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Has Stagnant Real Income Growth Contributed to An Uneven U.S. Housing Market Recovery Following the Great Recession?

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ABSTRACT
The U.S. housing market recovery following the Great Recession has in many ways been atypical of earlier housing market recoveries. There is evidence that the recovery from 2011 through 2016 has disproportionately occurred among higher income earners, while improvement in the middle and moderate income sectors appears to have occurred later and to have been comparatively less robust. Stagnant growth in real median household income among moderate and middle income households and a weaker rate of new household formation during and immediately following the recession are seen as key variables contributing to an uneven housing market recovery.

INTRODUCTION

A number of variables are typically associated with a broad-based housing market recovery following recessions. As the economy begins to expand, home prices typically rise relative to rents, as buyers begin to take advantage of reduced home prices. As a growing number of households move from renting to purchasing, vacancy rates in rental housing begin to rise and the rate of increase in rents overall tends to stabilize. At the same time, permits for construction of new single family units begin to rebound as demand for homes increases. As the recovery gains strength, an excess demand relative to new inventory puts further upward pressure on prices. Much of what makes this trend possible is the return of robust job growth, along with rising median household incomes and a growing number of new households. As the market nears a peak, rising inflation in housing and throughout the broader economy brings intervention to reduce inflationary pressure by increasing the overall cost of consumer borrowing. Clearly this scenario, in many respects, appears to not characterize the current recovery.

To measure the extent to which the current housing market recovery has differed from previous ones, this study compares the housing market expansions following the three most recent economic recoveries following the business cycle downturns of July 1990 – March 1991, March 2001 – November 2001 and December 2007 – June 2009[1]. The study examines several variables and trends that are widely cited in analyses of the state of the housing market and poses the argument that the nature of the current housing market rebound is notably different from the previous two recoveries. Most notably, the current recovery appears to have been uneven across income levels, a departure from previous recoveries.

It is believed that this trend has been exacerbated by the pronounced lag in robust payroll jobs growth, a slower rate of new household formation, and sluggish real income growth during the recession and in the years immediately following its official end in June 2009. These trends are believed to have significantly suppressed demand for new homes as reflected in data on permits for new single family home construction,

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while at the same time maintaining stronger than expected demand for rental housing as reflected in comparatively low rental vacancy rates. Further, evidence of an uneven housing market recovery is revealed in data on new mortgage originations by borrower income level.

THE CURRENT HOUSING MARKET RECOVERY

2011 is often identified as the turning point for the nation's housing market, (OFHEO, FRBSF) based upon data on recovery of new housing starts and permits for new single family home construction (U.S. Census). OFHEO data also point to a notable upturn in new mortgage originations in 2011 following the sharp declines from 2007 through 2010 (2016).

Clearly, larger issues defined the years leading up to the last recession, including the near collapse of the nation's financial system, widespread lax lending practices with little oversight and evidence of unscrupulous mortgage lending practices while the years immediately following the financial crisis were characterized by a widespread reluctance on the part of lenders to make new home loans regardless of borrowers' credit or ability to pay.

However, by a number of measures, many of the same economic indicators that are typically associated with a broad-based housing market recovery appear to have taken a somewhat different direction since the end of the Great Recession in June 2009. Specifically, from 2011 through 2016, rents have continued to rise even as home prices have increased and vacancy rates in rental housing have shown a significant decline, an indication of continued strong rental demand even as the purchase market has strengthened. At the same time, the rate of growth in new housing starts has been less robust than in previous recoveries, and new household formation grew relatively slowly in the years during and immediately following the official end of the recession. At the same time overall inflation has remained relatively low, robust payroll job growth took nearly five years from the official end of the recession to regain momentum, and the unemployment rate has taken comparatively longer to decline during this recovery. Another indicator of an uneven recovery trend is that as of 2016 housing inventory has exhibited a disproportionate trend, with a greater supply of unsold homes at the higher end of the market and significantly less unsold inventory in the moderate to mid-range of the market. This suggests that the higher end of the market began to peak significantly sooner and that the moderate to middle range began to recover later.

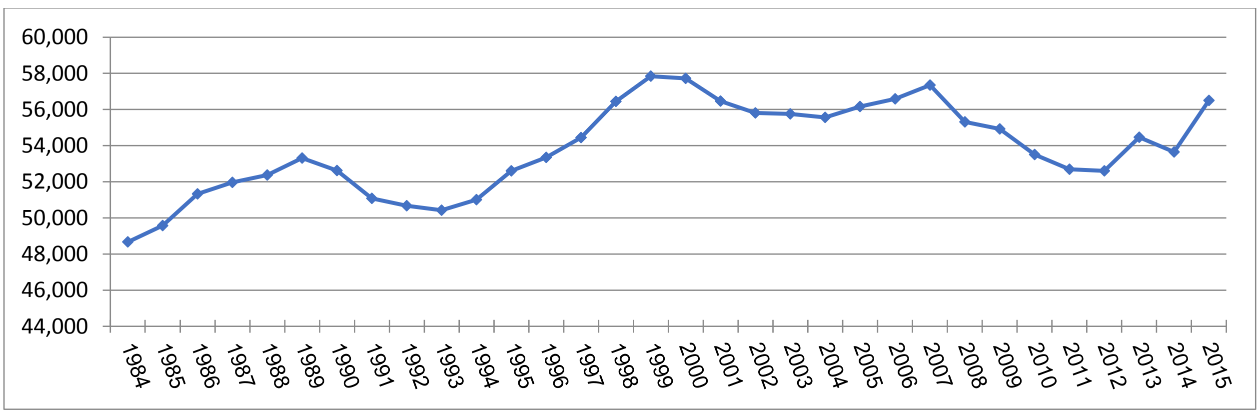
The strength of the housing market recoveries as measured by new single family housing starts following the July 1990 - March 1991 and March 2001 – November 2001 recessions was comparatively and significantly stronger than following the most recent recession. In second quarter 1991, housing starts expanded by 107 thousand and surpassed their pre-recession peak of 271 thousand units in second quarter 1992. From trough to peak, housing starts totaled 11.2 million (U.S. Census Bureau; FRB of St. Louis). Following the end of the 2001 recession, new single family housing starts expanded by 8.5 million from trough to peak. By contrast, in the nearly seven years since the official end of the Great Recession, new housing starts have grown by just 3.2 million through first quarter 2016.

There are also markedly different trends in terms of payroll job growth. In the months following the 1990-91 and 2001 downturns, the national economy continued to shed slightly more than 300 thousand and 500 thousand more jobs, respectively, before realizing net gains. By contrast, the economy lost another 1.2 million jobs in the six months following the official end of the Great Recession (U.S. Bureau of Labor Statistics).

Permits for new single family home construction have exhibited a similar weak recovery pattern. In the nearly seven years since second quarter 2009, new permits increased a total of 1.25 million through first quarter 2016. This number remains far below the cumulative totals in new permits at the peaks in the recovery phases of the 1990-91 and 2001 recessions, when new permits totaled 3.45 million and 2.76 million, respectively from trough to peak (U.S. Census Bureau).

While rReal median household income experienced a net increase of 7 percent from 1990 through 2015, it has still not recovered from the steep declines since its peak in 1999 at $57,843. From 2000 through 2015, the net gain in real median household income was 6.9 percent. Despite its rebound in 2015, the uneven pace of growth, interspersed with periods of notable decline, notably during and following the 2008-09 recession would appear to be a significant factor in the sluggish housing market recovery.

Chart: Real Median Household Income in the U.S.: 1984 - 2015



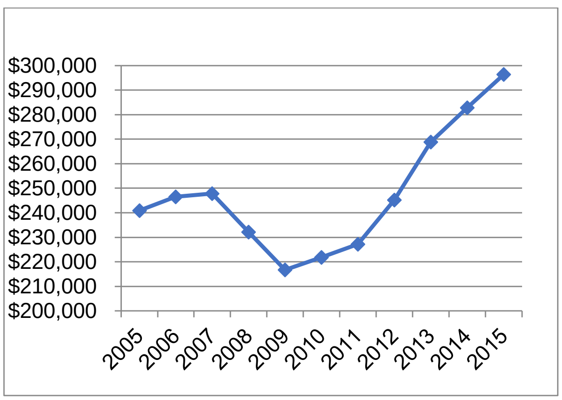
Source: Federal Reserve Bank of St. Louis.

Another measure often associated with the strength of a housing market recovery, rental vacancy rates, actually moved higher ***during*** the two previous recoveries than they have been throughout the current recovery. A comparatively larger percentage of people moved out of home ownership during and after the most recent recession and the demand for rental housing has actually *risen, not declined*, during the current housing market recovery (U.S. Census). Vacancy rates in rental housing averaged 7.2 percent during the 1990-91 recession before rising to 7.4 percent following its end; they averaged 8.5 percent during the 2001 downturn and averaged 9.4 percent in the recovery period between 2002 and the start of the downturn in Dec. 2007. By contrast, during the Great Recession, vacancy rates averaged 10.2 percent and declined from 9.8 percent in the quarter following its end to 7.0 percent in first quarter 2016 making this rate significantly lower compared with rates during the previous two recoveries. This suggests a disproportionately higher rental rate during the current recovery.

These trends are further evident in U.S. Census data on the percentage of households in owner occupied and rental occupied housing. Since the end of the recession in 2009 through 2014[2], the share of rental occupied housing has increased from 34.1 percent to 36.9 percent, while the share of owner-occupied housing has declined from 65.9 percent to 63.1 percent. Even during the stronger recovery phase from 2011 through 2014, renter occupied households continued to rise from 35.4 percent to 36.9 percent and owner-occupied households continued to decline as a percentage of total households (U.S. Bureau of the Census, American Factfinder)

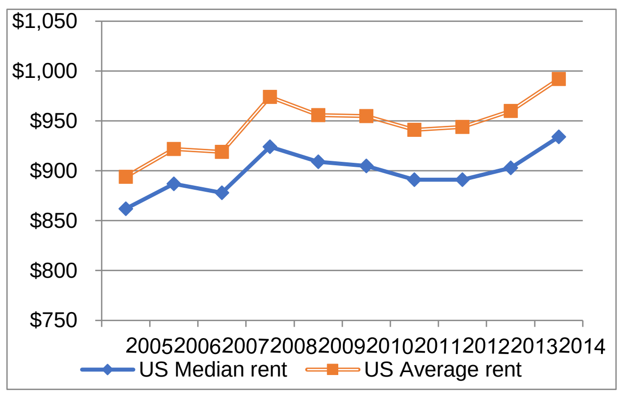
Further, **average rents have continued to increase along with home prices** throughout the recovery period. Historically, as sales of new and existing homes grow, the demand for rental housing tends to stabilize, with rents rising at a somewhat slower pace than home purchase prices. The increasingly strong demand for rental housing, an indicator of significant numbers of potential home buyers priced out of the market appears to have contributed to rising rental prices in this recovery. This evidence is observable in trends in the rental and new home sales markets during the housing market recovery. (Federal Reserve Bank of St. Louis).

Chart 2: Median Annual Sales Price- New Homes



Source: U.S. Census Bureau

Chart 3: Median and U.S. Avg. Rents: 2005 - 2014



Source: U.S. Census, American Community Survey

Also key to new home sales is the growth in new households. Since 2009, new household formation has increased by 3.1 percent. On an annual average basis, it has increased at a slower rate both during the 2008-09 recession and in the years immediately following it. By comparison, the annual rates of growth were greater both during and immediately following the previous two downturns (Congressional Budget Office).

Evidence of an uneven housing market recovery is further revealed in Home Mortgage Disclosure Act data on new mortgage originations for the purchase of owner-occupied housing by borrower income. HMDA data on new loan originations on 1 to 4 family owner occupied housing units from 2007 through 2014 reveal notable differences in the strength of the housing market recovery and the actual start of that recovery in relation to borrower income. The recovery appears to have occurred comparatively later for borrowers earning less than $249,000 annually than for borrowers earning $250,000 and over. Specifically, for borrowers in the $50,000 to $249,000 income range, loan originations did not begin to return to positive year-to- year growth until 2012. By contrast, new originations for borrowers earning $250,000 and over experienced a turnaround from negative to positive growth starting in 2010. At the same time the annual percentage increase in loan originations during the recovery period appears to be significantly stronger among borrowers earning $250,000 and over. These data point to a delayed and comparatively weaker recovery in the purchase market in the moderate to middle income range (Consumer Financial Protection Bureau).

The stronger recovery at the higher end of the income scale may also be reflected in a disproportionately higher number of all cash transactions, giving buyers the means to purchase without financing, which would not be reflected in the HMDA originations data. This percentage has been greater in the current recovery in contrast to the over leveraging characteristic of the previous boom. Cash sales were estimated to comprise 35 percent of all home sales in March 2015, according to Core Logic (June 2015). While this share was even higher – at 46.5 percent of all purchases in January 2011, the percentage still represented more than a third of all home purchases and is significantly higher than the 25 percent average prior to the housing crisis (Core Logic, 2015). Cash purchases, perhaps also associated with investment purchasers would be expected to be less of an option for most buyers in the moderate to middle income range.

Taken together, both the rental and purchase market trends suggest that indeed, as many metropolitan areas' housing markets have recovered and are booming, a shortage of supply in the mid-range of the home purchase market has contributed to increased demand for rental housing, driving up rents. In these markets, the typical slowing of the rate of growth in rents relative to rising home prices does not appear to be occurring this time around.

In examining housing market strength by purchaser income, housing inventory is also important. At this point in the recovery, an excess supply of homes at the upper end of the purchase market has begun to emerge in contrast to strong demand and lack of supply in the moderate to middle income range. Significant differences in the inventory of months' supply of homes on the market by price range suggest that the upper income market may be nearing a peak with higher inventory levels suggesting an emerging oversupply. As of January 2016, there was a 5.9-month supply of housing in the low-to–middle price tier, compared to a 6.2-month supply in the moderate to mid-price tier and a 9.3-month supply in the high price tier (CoreLogic, 2015).

Consumer borrowing rates and the 30-year mortgage rate have remained at historic lows, as has the overall Consumer Price Index since the official start of the current recovery. Inflation has been disproportionately concentrated in the housing market –in both the purchase and rental markets. From June 2009 through year end 2015, the median sales price of new homes nationally increased 27.3 percent or an average of 4.72 percent per year. By contrast, the Consumer Price Index for rent of primary residence increased from 249.4 in June 2009 to 290.7 as of December 2015, an average increase of 6.9 per year. This suggests that demand for rental housing has remained strong despite continued low borrowing rates.

The sluggish of the recovery in the job market, stagnant real income growth and a slowed rate of new household growth during the recession years of 2008 and 2009 and after have contributed to the delayed ability to purchase, particularly within the moderate to middle income levels. Further, the growth in income and wealth inequality that has characterized this recovery suggests that the ability to purchase has not recovered or increased evenly across all income levels, which is atypical of past recoveries.

This study investigates the significance of the prolonged return to robust payroll jobs growth, the stagnation of real median household income, median home prices, the Consumer Price Index for the rent of primary residence, and the slowed pace of new household formation in the years following the recession in the emergence of a comparatively weak housing market recovery since the end of the Great Recession.

REVIEW OF LITERATURE

Some recent studies have begun to examine why the current housing market recovery has exhibited different characteristics relative to prior recoveries. They point to a number of features that distinguish the impact of the recession and of the recovery that began in 2011 including divergent trends in house price to rent ratios, housing starts and new household formation.

Glick, Lansing and Molitor (2015) observe that the present recovery has not been fueled by excessive household leverage or mortgage debt-to-income ratios. At the same time, they identify three indicators that have displayed a significantly different pattern in this recovery relative to the years leading up to the 2006 housing market peak. Specifically, while median house prices, housing starts and construction employment all peaked in 2006 just prior to the business cycle peak and housing market decline, these measures have exhibited very different rates of recovery, with housing starts in particular remaining significantly below their previous peak (2015). Further, they point to the divergence of house price-to-rent ratios since the recovery, in stark contrast to the run-up to the last peak (2015).

Paciorek (2016) points to the declining rate of new household formation since 2007 following the housing market collapse and subsequent recession. He finds that from 2007 – 2011 the rate of net household formation slowed by more than half its pre-recession annual rate in the five years preceding the downturn. After controlling for demographic changes such as the aging of the population, he finds that the prolonged weak labor market discouraged new household formation, thus depressing the housing market (2016).

Similarly, Lee and Painter (2013) examined how economic conditions have a direct impact the formation of new households. They cite evidence that during economic downturns, potential household formation may be delayed as younger labor market participants choose to continue residing with parents or sharing living spaces with others. The authors find that both increased unemployment rates and recessionary conditions have a direct impact on reduced new household formation.

Other models predicting the onset of a housing bust assume several trends that have indeed been observed historically in housing market cycles. One such model (Mueller, 1999) identifies four phases of the real estate cycle, characterized by recovery, expansion, hyper supply and recession. In Mueller's account of these phases, one sign of trouble begins to emerge when rent growth begins to decelerate. However, in the current recovery phase, rent growth has continued to *accelerate* as housing supply in the mid-market range has remained tight.

MODEL

To examine the question of whether and to what extent new home purchases are a function of trends often associated with a recovering housing market this analysis examines the significance of several variables over three post-recession recovery periods. These include the change in real median household income, median home prices, the rate of change in new household formation, the CPI on rent of primary residence, non-farm payroll jobs growth, permits for construction of new single family homes, the 30-year mortgage interest rate, and rental vacancy rates. The purpose is to examine the extent to which each of these variables were associated with different outcomes over the three housing market recoveries during March 1991 – March 2001, November 2001 – December 2007, and June 2009 to the present. For the purposes of this analysis, data through December 2015 is used as data for all variables is available through that date.

New home sales functions as an indicator of the extent of housing market recovery[3] and are defined as a function of real median household income, non-farm payroll jobs growth, the rate of growth of new household formation, median home prices, 30-year mortgage interest rate, new permits, rental vacancy rates and the CPI for rent of primary residence.

Variables that are expected to be strongly associated with growth in real median household income include the change in non-farm payroll jobs and the rate of growth of new households. New household formation is believed to be positively associated with demand for new homes. The interest rate on the 30-year mortgage is expected to be negatively correlated with new home sales as lower rates attract new buyers. Further, the consumer price index on rent paid on a primary residence is expected to stimulate demand for new home sales as the costs of renting surpass the cost of purchasing. A rate of growth in this index that exceeds the growth rate in new home prices is expected to be associated with demand for new homes and thus would be reflected in higher rental vacancy rates.

For each recovery period, the following is estimated:

$$y = \beta o + B_o \beta 1x1it1 + \beta 2x2it1 + \beta 3x3it1 \cdots \beta kxkit1 + \varepsilon i\ t1$$

$$\gamma = \beta o + \beta 1x1it2 + \beta 2x2it2 + \beta 3x3it2 \ldots \beta kxkit2 + \epsilon it2$$

$$\gamma = \beta o + \beta 1\chi 1i\tau 3 + \beta 2\chi i\tau 3 + \beta 3\chi 3\tau 3 \ldots + \beta\kappa\chi\kappa i\tau 3 + \varepsilon i\tau 3$$

Where *t1* = Recovery phase March 1991 – March 2001,

t2 = Recovery phase November 1 – December 2007, and

t3 = Recovery phase June 2009 - present

$\beta 1 = median\ home\ price, (Medhomepr)$

$\beta 2 = 30 - year\ mortgage\ int.rate, (Mortgrate)$

$\beta3 = real\ median\ household\ income\ (RMEDHHINC),$

$\beta4 = Rate\ of\ change\ in\ new\ households\ (Households),$

$\beta5 = CPI\ on\ rent\ of\ primary\ residence\ (CPIrentprimeres),$

$\beta6 = Non - farm\ payroll\ job\ numbers\ (NFPayrollQ),$

$\beta7 = rental\ vacancy\ rates (Rent\ VAC) and$

$\beta8 = permits\ for\ new\ single\ family\ home\ construction$

For each period, correlations were first estimated to determine the extent of significance of these variables. The findings of correlation analyses over each of these three recovery phases reveal some differences.

FINDINGS

Over the March 1991 through March 2001 recovery, all of the specified variables are significant at the 0.01 percent level. As one would expect, each of these variables, with the exception of the 30-year mortgage interest rate, are positively correlated with new home sales. The results appear to confirm an outcome that would be expected in a typically recovery phase. The significance of the variables in the estimation is further confirmed with an adjusted R^2 of 0.936 and an indication of significance in the analysis of variance.

By contrast, the November 2001 – Dec 2007 trough to peak period, appears atypical of what would be expected in a housing market recovery. Real median household income, permits for new single family construction, and the mortgage interest rate were all significant at the 0.01 percent level, while non-farm payroll changes and rental vacancy rates were significant at the 0.05 percent level. However, the rate of change in new households, median home price and the CPI on rent paid on primary residence were not significant at all. Perhaps most notable here is the *negative* correlation between both real median household income and non-farm payroll growth and new home sales. Both of these variables would typically be expected to be *positively* correlated with new home sales and in the prior recovery, this was the case.

Knowing the events that characterized the housing market during this period, the outcome here is not surprising. Knowing the events that characterized the housing market during this period, the outcome here is not surprising. At the same time, rising home prices appeared to be less of an obstacle to purchasing and obtaining home loans. Further, the large number of investment purchases and/or the increase in ownership of multiple properties by many households might partly explain the lack of significance of new household formation. In fact, new household formation shows a slightly negative correlation with new home sales.

The adjusted R^2 of 0.89 suggests these variables were strongly predictive of new home sales. However, given that this period corresponds to the ‘housing bubble’ the lack of significance of some variables that would typically be associated with a housing recovery, such as median home price and the change in new households, are not.

Finally, during the recovery from June 2009 to the present, there appears to be one finding worth noting that points to a divergence from the 1991 – 2001 period. Rental vacancy rates are strongly *negatively* correlated with new home sales, quite the opposite of the strong *positive* correlation evident from the March 1991 through March 2001. This suggests that the low vacancy rates during the current may be an indicator of a barrier to purchasing despite the rising CPI on rents.

However, some variables that were expected to exhibit a negative impact on new home sales – sluggish real median household income growth and the slowed rate of growth in new household formation - both during and in the two years immediately following the official end of the recession - do not appear to have exerted the drag on purchases that was expected. Indeed, the rate growth of households did begin to rebound as the recovery gained momentum and the significance of that strengthening appears to be reflected in these findings.

CONCLUSIONS AND POSSIBLE DIRECTIONS FOR FURTHER INQUIRY

There are a couple of possible directions for investigating the suspected disproportionate recovery in housing. One would be to take a closer look at these variables at the metropolitan area level. One possibility would be to examine two or more metropolitan areas that illustrate quite different trends in terms of income growth, new household formation and rental vacancy rates. Another possible approach would be to compare groups of metropolitan areas that exhibit very different trends in variables associated with the recovery process that have been discussed here. Discrepancies in home price growth and income gains across MSA's might reveal more about the nature of the current recovery than a national focus.

ENDNOTES

1. These periods are based on the National Bureau of Economic Research procedure of recession dating; www.nber.org/cycles/main.html

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