Making Sense of the Housing Recovery and Trends in Housing Affordability

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Outline

National economy: output near potential, inflation near target, interest rates low, but normalizing. Against this backdrop, assess national affordability by reviewing

• General patterns in housing activity
  – Strong price appreciation, but limited construction

• Role of demand factors

• Role of supply factors

• Housing affordability:
  – Ownership rate sags
  – Rents, low income, and co-residency suggest rent affordability also an issue

• Potential housing policy options
I. General Patterns of Housing Activity

• U.S. house prices boomed, busted, and recovered
• But construction recovery muted
• ...and tilted toward multifamily
U.S. house prices boom, bust and rebound

Sources: Author's calculations using data from Federal Housing Finance Agency and Haver seasonal adjustments of CoreLogic data. Boom: 1999q4-2007q1 (FHFA), 1999q4-2006q2 (CoreLogic); bust: 2007q1-2011q2 (FHFA), 2006q2-2011q2 CoreLogic; recovery since 2011q2 for both.
U.S. house prices boom, bust

Index, 1991:Q1 = 100

CoreLogic House Price Index
FHFA House Price Index

Bust
-32%
-21%

SOURCES: Author's calculations using data from Federal Housing Finance Agency and Haver seasonal adjustments of CoreLogic data. Boom: 1999q4-2007q1 (FHFA), 1999q4-2006q2 (CoreLogic); bust: 2007q1-2011q2 (FHFA), 2006q2-2011q2 CoreLogic; recovery since 2011q2 for both.
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Single-family housing permits boom, then bust, and slowly recover

Sources: Bureau of Economic Analysis, U.S. Census and author's calculations.
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Shift to renting: construction recovery soft for single-family

Thousands of Units, SAAR

SOURCES: National Bureau of Economic Research and the Census Bureau.
Shift to renting: construction recovery soft for single-family, stronger for multi-family

Thousands of Units, SAAR

SOURCES: National Bureau of Economic Research and the Census Bureau.
Shift to renting: construction recovery soft for single-family, stronger for multi-family, incomplete overall overall

Thousands of Units, SAAR

Total permits

Single-family permits

Multi-family permits

SOURCES: National Bureau of Economic Research and the Census Bureau.
II. The Role of Demand Factors

• House valuations high and *rising*
  – Gauge valuations with house price-to-rent ratio (aka P/E)

• Interest rates adjusted for house price appreciation drove valuations before subprime boom

• Early to mid-2000s boom fueled by both low interest rates and easier mortgage credit standards

• Current boom in price-to-rent ratio in line with interest rate and appreciation trends

• Higher levels of *both* prices and rents are partly masked by their ratio. Nevertheless, not only do high price-to-rent ratios reflect muted housing supply, but also so do the appreciation trends that drive real net mortgage rates. Supply also matters...
House price-to-rent ratios swing in subprime boom/bust, then partly recover on interest rates and appreciation

log (repeat sales/apt. rents);
index = 100 in 2001

SOURCES: FHFA, Freddie Mac, BLS, BEA, Federal Reserve Board, and Duca, Muellbauer, and Murphy (2016).
House prices are being stimulated by low after-tax mortgage rates accounting for house price appreciation

mortgage costs = after-tax mortgage interest rate
- rate of past house price appreciation

Sources: FHFA, Freddie Mac, BLS, BEA, Federal Reserve Board, and Duca, Muellbauer, and Murphy (2016).
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log (repeat sales/apt. rents);
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House Price-to-Rent Ratio (left axis)

Inverted mortgage costs (right axis)

large swings mortgage credit standards

log (real user costs)
inverted scale

SOURCES: FHFA, Freddie Mac, BLS, BEA, Federal Reserve Board, and Duca, Muellbauer, and Murphy (2016).
III. The Role of Supply Factors: Housing Supply is Tight

• House valuation (price-to-rent) ratios are more volatile in supply constrained areas reflecting demand interacting with supply factors

• House price changes reflect inventories, now tight

• Inventories tight partly because the supply response to prices has been muted. Digging deeper, why?
  – Zoning limits supply, gap existing prices and building costs
  – Land prices trend upward—reflect zoning, lack of new infrastructure to raise effective (commutable) land supply, other regulations limiting construction
  – Higher barriers especially limit incentives to build starter homes
Price-to-Rent Ratios of U.S. Metros Vary More for Cities with Low Elasticities of Housing Supply

Price-to-rent ratio (1997:Q4 = 100)

Lower inventories consistent with house price appreciation

*Year-over-year rate of change, lagged one quarter  **Three-quarter moving average
NOTE: The inflation-adjusted house price appreciation series is lagged by two quarters to more clearly align the two series.
SOURCES: Federal Housing Finance Agency; Freddie Mac; Bureau of Economic Analysis; National Association of Realtors; and author's calculations.
Lower inventories consistent with house price appreciation

### House price change*

*Year-over-year rate of change, lagged one quarter

### Months of supply**

*Three-quarter moving average

NOTE: The inflation-adjusted house price appreciation series is lagged by two quarters to more clearly align the two series.

SOURCES: Federal Housing Finance Agency; Freddie Mac; Bureau of Economic Analysis; National Association of Realtors; and author's calculations.
Share Major U.S. Housing Markets Where Existing House Prices Notably Exceed Construction and Land Costs

Real Residential Land Costs Oscillate Upwards Relative to the Real Costs of Constructing Structures

Price Index 1997:q4=100

Note: Recessions denoted by shaded areas. Series are deflated using the chain GDP price deflator.
Sources: Authors' calculations and seasonal adjustment of underlying data from NCREIF, Bureau of Economic Analysis, the Lincoln Land Institute and the R.S.Means Corporation.
IV. Housing Affordability

• Home ownership affordability sags
NOTE: The Housing Opportunity Index assumes that the family spends 28 percent of its gross income on a 30-year, fixed-rate mortgage with a 10 percent down payment.

SOURCES: National Association of Home Builders and Wells Fargo.
IV. Housing Affordability

• Home ownership affordability sags

• Rentals becoming hard to afford:
  – Since 1999, rental prices have outgrown median household income
  – And median income growth has lagged among younger households

• Partly manifest in trends in the share of adults living with their parents...which mainly reflects trends in poverty among the non-elderly, and to a lesser extent, trends in rental costs (very little evidence for age, longevity, or shifts in marital status as factors)
Rise and fall of homeownership rates very pronounced among younger families

Percent of households

SOURCES: Census Bureau and author's calculations of adjustments for changes in decennial census-related survey procedures to make data more consistent over time.
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Real Median Household Income Has Inched Up Since 1999, But Has Fallen Relative To Rents

Real income, deflated by overall PCE prices: +4.4%

Real income, deflated by PCE rent prices: -15.5%

Sources: U.S. Census, Bureau of Economic Analysis, and authors' calculations. Shaded areas denote NBER recessions.
Median Income of Younger Households Has Stagnated

Index, 1970 = 100

NOTES: Grey shaded areas indicate NBER recessions.
SOURCES: Census Bureau; NBER.
The share of adults living with their parents

Overall share of adults living with parents (left axis)

The share of adults living with their parents trends with poverty among non-elderly adults

Percent of adults living with parents

Percent of adults (18-64) living in poverty

Age 18-64 poverty rate (right axis)

Overall share of adults living with parents (left axis)

Conclusion

• Housing affordability has declined for both owning and renting, reflecting the confluence of several factors.
• Housing demand has been bolstered by low interest rates especially adjusted for recent house price appreciation.
• But housing supply has been constrained, with land prices and regulations posing barriers to construction.
• Renters also affected by anemic income growth.
• Against a backdrop of low unemployment and low interest rates, policy options geared toward boosting the supply of housing (transportation affects housing supply) and raising the income prospects of poorer families could be particularly effective in addressing affordability.
Some Relevant Articles
(John V. Duca, Federal Reserve Bank of Dallas and Oberlin College)


- **How Mortgage Finance Reform Could Affect Housing**:

- **House Prices and Credit Constraints: Making Sense of the U.S. Experience**
  (Economic Journal 121, J. Duca, J. Muellbauer, and A. Murphy, May 2011).

- **Housing Markets and the Financial Crisis of 2007-09: Lessons for the Future**
  (Journal of Financial Stability 6, John Duca, John Muellbauer and Anthony Murphy, December 2010).

- **The Subprime Crisis** (Federal Reserve History Gateway Essay, Dec. 2013)
  [http://www.federalreservehistory.org/Events/DetailView/55](http://www.federalreservehistory.org/Events/DetailView/55)

- **When Will the U.S. Housing Market Stabilize?**
  (Dallas Fed Economic Letter, August 2011, John Duca, David Luttrell, and Anthony Murphy)

- **The Rise and Fall of Subprime Mortgages**
  (Dallas Fed Economic Letter, Nov. 2007, Danielle DiMartino and John Duca):

- **Early Signs of Home Overvaluation Emerging**