Testimony of Morris A. Davis

to the Senate Finance Committee, December 13, 2007

Subject: House Prices and the Macroeconomy

Chairman Baucus, Ranking Member Grassley, and Members of the Committee, thank you for inviting me.

The top panel of Exhibit 1 shows the history of the price of owner-occupied housing, on average in the United States, since 1975. Prior to 1997, after smoothing through the booms and busts, "real" (inflation-adjusted) house prices increased by about 0.6 percent per year. From 1997 through mid-year 2006, real house prices increased by 5.7 percent per year. Since 2006, real house prices have been flat.

So, can we explain the recent housing boom? For house prices to rise over time, something about housing must be hard to manufacture. For this reason, it makes sense to visualize a house as a physical structure on some land. Physical structures are like manufactured goods, and so the price of structures should show little upward trend, like the price of most manufactured goods. The red dotted line in the bottom panel of your exhibit shows that, in fact, the real price of structures has increased by only 35 percent since 1975. In contrast, land is not manufacturable, and this implies that changes to the demand for housing should be directly reflected in changes to the price of land. Shown by the solid line, the real price of residential land has increased by more than 250 percent since 1975. Viewed in this context, the housing boom experienced over the 1997 to 2006 period was a land boom; over this period, the real price of land increased by 10 percent per year.

A simple statistical model can explain *most*, but not all, of the recent boom to the price of land, which is the subject of the top panel of your next exhibit. For most of the sample period, real per-capita income, interest rates, and the inflation rate, have jointly explained the trend and cycles of the real price of land. The predicted price of land based on these three variables, the dotted line, closely hugs the actual land data, the solid line, until mid-2004, at which point the lines diverge. By last quarter, the actual price of land was 26 percent higher than its predicted price. A 26 percent overvaluation in the price of land currently translates to 12 percent overvaluation in house prices.

The bottom panel of exhibit 2 lists two possible explanations for why the actual price of land has outpaced the predicted price over the last three years. The first explanation is that there was a "bubble." There might be some merit to this story, but I'd rather focus on the second reason, which is that underwriting standards may have eased in 2004. A change of this sort is sufficient to cause a surge in the price of land. The reason is that there is a fixed supply of good locations. At any given price level, the number of potential buyers that can afford to live in any given location increases if credit becomes cheaper or more people have access to mortgages. In this case, the price of land must rise to clear the market.

Recently, however, underwriting standards may have become more strict. Thus, at current price levels, the number of potential buyers that can afford to live in any location has fallen. The price of land and housing must fall to clear the market for land. Assuming that underwriting standards have returned to pre-2004 levels, we might expect the price of land and housing to fall by 26 and 12 percent, respectively.

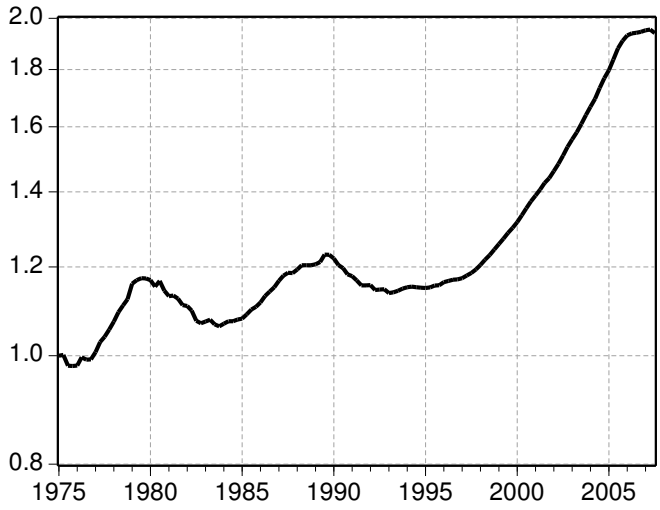
In the final exhibit, I make the case that the decline in house prices will be accompanied by a slowdown in residential investment and GDP. The top panel compares growth in real house prices, the solid line, with the share of GDP accounted for by residential investment, the dotted line. The correlation of these two series is 86 percent. Thus, if house prices fall, the odds are that residential investment will weaken. In the bottom panel, the solid line shows the percent deviation of real GDP from its trend and the dotted line shows the percent deviation of real residential investment from its trend. The historical correlation of these two series is 74 percent. Summing up, given that (a) residential investment is currently below trend, (b) we expect residential investment to fall further as house prices fall, and (c) cycles in residential investment and GDP are highly correlated, from a statistical point of view it seems highly likely that GDP growth will slow.

This concludes my prepared remarks.

Exhibit 1

Real House Prices

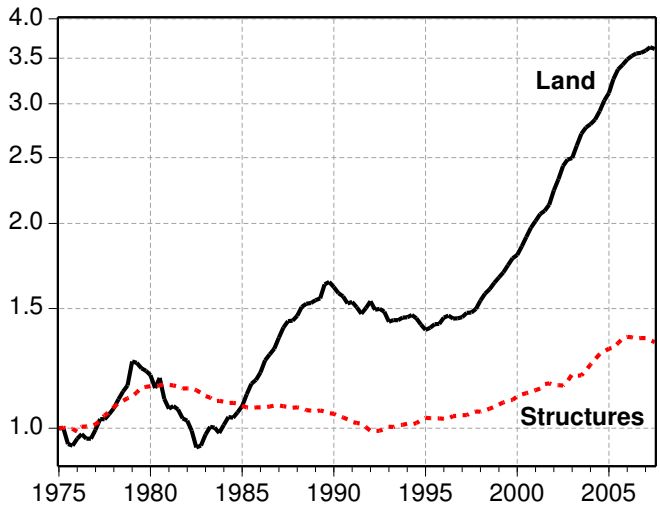
Log Scale. 1975:Q1 = 1.0. Data source: OFHEO



Period	Real Annual Growth Rate
1975:Q1 - 1996:Q4	0.6 %
1997:Q1 - 2006:Q2	5.7 %
2006:Q3 - 2007:Q3	0.1 %

Real Structures and Land Prices

Log Scale. 1975:Q1 = 1.0. Data source: Davis and Heathcote (2007)

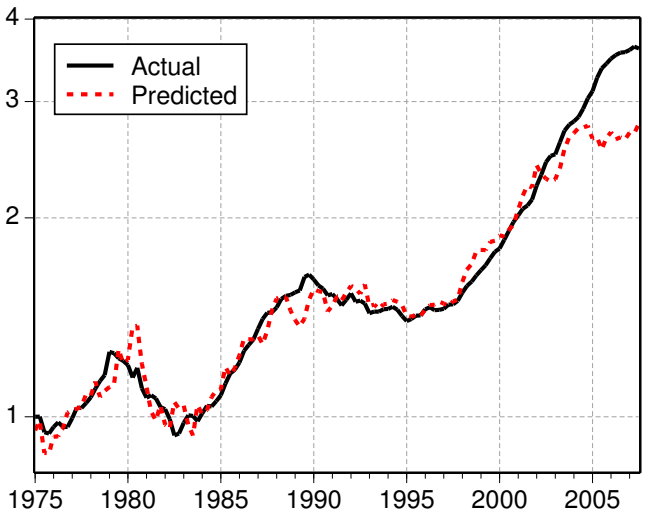


- Housing is land and structures
- House prices can increase if
  - ◇ Structures costs increase
  - ◇ Land prices increase
- Structures costs show little trend
- Land prices increasing over time

Exhibit 2

Actual and Predicted Real Land Prices

Log Scale. 1975:Q1 = 1.0. Data source: Author calculations



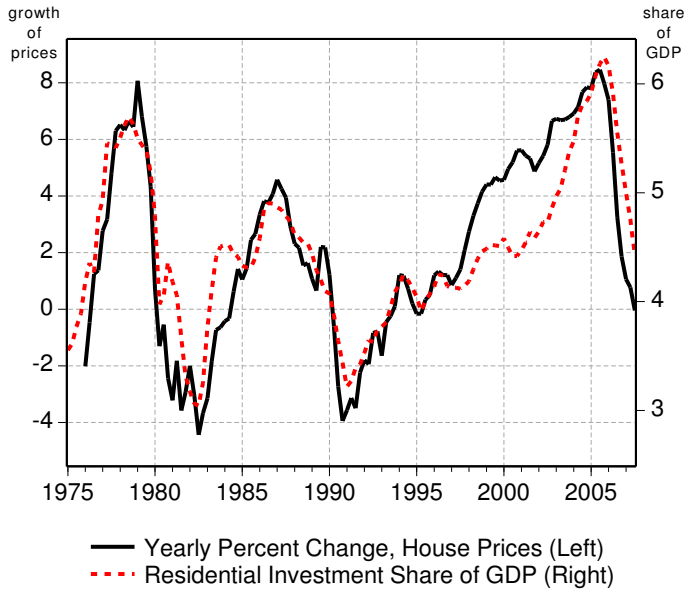
- Land prices a function of
  - ◇ Real disposable income
  - ◇ Interest rates
  - ◇ Inflation
- Model tracks until 2004:Q2
- Land now "overvalued" by 26 pct.
  - ◇ Housing is 44 percent land
  - ◇ Housing overvalued by 12 pct.

- Possible explanations for the 2004:Q2 - 2007:Q3 period:
  - – Bubble
  - – Change in credit conditions
- What happens if underwriting standards ease?
  - – At current prices, more people can afford any given house
  - – House prices must rise
- Suppose underwriting has returned to pre-2004 standards:
  - – At current prices, fewer people can afford any given house
  - – House prices must fall
- If house prices fall, expect a slowdown in residential investment and GDP

Exhibit 3

Yearly Real Percent Change in House Prices and Residential Investment Share of GDP

Data sources: OFHEO and BEA



- Correlation of growth in house prices and residential investment share of GDP is 0.86

→ Expect further weakening of residential investment as house prices fall

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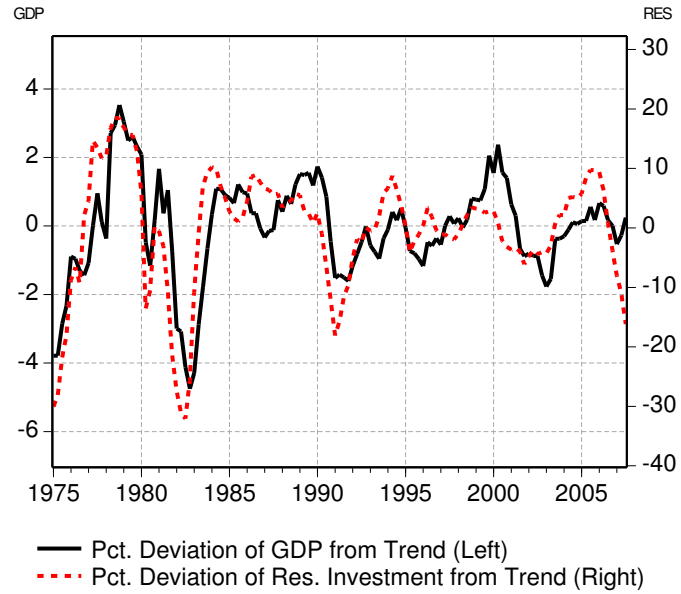
Percent Deviations of GDP from Trend and Residential Invest. from Trend

Data sources: BEA and author calculations



- Correlation of cycles in residential investment and GDP is 0.74

→ Expect weakening of GDP growth as house prices fall and residential investment weakens