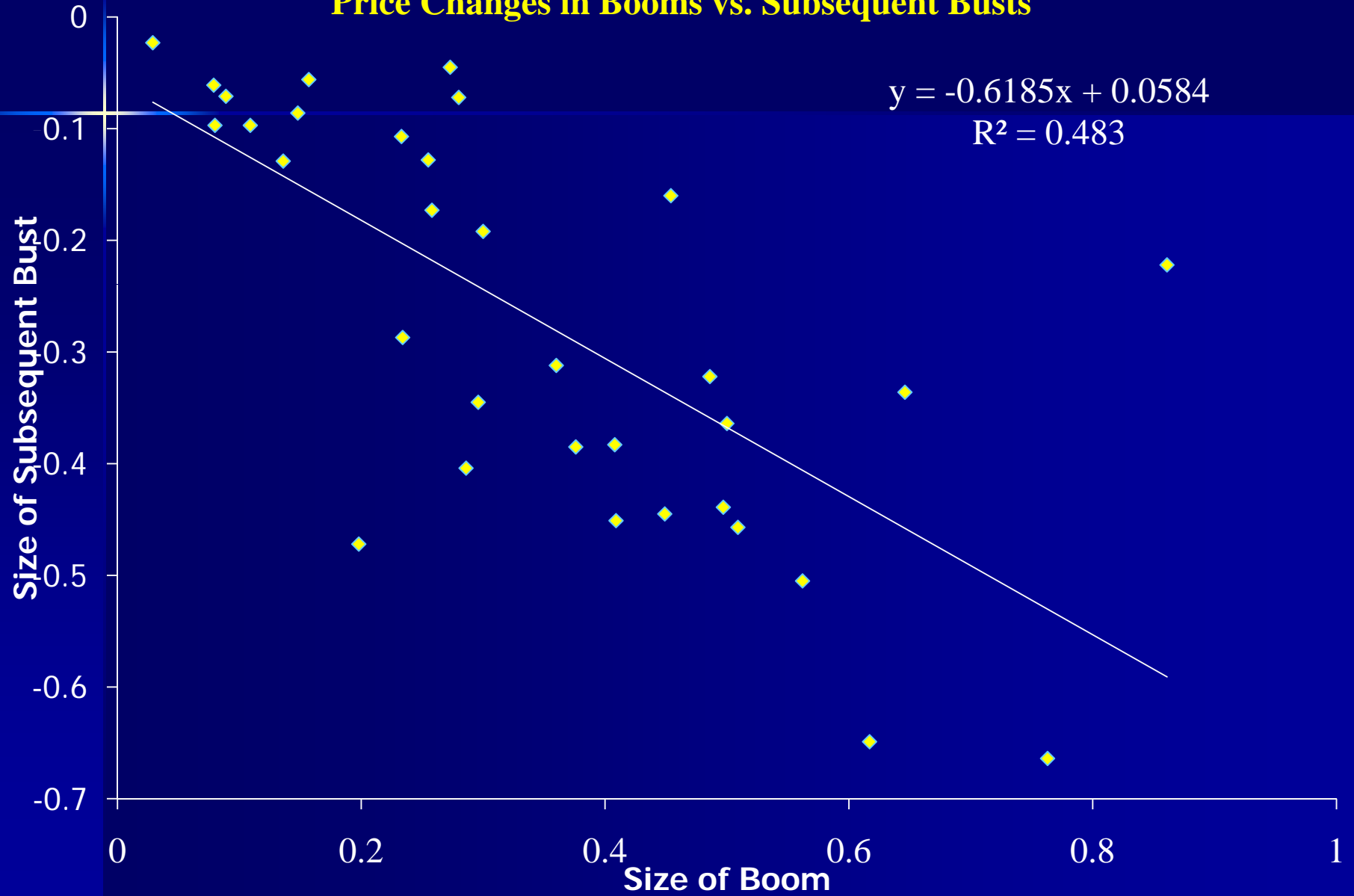
Country	1970-1999	2000-2006	Country	1970-1999	2000-2006
U.S.	0.012	0.055	Netherlands	0.023	0.027
Japan	0.010	-0.045	Belgium	0.019	0.064
Germany	0.001	-0.029	Sweden	-0.002	0.059
France	0.010	0.075	Switzerland	0.000	0.019
Great Britain	0.022	0.068	Denmark	0.011	0.065
Italy	0.012	0.051	Norway	0.012	0.047
Canada	0.013	0.060	Finland	0.009	0.040
Spain	0.019	0.081	New Zealand	0.014	0.080
Australia	0.015	0.065	Ireland	0.022	0.059
<b>Average</b>	1970-1999	<b>0.012</b>			
	2000-2006	<b>0.046</b>			

## Average Annual Real Price Growth By US State

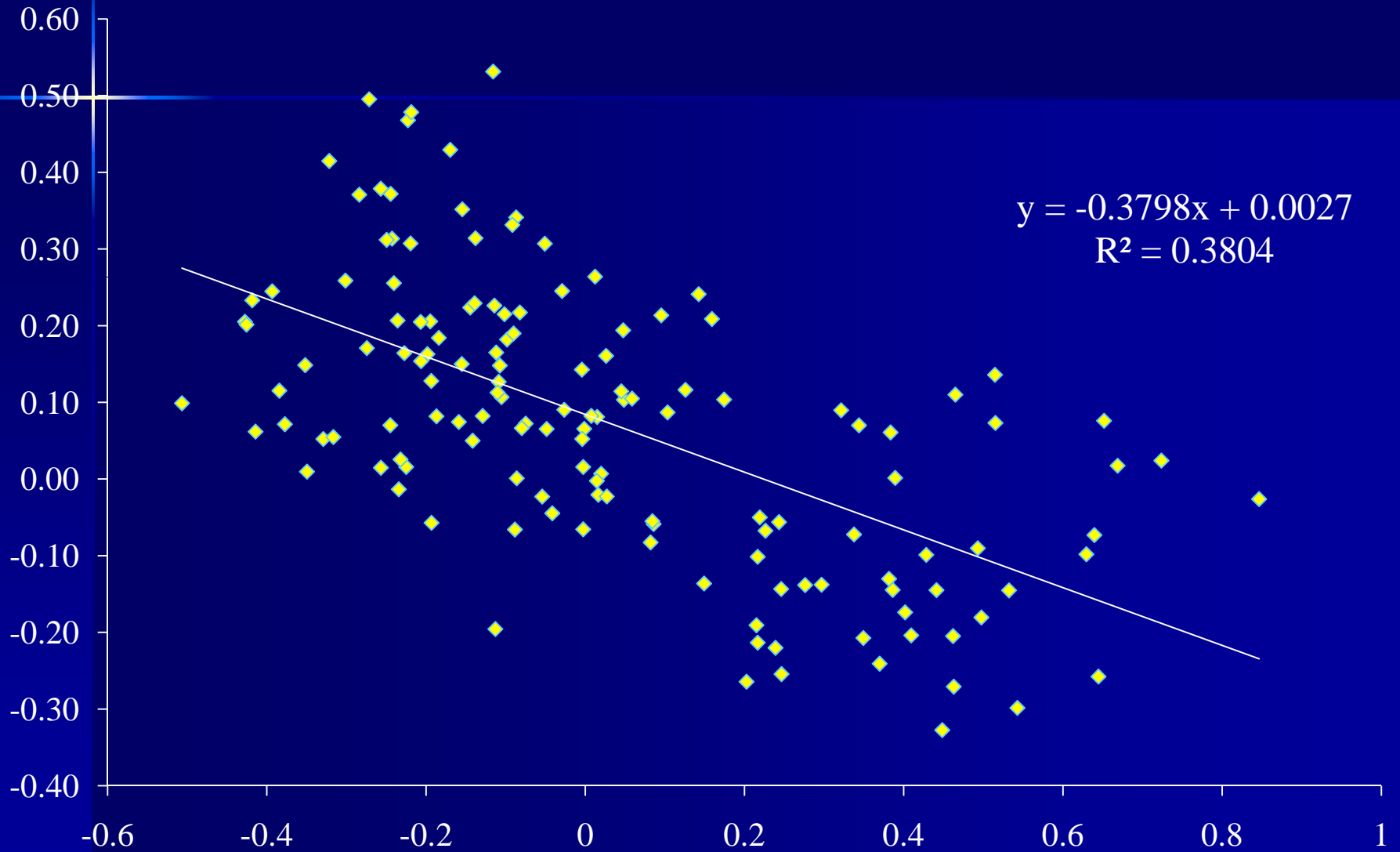
State	1980-2000	2000-2007	State	1980-2000	2000-2007
AK	-0.001	0.041	MT	0.003	0.049
AL	0.000	0.024	NC	0.008	0.022
AR	-0.009	0.023	ND	-0.010	0.033
AZ	-0.002	0.061	NE	-0.002	0.007
CA	0.012	0.066	NH	0.014	0.041
CO	0.012	0.012	NJ	0.015	0.058
CT	0.012	0.044	NM	-0.002	0.043
DC	0.010	0.081	NV	-0.005	0.060
DE	0.011	0.053	<b>NY</b>	<b>0.020</b>	<b>0.051</b>
FL	-0.002	0.068	OH	0.003	-0.001
GA	0.008	0.019	OK	-0.019	0.019
HI	0.004	0.074	OR	0.009	0.051
IA	-0.001	0.012	PA	0.008	0.042
ID	-0.001	0.047	<b>RI</b>	<b>0.017</b>	<b>0.059</b>
IL	0.010	0.030	SC	0.007	0.025
IN	0.002	0.020	SD	0.002	0.025
<b>Average</b>	<b>0.011</b>	<b>0.036</b>			

**Housing Cycles: Part 1**  
**OECD Country Level Data (1970 - 2000)**  
**Price Changes in Booms vs. Subsequent Busts**

$y = -0.6185x + 0.0584$   
 $R^2 = 0.483$



**Housing Cycles: Part 2**  
**U.S. Metro Area Data, (1980 - 1990 vs. 1990 - 2000)**  
**Real House Price Changes**



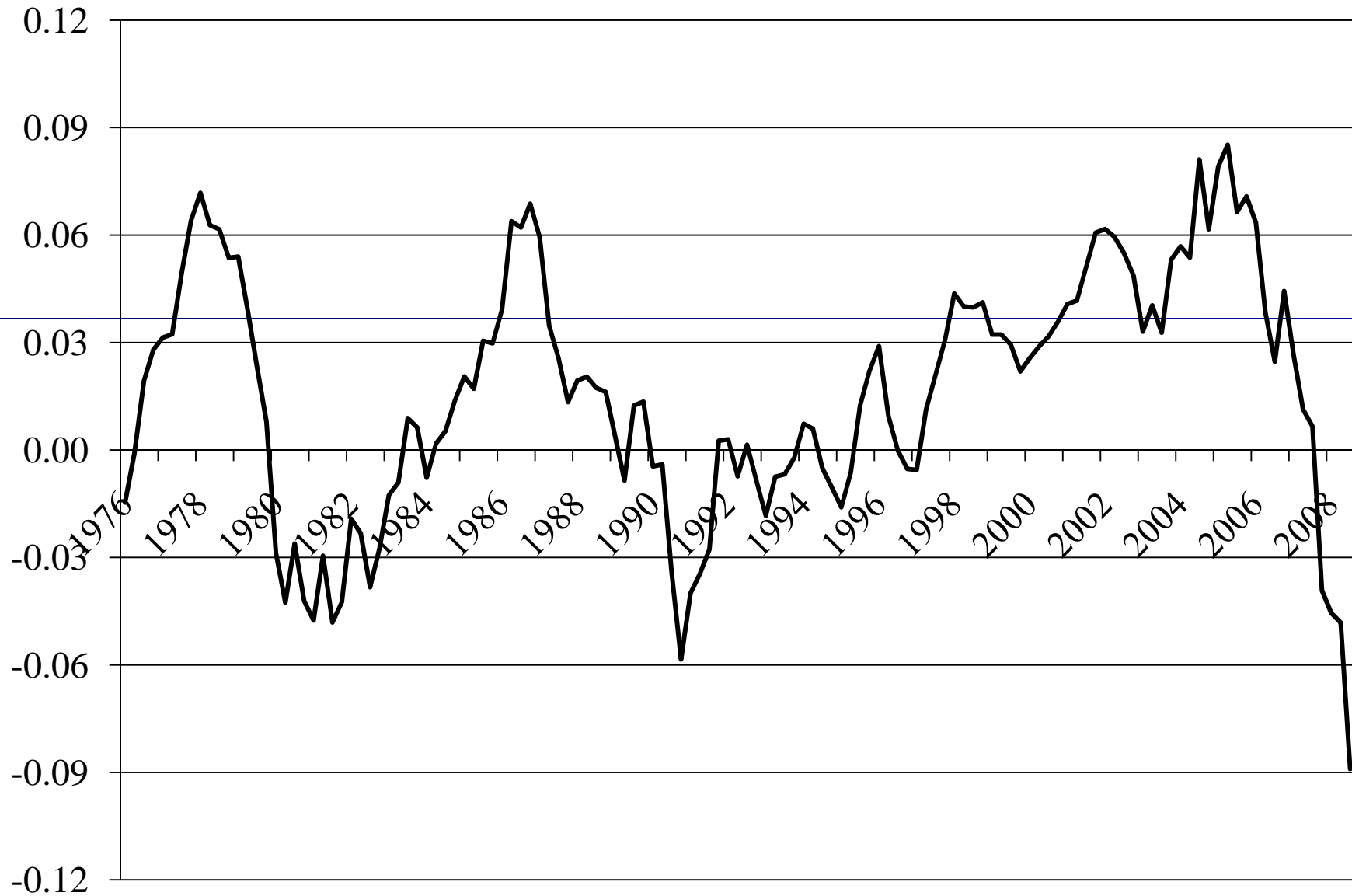
# Housing Prices and Housing Cycles

- Persistent housing price increases are ALWAYS followed by persistent housing price declines

## Some statistics about U.S. metropolitan areas 1980 – 2000

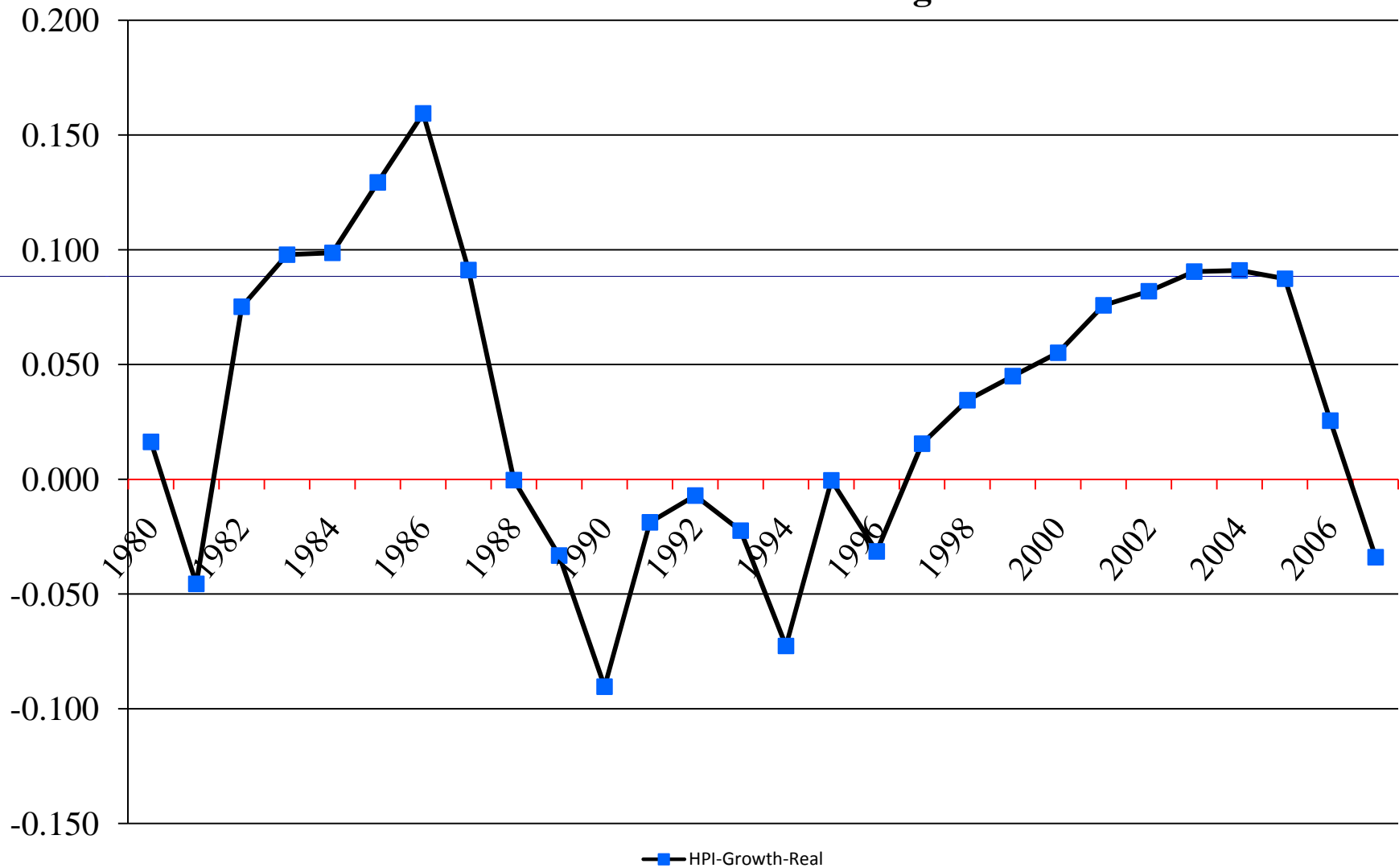
- 44 MSAs had price appreciations of at least 15% over 3 years during this period.
- Average price increase over boom (consecutive periods of price increases): 55%
- Average price decline during bust (the following period of price declines): 30%
- Average length of bust: 26 quarters (i.e., 7 years)
- 40% of the price decline occurred in first 2 years of bust

## Typical “Country” Cycle (US – OFHEO)



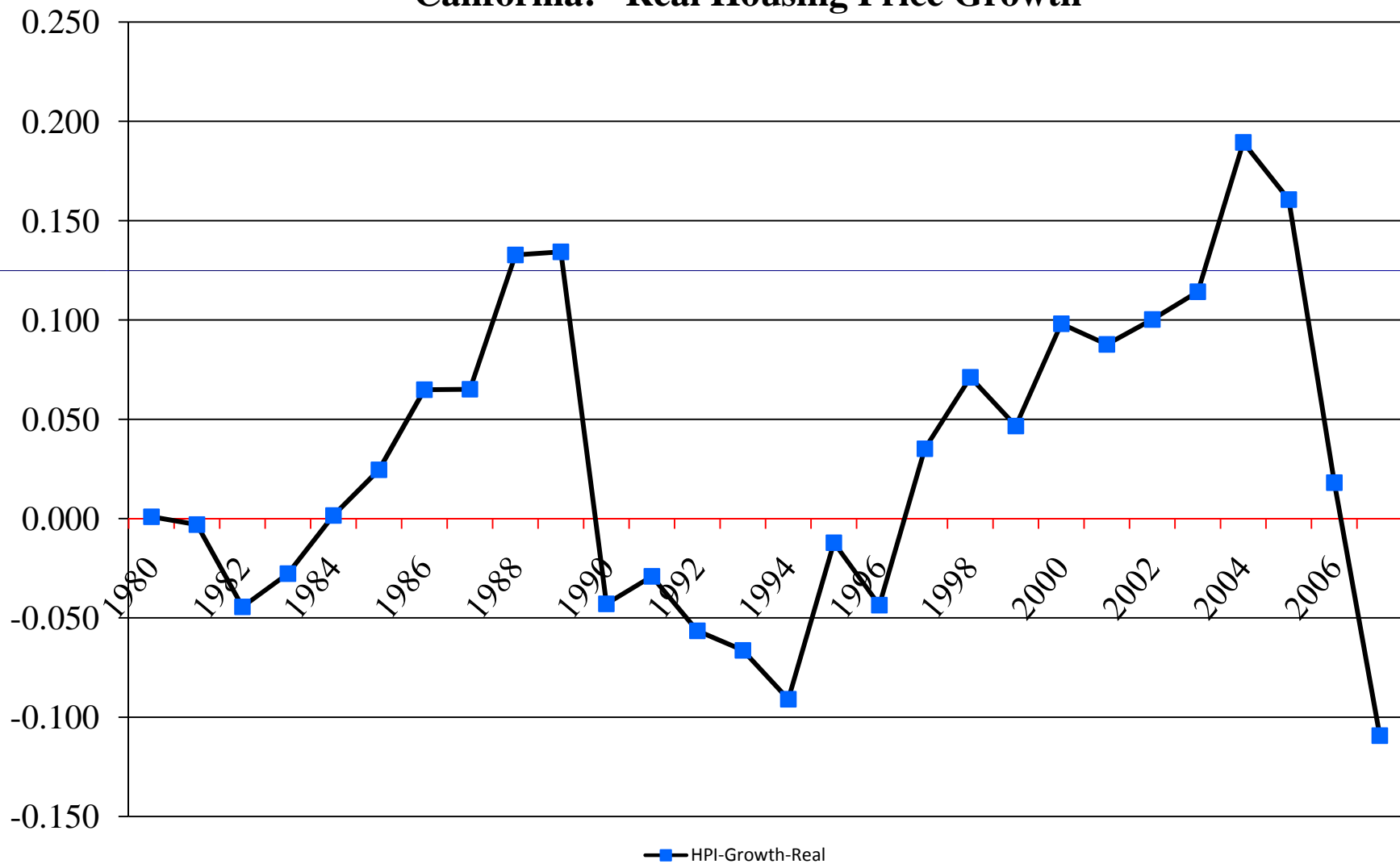
# Typical "Local" Cycle

New York State: Real Housing Price Growth



# Typical "Local" Cycle

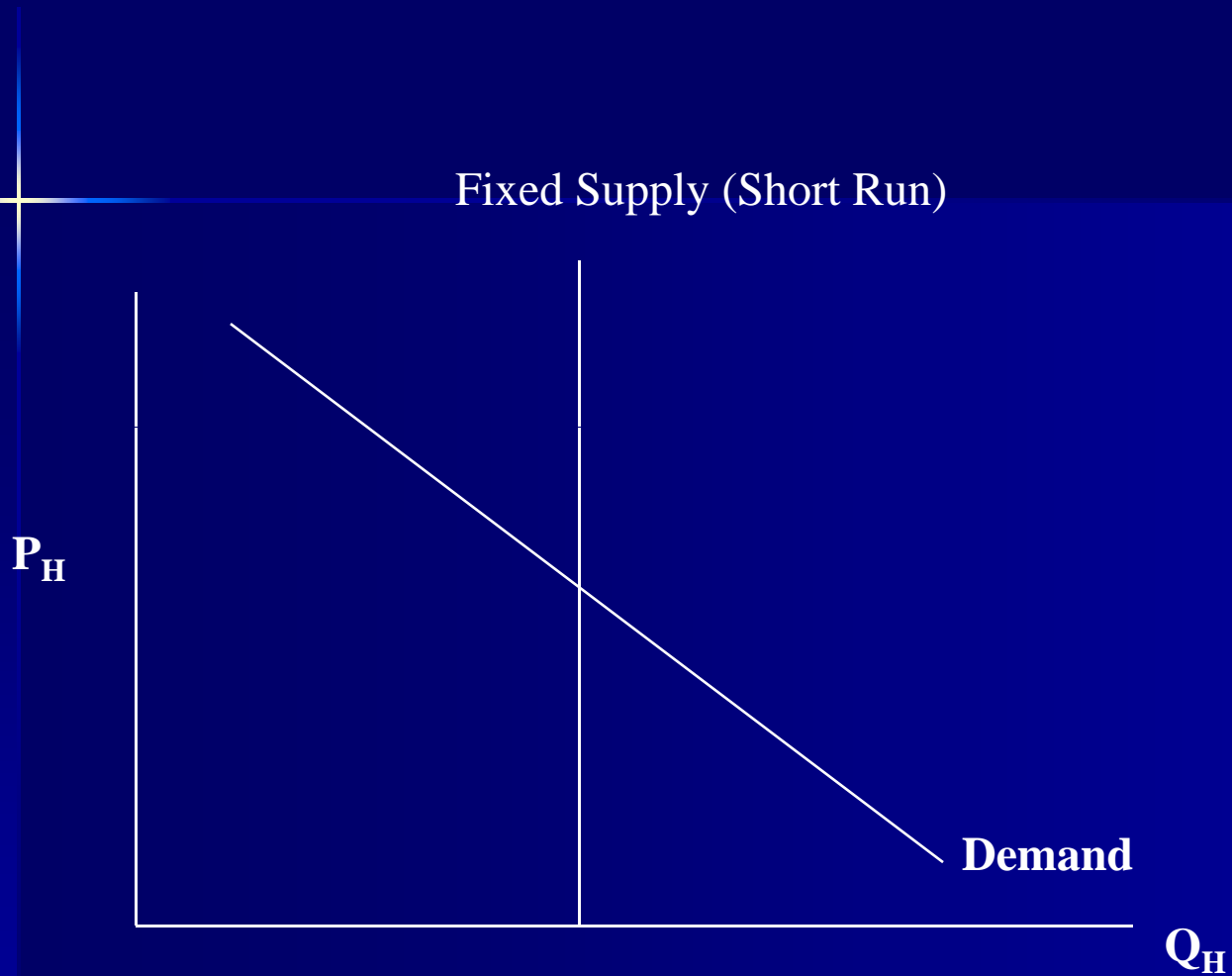
## California: Real Housing Price Growth



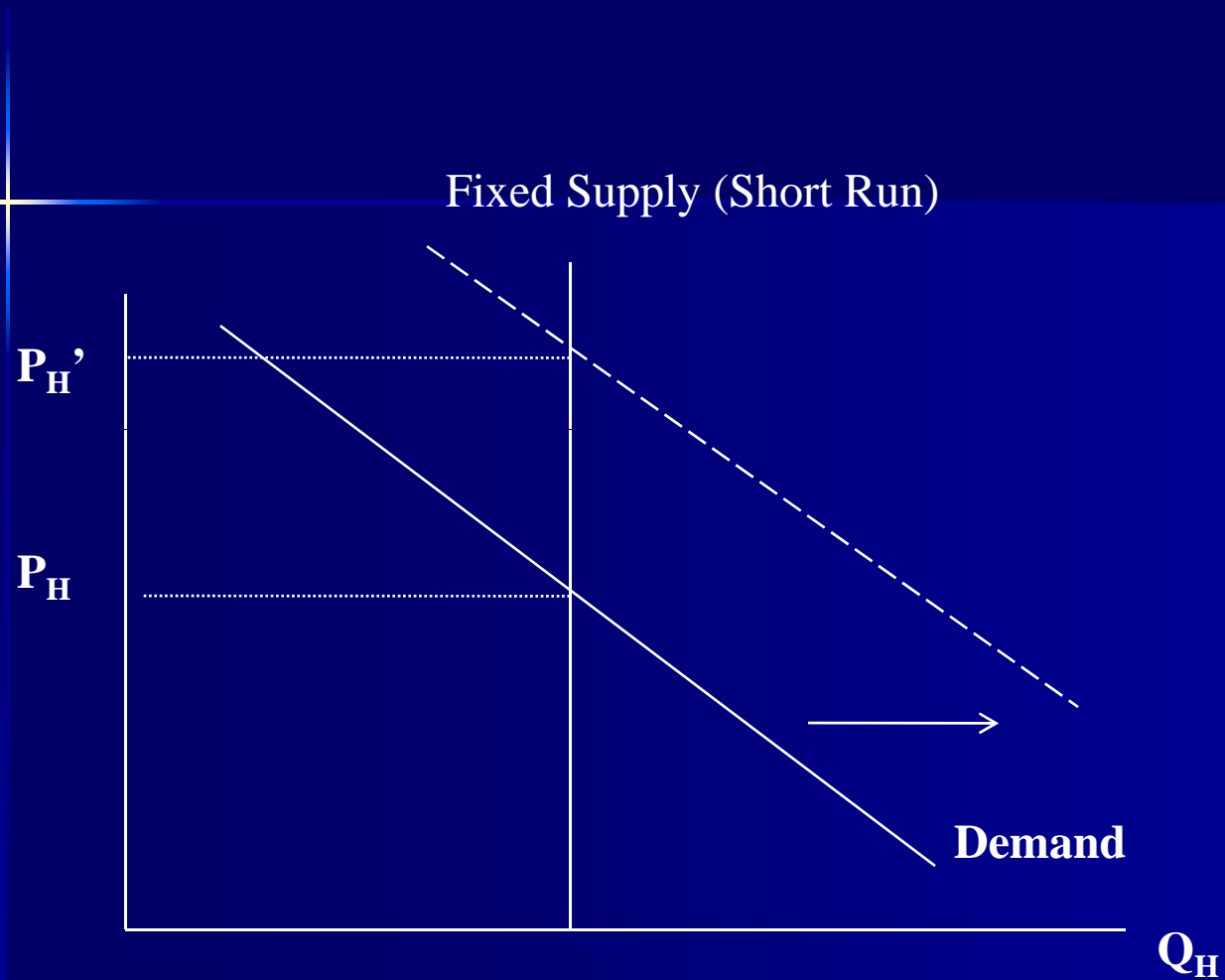
## Regression Analysis

- Use Historical Analysis (Country, State, Metropolitan Area)
  - Regress Size of Subsequent Bust on Size of Consecutive Boom
  - Depending on the sample, coefficient on mean revision ranged from: -0.5 to -0.6.
  - Implication: 100% increase in house prices are usually followed by periods of 50% - 60% declines.

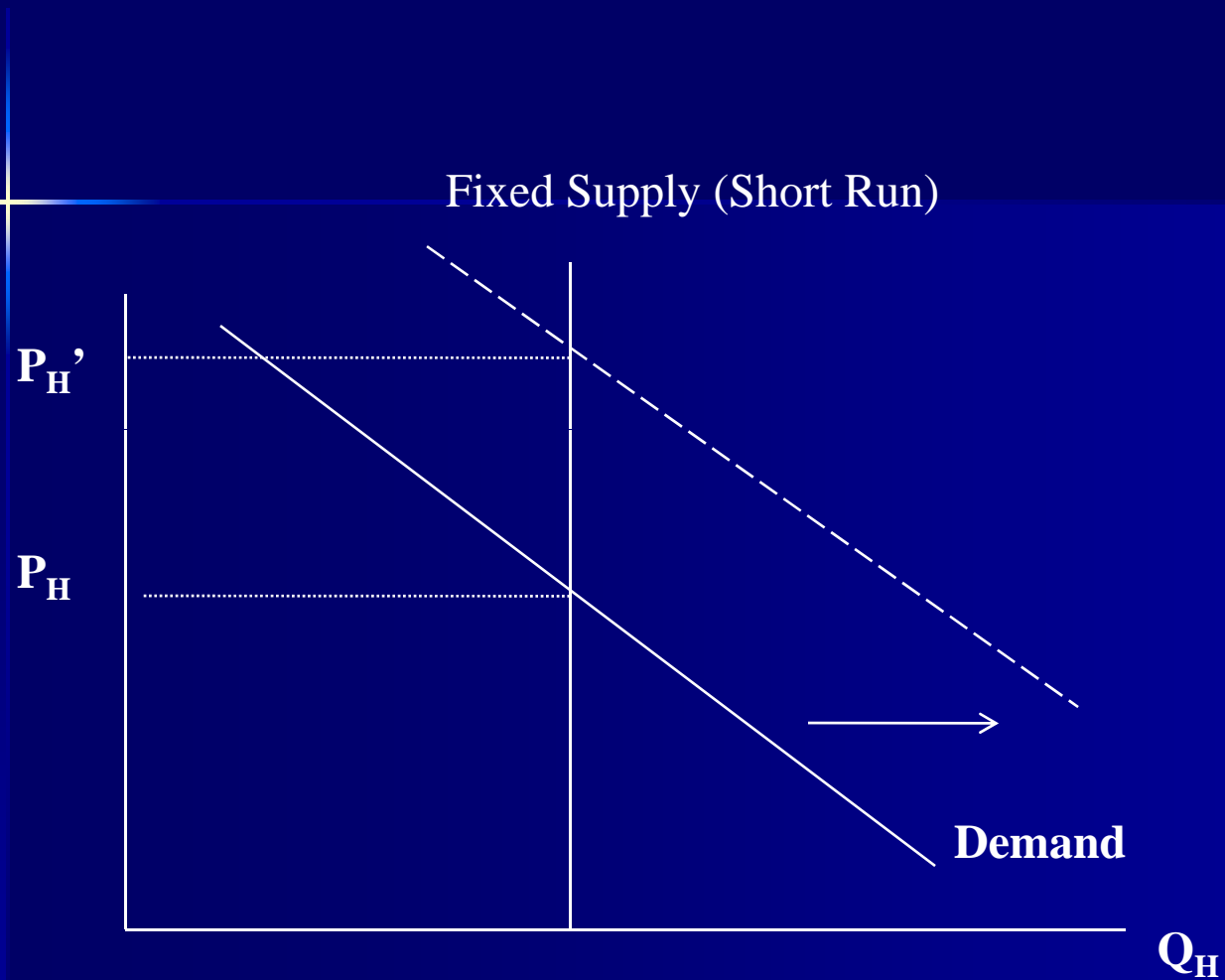
# Equilibrium in Housing Markets



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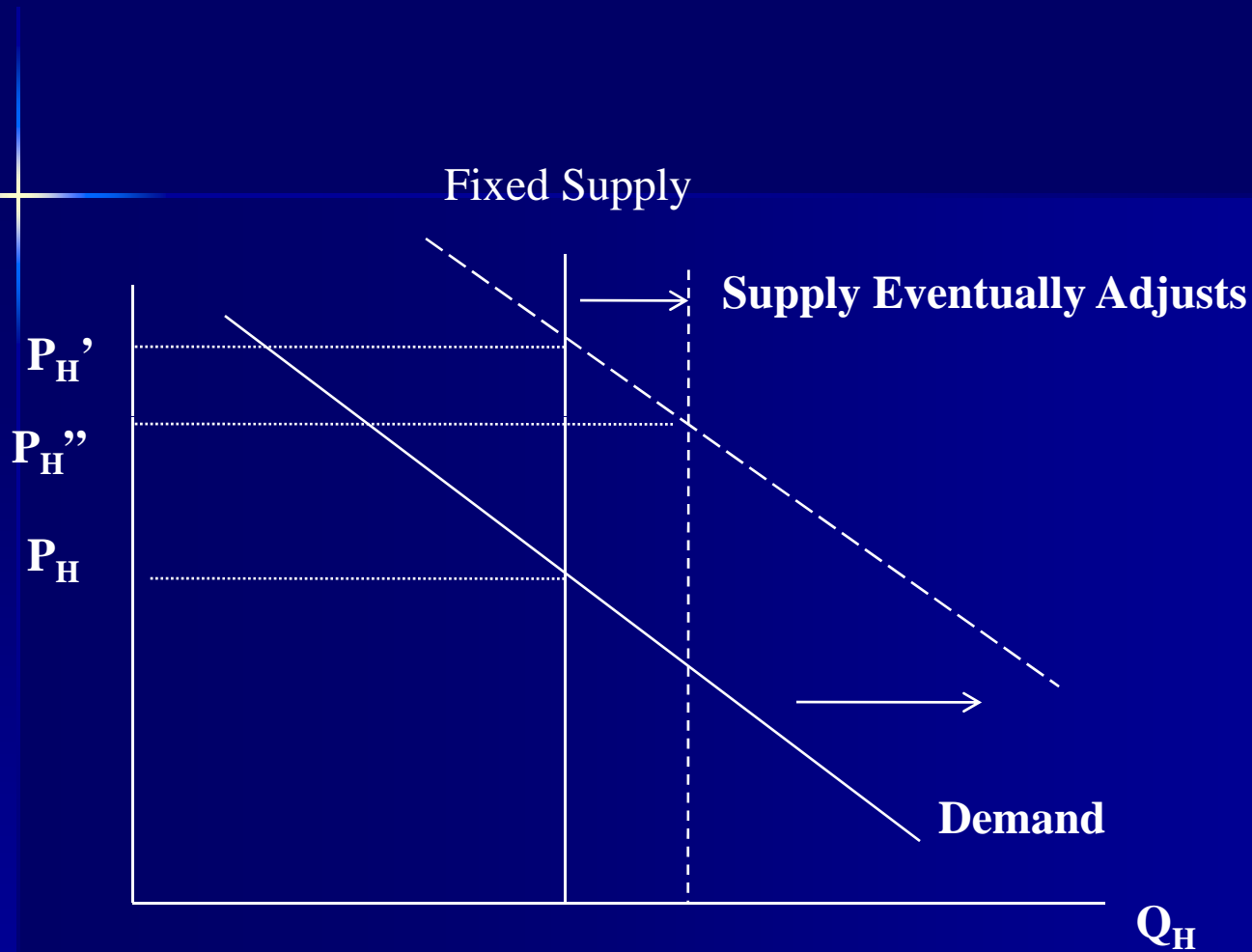


# Equilibrium in Housing Markets



**Demand shocks cause large price increases when supply is fixed**

# Equilibrium in Housing Markets

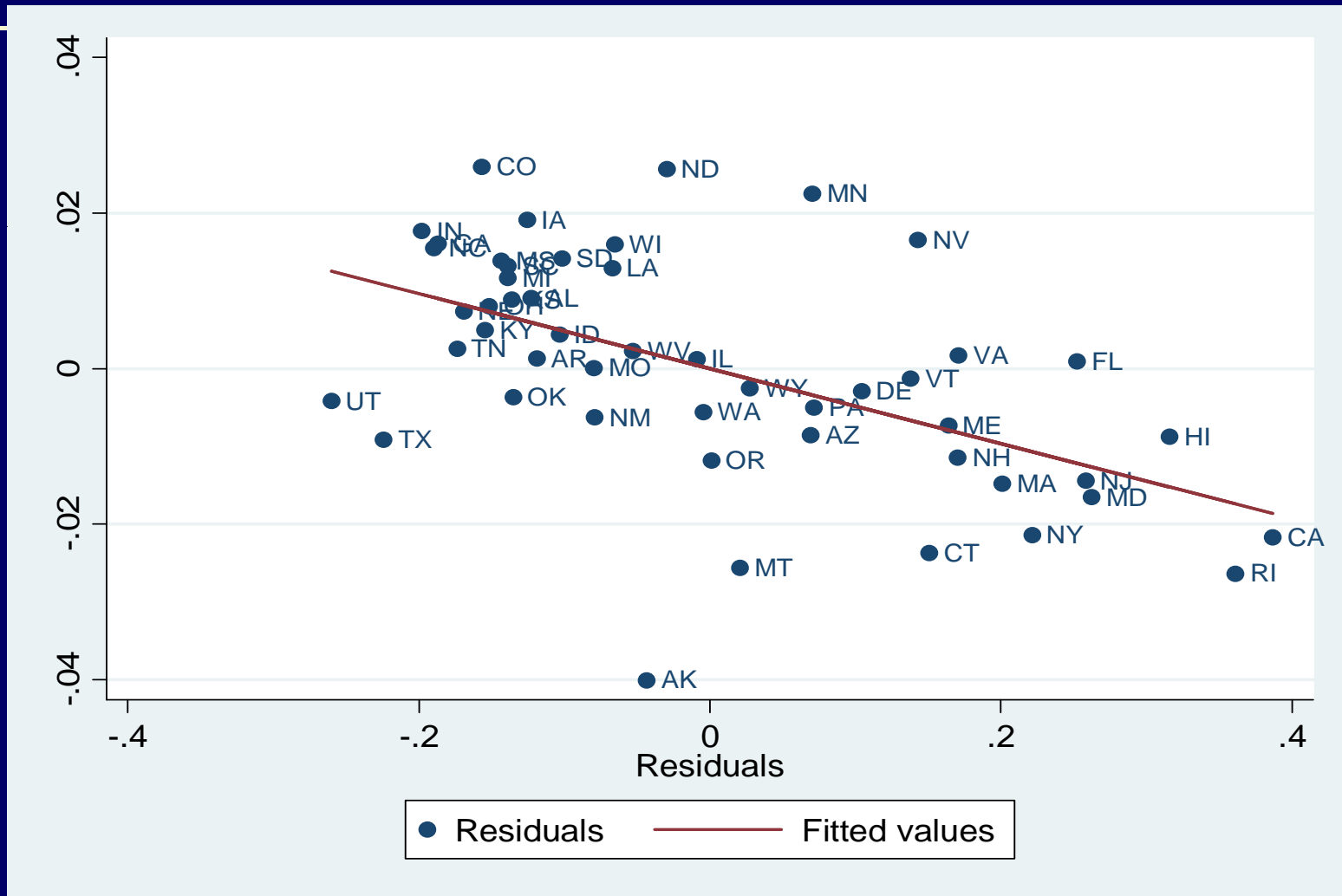


## **How Does Supply Adjust?**

- **Build on Vacant Land**
- **Convert Rental or Commercial Property**
- **Build Up**
- **Build Out (Suburbs)**
- **Build Way Out (Create New Cities)**
  
- **Some of these adjustments can take consider amounts of time.**

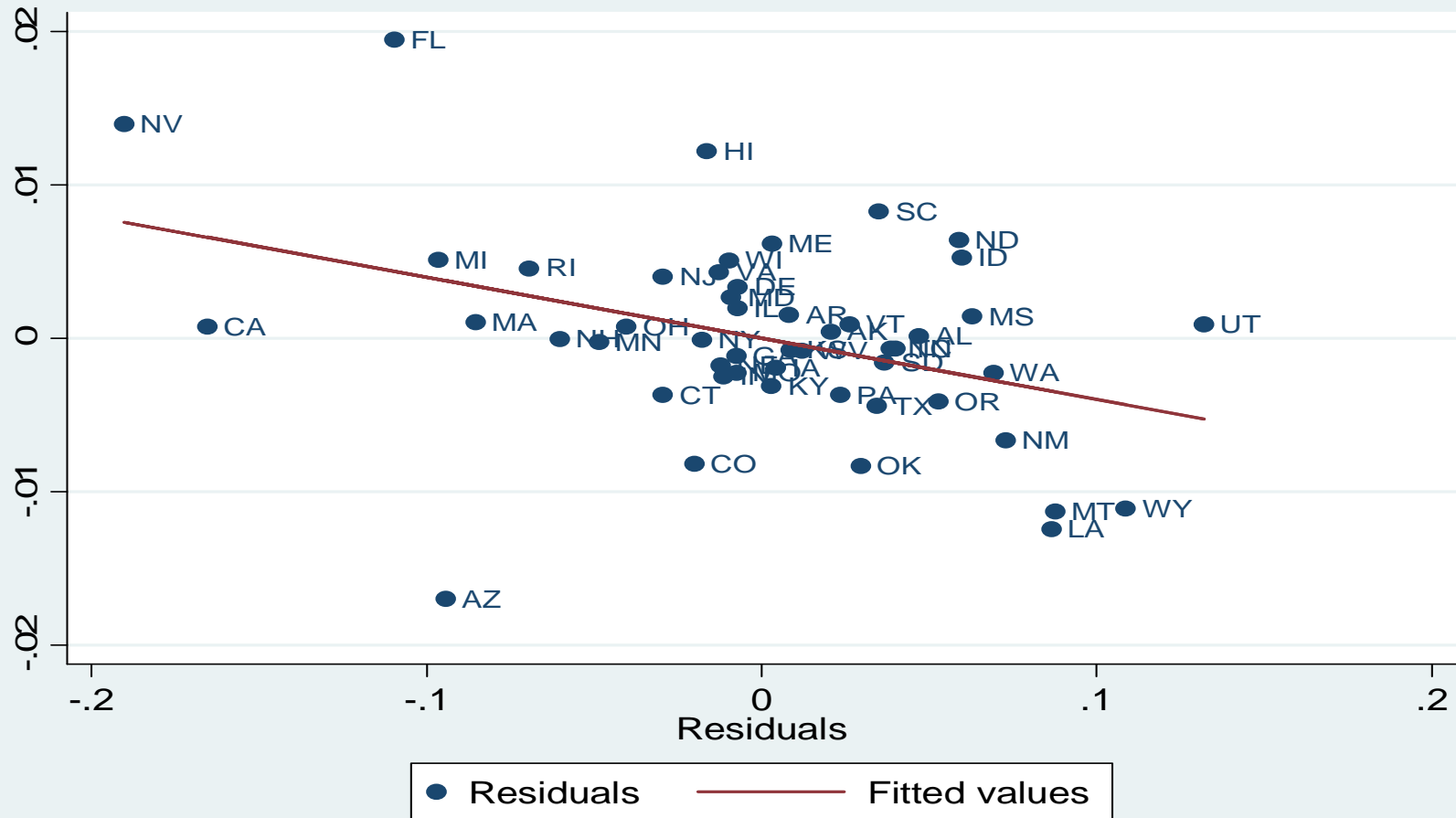
# Do Supply Factors Explain 2000-2008 Cycle

Change in Total Housing Units Against Change in Housing Price  
Adjusted for Population Changes (2000-2005, State Level)



# Do Supply Factors Explain 2000-2008 Cycle

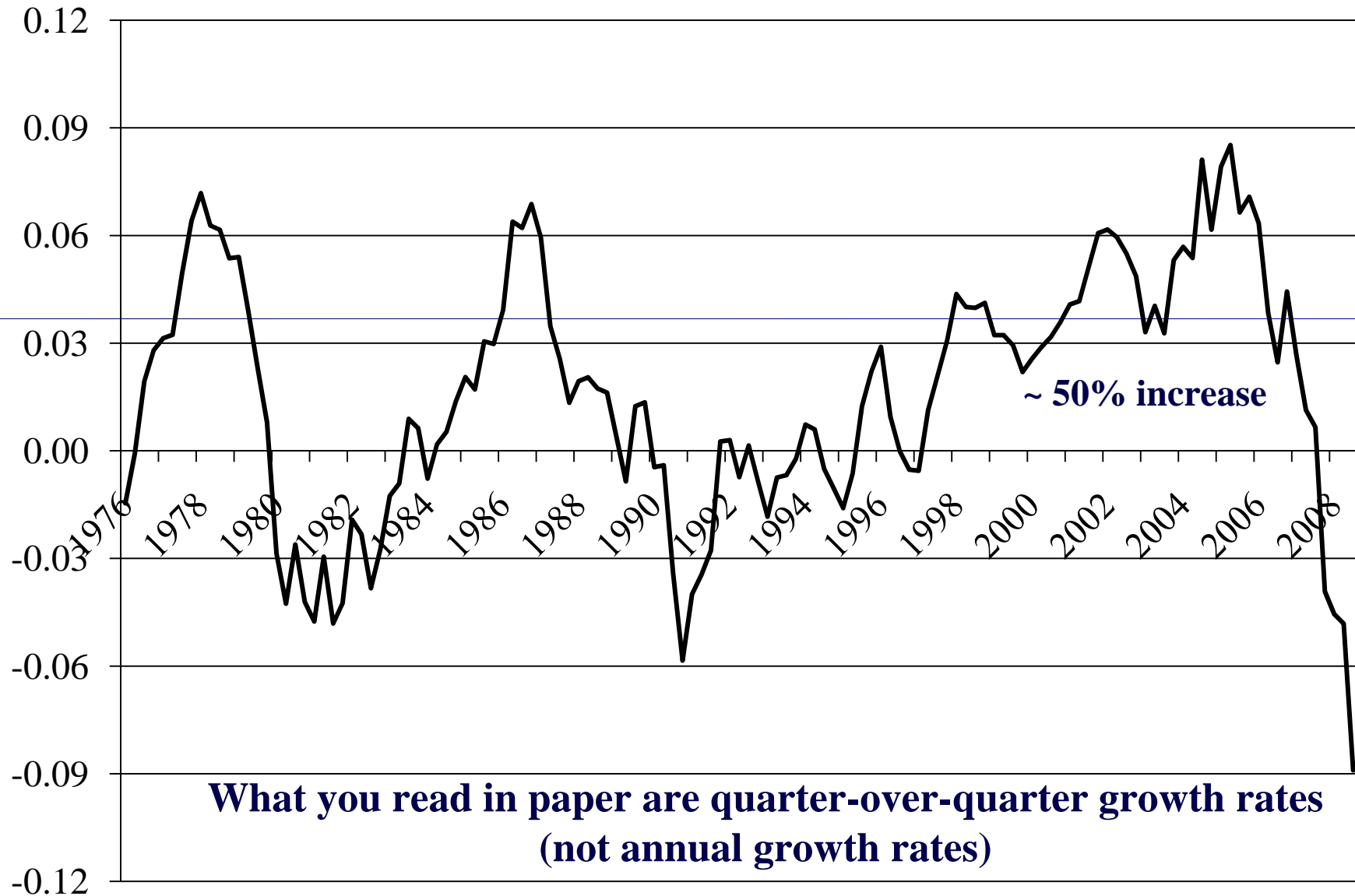
Change in Total Housing Units Against Change in Housing Price  
Adjusted for Population Changes (2005-2007, State Level)



## **What Does This All Mean**

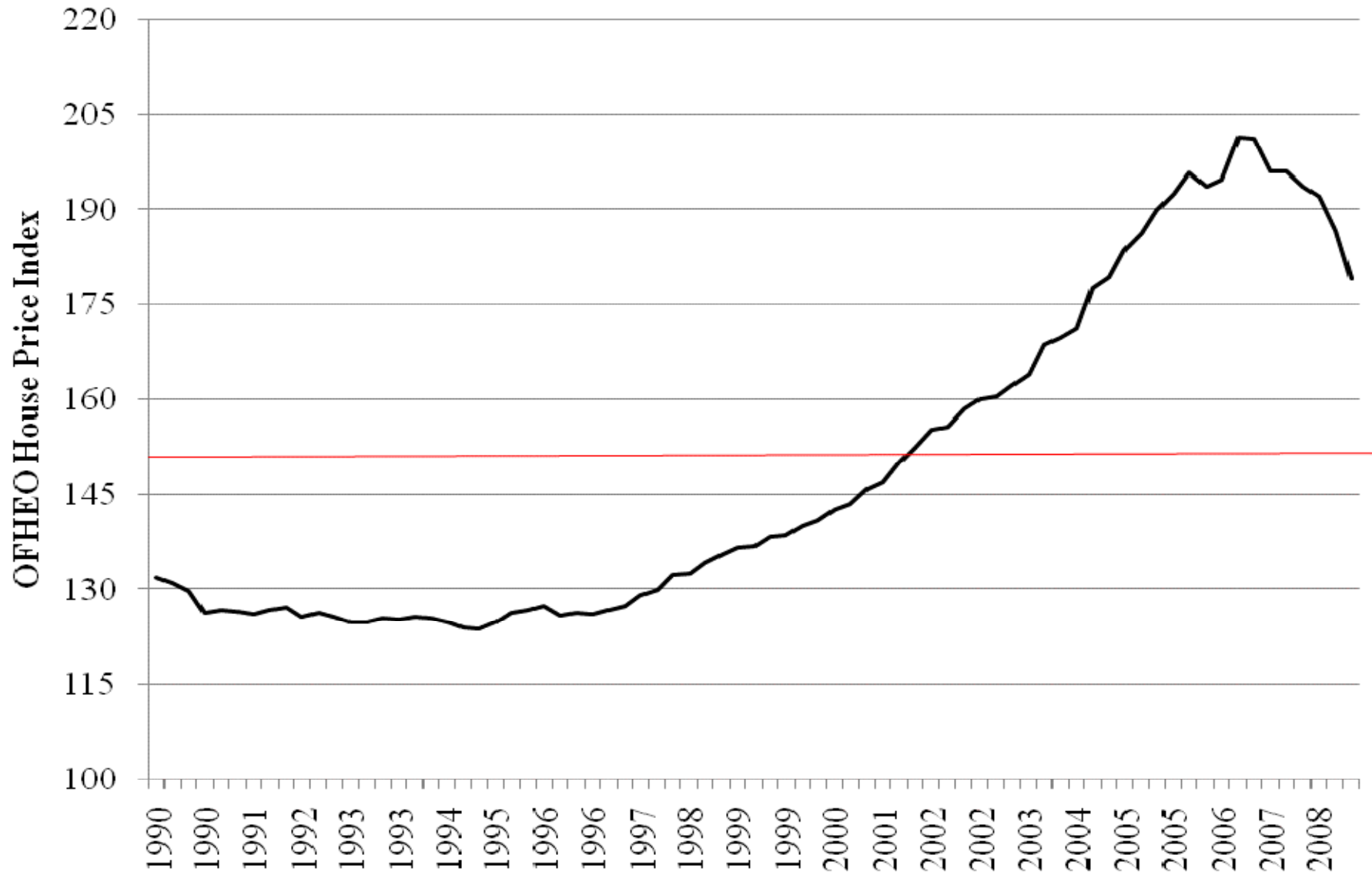
- **Decline in Residential Housing Prices in the U.S. was very predictable**
- **Using OFHEO price index, housing prices rose by 46% between 1997 and 2006 (for the entire U.S.).**
- **Model predicts that housing prices will fall by roughly 25-30% over the next 5-7 years.**
- **So far, the OFHEO price index has fallen by roughly 10% (from peak to current levels).**
- **Much more residential price declines to come!**

## Typical "Country" Cycle (US – OFHEO)



What you read in paper are quarter-over-quarter growth rates  
(not annual growth rates)

# U.S. OFHEO Housing Cycle - Levels



## **Take It To The Bank Prediction**

- **U.S. House Prices Will Continue to Fall SUBSTANTIALLY during the next few years.**
- **Over next 5 years, housing prices (by OFHEO index) will fall by another 15-20% (after adjusting for inflation)**
- **Much of that will occur over the next few years.**
- **The declines will be MUCH larger in the Case-Schiller index.**
- **This mechanism has to happen – supply of housing will always adjust!**

# What Effect Does Housing Have on Real Economy?

- What is the relationship between falling housing prices and the macroeconomy?
  1. Construction Sector
  2. Consumers
  3. Lenders

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**Part 2**  
**Other Thoughts On My Mind**

## **Current State of the Economy**

- **Are we in a recession?**

- **Does an “official” recession matter?**

**No! We are growing well below trend growth – does it matter if we grow at 0.1% for 3 quarters or -0.1% for 3 quarters.**

**The U.S. economy is definitely growing below trend!**

- **Are we on the precipitous of a “Great Depression”?**

- **No – that is just plain silly talk.**

# **What Am I Most Concerned With (Short Run)**

- **Banking Sector**

- **Bailout provides capitalization to the banks**
- **Should help to some extent (but, is it enough?)**
- **When will the “bad loans” be off the banks books?**
- **How are declining house prices in the future going to effect bank profitability?**

- **Consumers**

- **Consumers confidence is very low (and declining)**
- **When consumers get scared, they do not spend.**
- **The way the bailout was presented has eroded consumer confidence.**

## **What Am I Not Concerned With Anymore (Short Run)**

- **Inflation**

- **Oil Prices**

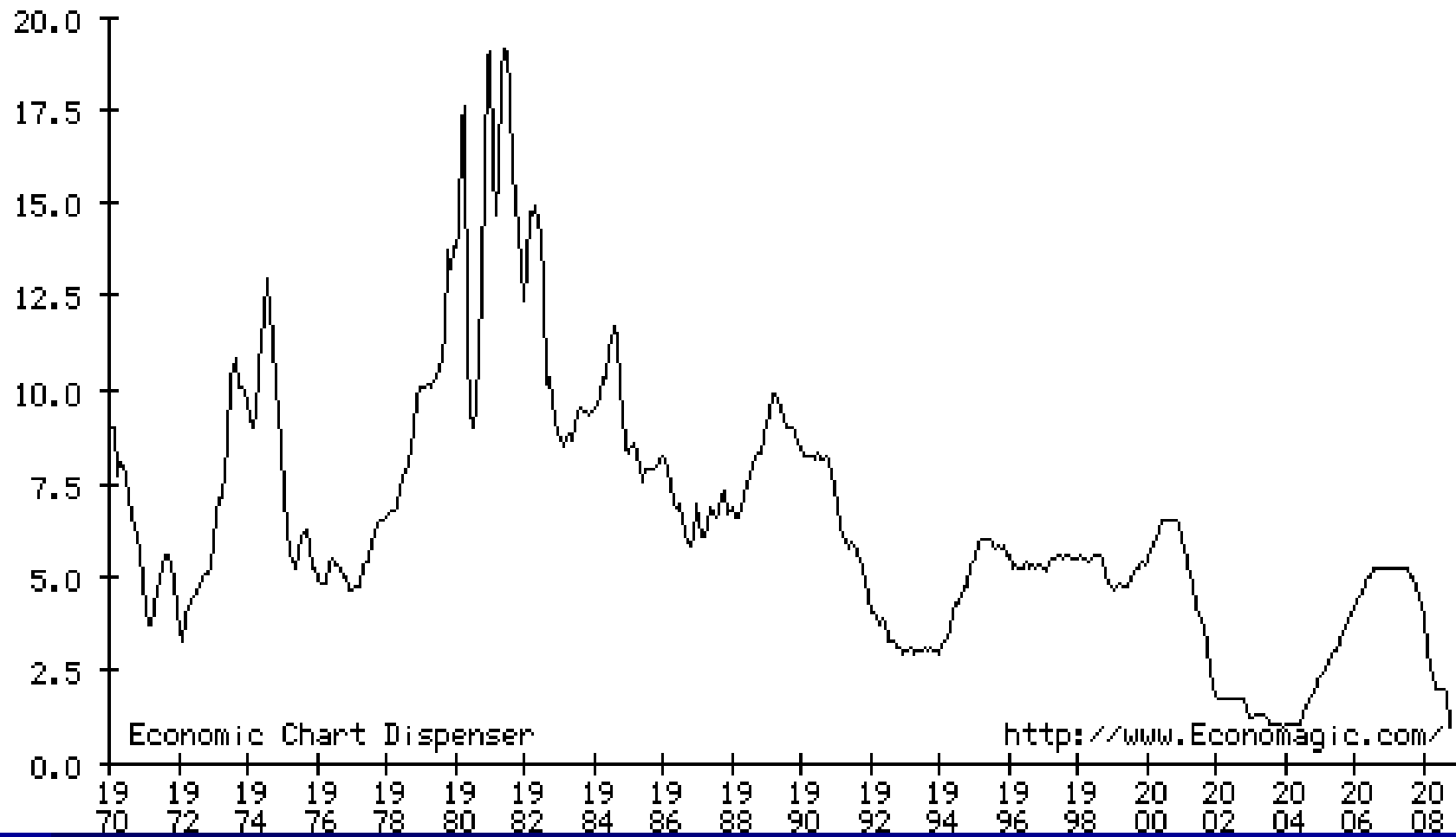
**Global slowdown has eroded price pressures for both final goods and intermediate inputs.**

## What Am I A Little Concerned With (Short Run)

- Current Federal Funds Rate (interest rate controlled by Fed) is low by historical standards
- Combination of low nominal short term interest rates and “DEFLATION” can be bad for the economy  
  
(Known as the liquidity trap)
- Results in very high short term real interest rates.

# Federal Funds Rate: 1970 - 2008

## Effective Federal Funds Rate: Percent



## What Am I Concerned With (Long Run)

- Over Regulation!
- Moral Hazard Going Forward

## **Summary: Some Forecasts**

- **Residential Housing Prices Will Continue to Fall by Substantial Amounts Nationally (~15-20% more) Over Next 5 Years (in REAL TERMS)**
- **Unemployment Will Rise By At Least Another Percentage Point (up to 7.5%) Over Next Year**
- **Economy Will Remain Sluggish For Next Year (at least) – there is a tremendous amount of uncertainty that needs to be resolved before economic activity resumes.**
- **Has irreparable damage been done to the growth prospects of the U.S. economy for the next 20 years?**