



**Congressional Budget Office**

**Background Paper**

# **Housing Wealth and Consumer Spending**

**January 2007**





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## **Note**

On January 9, 2007, this document was revised to include a corrected version of Figure 3.

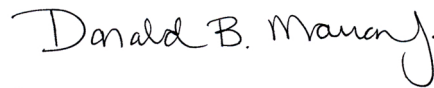
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# Preface

**T**he Congressional Budget Office (CBO) regularly examines issues and developments that could affect its economic forecasts. Consumer spending, an important part of those forecasts, is affected by household wealth, including housing wealth. This background paper examines the potential effect of changes in housing wealth on consumer spending. As with other CBO background papers, it is designed to make the agency's analyses more transparent by explaining CBO's methodologies and assumptions.

Mark Lasky of CBO's Macroeconomic Analysis Division prepared the paper with the assistance of Andrew Gisselquist and under the supervision of Robert Dennis and Kim Kowalewski. Juan Contreras, John Peterson, Frank Russek, John Sabelhaus, and G. Thomas Woodward provided useful comments.

Michael Treadway edited the paper, with assistance from Loretta Lettner. Maureen Costantino prepared the paper for publication. Lenny Skutnik produced the printed copies, and Linda Schimmel handled the distribution. This publication and others by CBO appear on the agency's Web site ([www.cbo.gov](http://www.cbo.gov)).



Donald B. Marron  
Acting Director

January 2007



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# Housing Wealth and Consumer Spending

After growing impressively from the mid-1990s until early 2006, housing prices have started to soften. From August through November 2006, the median sales price of existing single-family homes was lower than it had been a year earlier. Other, less up-to-date measures of nationwide prices, although not yet posting year-over-year declines, are rising much more slowly than they had been.

At the same time that home prices were rising rapidly during the late 1990s and early 2000s, consumer spending was growing faster than income, as reflected in the falling rate of personal saving. Many observers have concluded that those two facts are linked: that consumers used their growing housing wealth to boost their spending, in effect letting their houses do their saving for them. Assuming that those observers are correct, the future path of consumer spending will depend on the future path of home prices and how consumers react to those prices. Most analysts believe that an increase in home values permanently increases consumer spending in every subsequent year by some fraction of that rise in value—the so-called wealth effect. An increase in the housing wealth of households reduces the need for homeowners to save for the future, allowing them to spend more than they otherwise would have spent.

Some analysts find an additional link between housing prices and consumer spending. Increased home prices add to home equity, which cash-constrained households can withdraw to fund current purchases. For such households, a rise in home prices may temporarily add to consumer spending beyond the amount attributable to the wealth effect. But the size and even the existence of that temporary effect remain uncertain.

The most likely scenario over the next year is that changes in home prices will have a moderately negative impact on the growth of consumer spending. Under that scenario, weak increases or moderate declines in home prices will prevent housing wealth from keeping pace with income, reducing the wealth effect and leading to an increase in the personal saving rate. For each dollar by which the increase in housing wealth falls short of the increase needed to keep the ratio of housing wealth to income constant, consumers will trim their outlays by between 2 and 7 cents per year from what they otherwise would have spent. This scenario envisions no temporary impact from rising home prices on consumer spending.

A worse outcome for consumer spending is possible if housing prices fall significantly or if some current spending is based on unrealistically optimistic expectations of future gains in home prices. Alternatively, if the temporary effect of rising home prices on consumer spending is large, slow growth of home prices will put significant downward pressure on consumer spending whether prices actually fall or not.

Housing prices can have still other effects on the economy that are not examined in this Congressional Budget Office (CBO) paper. When housing prices rise, homeown-

ers may extract some of their newfound equity to make home improvements, which are counted as a component of residential construction rather than as consumer spending. Most studies do not examine that effect, and so it is difficult to quantify. Nor does this paper examine the possible effects of changes in housing prices on the construction of new homes or on the financial condition of heavily indebted households.

## **Past Trends in Housing Prices and Consumer Spending**

By any measure, home prices rose unusually rapidly over the past several years until very recently. Between the first half of 2000 and the first half of 2006, the median sales price of existing single-family homes rose by 56 percent, or 7.7 percent per year, more than 5 percentage points faster than annual inflation, as measured by the price index for consumer expenditures. Over the previous 32 years, the price of the median home rose only 1.8 percentage points faster than the price index for consumer expenditures, on average.

Measuring changes in home prices by either the median price or the average price of all homes sold fails to adjust for changes in the mix of homes being sold. Adjusting for changes in the mix, however, leaves the general picture unchanged. In fact, in the second quarter of 2006, the repeat-sales housing price index published by the Office of Federal Housing Enterprise Oversight (OFHEO) stood an even-higher 70 percent above its value in the second quarter of 2000 and had risen by 100 percent since the second quarter of 1997.<sup>1</sup> Relative to the price index for personal consumption expenditures, the recent increase in home prices is much larger than that observed in past upswings (see Figure 1). Another measure of home prices that adjusts for changes in the type of homes sold is the Census Bureau's quality-adjusted price index of new single-family houses sold; that index rose by a smaller 39 percent between mid-2000 and mid-2006. Even so, it still outpaced the price index for personal consumption expenditures by a healthy 24 percentage points over that period.

As housing prices surged in the late 1990s and early 2000s, consumers boosted their spending faster than their income rose. That was reflected in a sharp drop in the personal saving rate. (Saving is income from current production minus consumer spending and so excludes capital gains on housing and other assets.) Personal saving fell from 2.9 percent of disposable income in the first half of 1999 to -0.9 percent in the

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1. OFHEO's weighted repeat-sales index measures the average price change in repeat sales or refinancings of the same properties. As a result, it is less subject to distortion from changes in the average quality of houses sold than is the overall median or average price. The index is based on transactions involving conforming conventional mortgages purchased or securitized by the government-sponsored mortgage enterprises Fannie Mae or Freddie Mac. The reliance on conforming loans may impart a bias to that measure. In addition, some analysts argue that refinancings impart an upward bias to the index, but an alternative price index for only purchases shows the same pattern over time as the overall index, with a small difference since 2004.

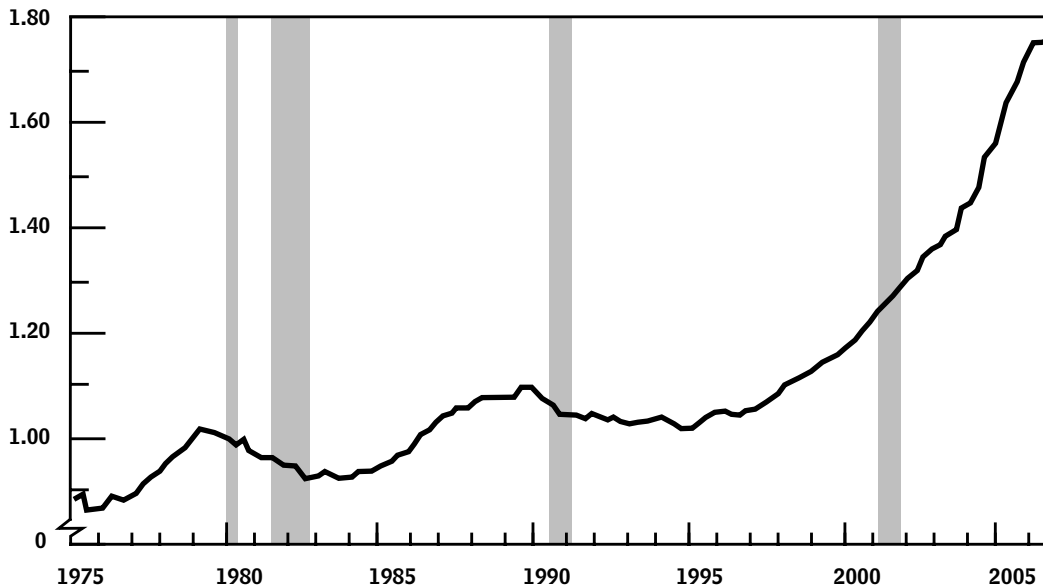
**Figure 1.**

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## Real Price Index of Houses Sold

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(Index, 1980:1 = 1.0)



Sources: Congressional Budget Office, the Office of Federal Housing Enterprise Oversight (OFHEO), and the Bureau of Economic Analysis.

Note: The series is the OFHEO repeat-sales price index divided by the price index of personal consumption expenditures, indexed to the first quarter of 1980. Shaded areas indicate periods of recession.

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first half of 2006 (see Figure 2).<sup>2</sup> Other factors also played an important role: higher stock prices contributed to the sharp drop in saving in 1999, falling stock prices from 2000 to early 2003 countered the negative effect of higher home prices on the saving rate during that period, and rising energy prices may have pushed the saving rate down in 2005 and 2006. However, as noted above, many analysts see a relationship between today's high home prices and the negative saving rate.

In recent months, home prices have leveled off or even fallen. The OFHEO price index rose at just a 3.5 percent annual rate in the third quarter of 2006, and the median sales price of existing single-family homes was 3.4 percent lower in October than it had been a year earlier. As a result, there is now a lively debate as to whether housing is overvalued or not and how home prices will behave in the future. Some

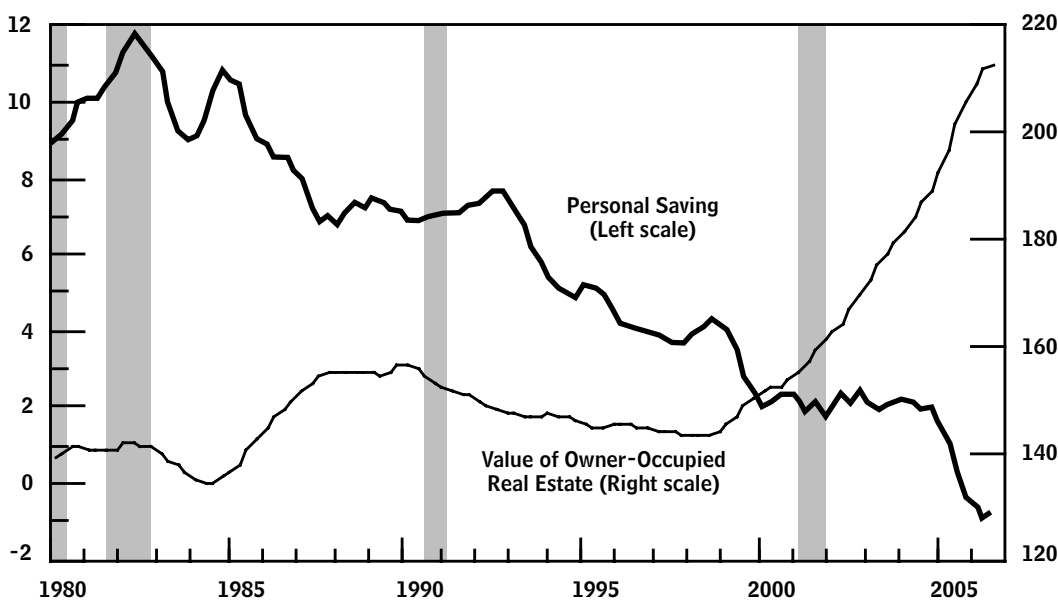
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2. See William G. Gale and John Sabelhaus, "Perspectives on the Household Saving Rate," *Brookings Papers on Economic Activity*, no. 1 (1999), pp. 181–214, and Jonathan McCarthy and Charles Steindel, "Housing Activity, Home Values, and Consumer Spending" (New York: Federal Reserve Bank of New York, April 2006, draft). The analysts argue that total private saving is a more accurate measure of saving than personal saving alone. In that view, higher undistributed corporate profits explain some portion of the decline in personal saving commonly attributed to higher home prices.

**Figure 2.**

## Housing Wealth and the Personal Saving

(Percentage of personal disposable income)



Sources: Congressional Budget Office, the Bureau of Economic Analysis, and the Federal Reserve Board.

Note: Data are four-quarter moving averages. Shaded areas indicate periods of recession.

economists think that economic fundamentals justify the run-up in prices through at least 2004; others argue that homes are currently overvalued and will continue to fall in price.<sup>3</sup> This paper does not attempt to explain the recent history of home prices but instead takes it as given. The key concern of this analysis is the effect that future movements in home prices will have on consumer spending. That effect will depend on the degree to which the impact of increased home prices is permanent and the degree to which it is transitory.

## Permanent Effects of Housing Prices on Consumer Spending

Analysts generally agree that an increase in housing wealth due to higher real home prices (that is, resulting from home prices rising faster than inflation) permanently

3. See Charles Himmelberg, Christopher Mayer, and Todd Sinai, "Assessing High House Prices: Bubbles, Fundamentals and Misperceptions," *Journal of Economic Perspectives*, vol. 19, no. 4 (2005), pp. 67-92. The analysts argue that the rise in home prices through the end of 2004 is consistent with the drop in the user cost of housing due to lower mortgage rates. See also Robert J. Shiller, "Long-Term Perspectives on the Current Boom in Home Prices," *Economists' Voice*, vol. 3, no. 4 (2006), article 4. The author counters that "homeowners face substantial risk of much lower prices that could stay low for a long time."

raises real consumer spending by an annual amount that is a fraction of the increase in housing wealth—the wealth effect described above. All else being equal, a higher real home price gives a household more resources to spend over its lifetime, some of which the household uses to increase current spending. Alternatively, one can think of a higher home price as enabling a household to achieve the same future level of spending without having to save as much now.

Most households prefer to smooth their spending over their lifetime if they can, to avoid experiencing a very low standard of living for any extended period. Thus, an unexpected windfall, such as an unusually large increase in the value of one's home, will typically be spent over many years rather than immediately. This spreading of the wealth effect over an entire lifetime means that only a fraction of the increase in a home's price in a given year will be spent in that year, with the rest being spent in later years.<sup>4</sup>

However, housing wealth is not merely an asset, like shares of stock, that can be used to finance other spending. Unlike stocks, housing also provides shelter, an essential commodity. Greater housing wealth raises spending on nonhousing goods and services only if it causes households to hold fewer nonhousing assets than they otherwise would have held, or if it causes them to extract equity from their homes, either through increased borrowing or by moving to a cheaper residence. Otherwise, there is no wealth effect. If households do finance other spending by extracting equity from their homes, one might expect at least some of that drawdown of equity to occur during retirement. In fact, however, in the absence of a major shock—such as the death of a spouse or the entry of a family member into a nursing home—housing equity declines very little among elderly households.<sup>5</sup>

The fact that many homeowners do not withdraw equity from their home in old age does not mean that home prices have no impact on consumer spending during those homeowners' working years, for several reasons. First, homeowners may instead extract equity during their working years and then hold more housing debt in retirement than they would have otherwise. Second, even homeowners who expect to remain in their home and do not extract equity during their working years still have the option of selling the home if they run into difficult financial straits. Indeed, elderly households experiencing a major adverse shock reduce their housing equity by almost 8 percent on average.<sup>6</sup> Building up home equity may thus serve as a form of precautionary saving that in turn reduces the need for such saving in financial assets.

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4. See Albert Ando and Franco Modigliani, "The 'Life-Cycle' Hypothesis of Saving: Aggregate Implications and Tests," *American Economic Review*, vol. 53, no. 1 (1963), pp. 55–84. The authors were the first to formalize the notion that consumers smooth spending over their life cycle.

5. Stephen F. Venti and David A. Wise, "Aging and Housing Equity: Another Look," Working Paper No. 8608 (Cambridge, Mass.: National Bureau of Economic Research, November 2001).

6. *Ibid.*

**Table 1.****Recent Estimates of the Effect of Housing Wealth**

<b>Study Author(s)</b>	<b>Estimated Marginal Propensity to Consume Out of an Additional Dollar in Housing Wealth (Cents)</b>	<b>Type of Data</b>
Belsky and Prakken <sup>a</sup>	4.5 (After one year) 5.6 (In the long run)	Aggregate
Benjamin, Chinloy, and Jud <sup>b</sup>	8 to 16	Aggregate
Carroll, Otsuka, and Slacalek <sup>c</sup>	1.8 (In the short run) 4 to 10 (In the long run)	Aggregate
Case, Quigley, and Shiller <sup>d</sup>	1.7 to 3.7	State
Iacoviello <sup>e</sup>	21 (In the current quarter) 6.5 (Thereafter)	Aggregate
Juster and others <sup>f</sup>	3	Micro
Lehnert <sup>g</sup>	1.9 to 3.1	Micro

Source: Congressional Budget Office based on the studies cited below.

Note: The estimates presented in this table assume no impact from mortgage equity withdrawal. "Aggregate" data are for the whole United States. "Micro" data are derived from individual households. For studies estimating the elasticity of spending with respect to housing wealth, the estimates are converted to the marginal propensity to consume using data for consumer spending and wealth for the second quarter of 2006.

- a. Eric Belsky and Joel Prakken, *Housing Wealth Effects: Housing's Impact on Wealth Accumulation, Wealth Distribution and Consumer Spending* (prepared for the National Association of Realtors National Center for Real Estate Research, 2004).
- b. John D. Benjamin, Peter Chinloy, and G. Donald Jud, "Real Estate Versus Financial Wealth in Consumption," *Journal of Real Estate Finance and Economics*, vol. 29, no. 3 (2004), pp. 341–354.
- c. Christopher D. Carroll, Misuzu Otsuka, and Jirka Slacalek, "How Large Is the Housing Wealth Effect? A New Approach," Working Paper No. 12746 (Cambridge, Mass.: National Bureau of Economic Research, December 2006).
- d. Karl E. Case, John M. Quigley, and Robert J. Shiller, "Comparing Wealth Effects: The Stock Market Versus the Housing Market," *Advances in Macroeconomics*, vol. 5, no. 1 (2005), article 1.
- e. Matteo Iacoviello, "Consumption, House Prices, and Collateral Constraints: A Structural Econometric Analysis," *Journal of Housing Economics*, vol. 13 (2004), pp. 304–320.
- f. F. Thomas Juster and others, "The Decline in Household Saving and the Wealth Effect," *Review of Economics and Statistics*, vol. 87, no. 4 (2005), pp. 20–27.
- g. Andreas Lehnert, "Housing, Consumption, and Credit Constraints," Finance and Economics Discussion Series No. 2004–63 (Washington, D.C.: Federal Reserve Board, September 2004).

Similarly, to the extent that homeowners intend to leave their home as a bequest, an increase in home prices reduces the amount of other saving needed to provide the same bequest.

As already mentioned, most estimates of the wealth effect in the United States fall within a range of about 2 cents to 7 cents of extra spending per extra dollar of housing wealth (see Table 1).<sup>7</sup> That is, all else being equal, a \$1,000 increase in the price of a home this year will generate \$20 to \$70 of extra spending this year and in each subsequent year. Some studies assume that the size of the wealth effect changes over time; two of those studies find that the effect is larger in the first year than in subsequent years, while a third study finds the reverse.

Given those findings, one can estimate the impact of the increase in home prices since 1997 on consumer spending and saving. In making such estimates, changes in home prices should be compared with changes in the cost of living; if home prices rise only by the same percentage as consumer prices, the amount of goods and services that a home can be sold for remains unchanged, and so there is no wealth effect.

The rise in real home prices between mid-1997 and mid-2006 added \$6.5 trillion to consumer wealth.<sup>8</sup> Combining that estimate with households' propensity to spend from housing wealth indicates that the rise in real home prices since mid-1997 has added between \$130 billion and \$460 billion per year to consumer spending.<sup>9</sup> That estimate implies that consumer spending would be 1.4 percent to 5.0 percent lower than it is if real home prices had risen only at their trend rate since mid-1997, all else being equal. (The qualifier "all else being equal" is important because other drivers of consumer spending, such as household income, could be different if home prices were lower today than they are.)

The extra spending stemming from greater housing wealth explains at least some of the drop in the personal saving rate over the past 10 years. From an average of 3.7 percent of disposable personal income in 1997, the saving rate fell to -1.4 percent in the

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7. Studies differ on whether the impact of greater nonhousing wealth on consumer spending is larger, smaller, or the same as that of greater housing wealth.

8. Assuming that the expected change in the real price of a home is its historical trend, the increase in wealth resulting from changes in home prices in a given year is the real change in the OFHEO price index minus its 0.8 percent a year trend over the 1975–1995 period multiplied by the value of owner-occupied real estate in that year. Alternative methods of making that calculation give smaller or larger estimates of the change in housing wealth. According to the flow-of-funds data used by McCarthy and Steindel in "Housing Activity, Home Values, and Consumer Spending," holding gains on real estate between mid-1997 and mid-2006 totaled \$9.4 trillion. See also Dean Baker, "The Menace of an Unchecked Housing Bubble," *Economists' Voice*, vol. 3, no. 4 (2006), article 1. The analysis finds that the gain over roughly the same period was "more than \$5 trillion."

9. The translation of the rise in home prices into an effect on spending is rough because consumers do not immediately adjust their spending all the way up to the new desired long-run level in response to higher home prices.

second quarter of 2006. (The latter figure may be subject to considerable revision.) If real home prices had grown at their historical trend after 1997, and if spending was reduced by 2 cents per year for each dollar of housing wealth not realized, the saving rate would have been zero in the second quarter. If, instead, spending was 7 cents per year lower for each dollar of housing wealth not realized, the personal saving rate would have been 3.5 percent in the second quarter of 2006, nearly equal to the rate in 1997.

The wealth effect may be larger than those estimates imply if current home prices do not fully reflect some homeowners' expectations of future prices. For example, a survey conducted in 2004 found that 28 percent of home buyers in Boston, Los Angeles, and San Francisco expected home prices to rise by 20 percent or more per year on average for the next 10 years.<sup>10</sup> For homeowners who expect such outsize gains in the prices of their homes in the future, spending is increased not just by the traditional wealth effect but also by the impact of those expected capital gains. Such homeowners will most likely reduce their spending if the expected gains in price fail to occur, even if prices do not actually fall.

On the other hand, some homeowners may think that homes are overvalued but may be reluctant to cash in their gains by selling and moving to a smaller home or renting, because of the high costs of selling and moving. Those homeowners would not reduce their spending if home prices were to fall in line with their expectations.

### **Transitory Effects of Housing Prices on Consumer Spending**

A rise in home prices could have a short-lived effect on consumer spending, in addition to the permanent wealth effect, if higher home prices ease borrowing constraints, especially for younger households. Young workers generally earn much less than they will when they are older, even after an adjustment for inflation, and they may also have student loans to repay. If they find it difficult to borrow against future income at favorable interest rates, they may be forced to spend less than they would if they could smooth their lifetime income without any borrowing constraint. Young homeowners whose homes appreciate in value, however, can tap the additional equity and move

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10. See Karl E. Case and Robert J. Shiller, "Mi Casa Es Su Housing Bubble," *Wall Street Journal*, August 24, 2004, p. A12. That rate of increase implies that those home buyers expected a home worth \$400,000 in 2004 to be worth more than \$2.4 million in 2014. It is hard to know how such survey results relate to the actual expectations people use when they make purchasing decisions.



their current standard of living closer to the desired level.<sup>11</sup> The size and even the existence of such a transitory effect on spending are much debated by analysts.

One can think of that transitory effect as a wealth effect that is front-loaded rather than constant over time. That is, the present value of current and future changes in the level of real consumer spending resulting from higher home prices today is the same as that seen in the traditional wealth effect, but households facing borrowing constraints spend a larger fraction of the increase now and a smaller amount in future years. If that transitory effect is important, then a slowing of the rate of increase of home prices will push the overall saving rate up, even if real home prices do not actually fall.

Many analysts measure the transitory impact of higher home prices on consumer spending by looking at net mortgage equity withdrawal (MEW), defined by the Federal Reserve as “the discretionary initiatives of homeowners to convert equity in their homes into cash by borrowing in the home mortgage market.”<sup>12</sup> Technically, MEW equals cash-outs from refinancings, plus originations of mortgages to finance purchases of existing homes, minus debt canceled from homes sold, plus the change in home-equity debt outstanding, minus unscheduled repayments of mortgage debt, minus mortgage transaction fees, points, and taxes. “Active” MEW, the measure preferred by some analysts, excludes the change in mortgage debt associated with

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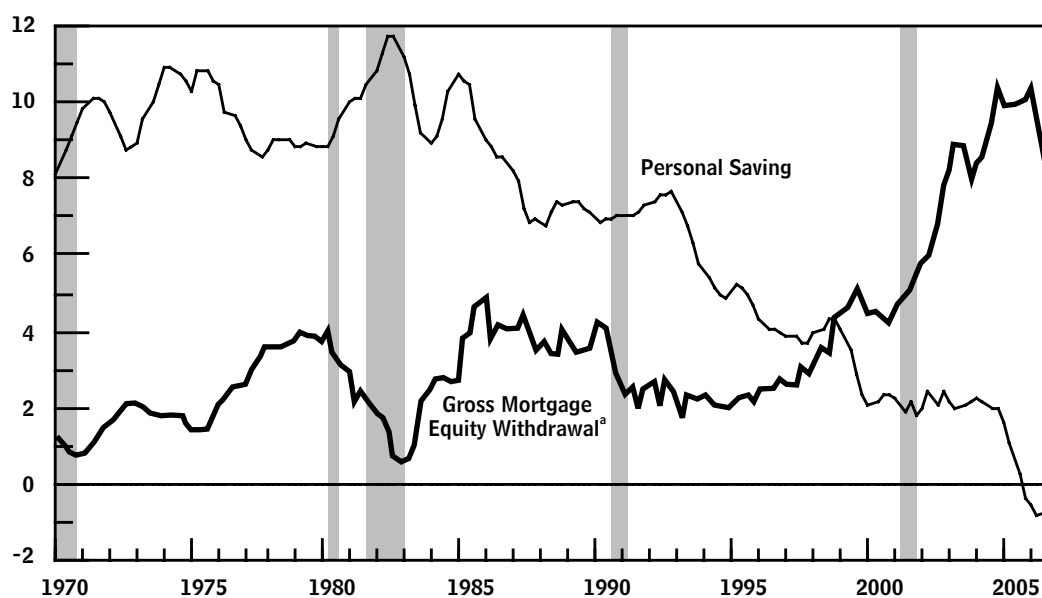
11. See Pierre-Olivier Gourinchas and Jonathan A. Parker, “Consumption over the Life Cycle,” *Econometrica*, vol. 70, no. 1 (2002), pp. 47–89. The analysts find that households generally act like liquidity-constrained consumers until about age 40, when they begin to act more like traditional life-cycle consumers who accumulate assets during their working lives and then draw them down during retirement. See also Jonathan Skinner, “Is Housing Wealth a Sideshow,” *Advances in the Economics of Aging* (Chicago: University of Chicago Press, 1996), pp. 241–268. The author finds that the wealth effect is roughly twice as large for households headed by an individual less than 45 years old than for other households. See Andreas Lehnert, “Housing, Consumption, and Credit Constraints,” Finance and Economics Discussion Series No. 2004-63 (Washington, D.C.: Federal Reserve Board, September 2004). The author finds that the groups whose spending responds most to a rise in home values are those ages 25 to 34 and ages 52 to 62. See Matteo Iacoviello, “Consumption, House Prices, and Collateral Constraints: A Structural Econometric Analysis,” *Journal of Housing Economics*, vol. 13 (2004), pp. 304–320. The author estimates that households whose spending is constrained by the amount of equity in their homes account for between 18 percent and 26 percent of consumer spending. By contrast, McCarthy and Steindel, in “Housing Activity, Home Values, and Consumer Spending,” argue that “the recent increase in housing values has been concentrated in high value homes in high income areas,” suggesting that only a small part of the gains has accrued to households that are liquidity constrained.

12. For further details on the estimation of MEW, see Alan Greenspan and James Kennedy, “Estimates of Home Mortgage Originations, Repayments, and Debt on One-to-Four-Family Residences,” Finance and Economics Discussion Series No. 2005-41 (Washington, D.C.: Federal Reserve Board, September 2005).

**Figure 3.**

## Mortgage Equity Withdrawal and Personal Saving

(Percentage of personal disposable income)



Sources: Congressional Budget Office and the Federal Reserve Board.

Note: Data are four-quarter moving averages. Shaded areas indicate periods of recession.

- a. Estimates from before 1990 contain assumptions because some source data were not available. Those estimates are likely to have considerable measurement error and should therefore be interpreted and used cautiously.

purchases and sales of homes, focusing instead only on the net borrowing of homeowners who stay in their homes. Since the mid-1990s, there has been a strong negative correlation between MEW and the personal saving rate (see Figure 3).<sup>13</sup>

Some analysts find that mortgage equity withdrawal has very large impacts on consumer spending. Estimates in a Goldman Sachs report imply that consumers spend between 29 and 39 cents of each dollar of “active” MEW within a year.<sup>14</sup> Researchers at the International Monetary Fund find that consumers spend 18 cents of each dollar of MEW in the year they withdraw the equity.<sup>15</sup> Although both studies find large impacts from MEW, both also find small wealth effects: between 2 and 3.4 cents of

13. The figure shows gross MEW rather than the more commonly used net MEW, because the latter series is not available before 1991. However, the two measures move similarly over time.

14. See Jan Hatzius, “Housing Holds the Key to Fed Policy,” Global Economics Paper No. 137 (New York: Goldman Sachs, February 2006).

15. See Vladimir Klyuev and Paul Mills, “Is Housing Wealth an ‘ATM’? The Relationship Between Household Wealth, Home Equity Withdrawal, and Saving Rates,” Working Paper No. 06/162 (Washington, D.C.: International Monetary Fund, June 2006).

additional spending per dollar of additional wealth. Respondents to a survey conducted by the Federal Reserve in 2001 and early 2002 allocated 16 percent of cash-outs from refinancings, one component of MEW, to consumer expenditures.<sup>16</sup> The portion of cash-outs not devoted to consumer purchases was used for home improvements (35 percent), repayment of other debts (26 percent), purchases of stocks and other investments (21 percent), and taxes (2 percent).

Other researchers find that mortgage equity withdrawal has little or no impact on consumer spending after accounting for the wealth effect. One group of researchers reports that consumers spend 5 cents of each dollar of MEW.<sup>17</sup> A recent paper updating those results finds no impact of MEW on spending after accounting for the wealth effect.<sup>18</sup>

There are good reasons to be skeptical about large estimates of transitory impacts of higher home prices on consumer spending. The most common objection is that causality may run from consumer spending to MEW rather than the other way around. For example, a home-equity loan or a refinancing may be the most convenient way of financing a large consumer purchase that a household intended to make whether the price of their home went up or not. MEW may even reflect the traditional wealth effect itself, rather than any transitory impact, if households tap their housing wealth by withdrawing home equity. Alternatively, MEW or even changes in home prices themselves may reflect some third factor that also affects consumer spending, such as higher consumer confidence, increased expectations of future growth of income, or greater ability to borrow against a home.<sup>19</sup> The most careful recent analysis cites several statistical flaws with the largest estimate of MEW effects.<sup>20</sup> On balance, the

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16. See Glenn Canner, Karen Dynan, and Wayne Passmore, "Mortgage Refinancing in 2001 and Early 2002," *Federal Reserve Bulletin*, vol. 88 (December 2002), pp. 469–490.

17. See Eric Belsky and Joel Prakken, "Housing Wealth Effects: Housing's Impact on Wealth Accumulation, Wealth Distribution and Consumer Spending" (prepared for the National Association of Realtors' National Center for Real Estate Research, 2004).

18. See Macroeconomic Advisers, "Fear Not MEW," *Macro Focus*, vol. 1, no. 2 (2006).

19. See Christina D. Romer, "The Great Crash and the Onset of the Great Depression," *Quarterly Journal of Economics*, vol. 105, no. 3 (1990), pp. 597–624. The author argues that consumer confidence influences both consumption and wealth. See also Randall Morck, Andrei Shleifer, and Robert W. Vishny, "The Stock Market and Investment: Is the Market a Sideshow?," *Brookings Papers on Economic Activity*, no. 2 (1990), pp. 157–202. The authors say that the value of wealth reflects expectations about future output growth. In "Housing Activity, Home Values, and Consumer Spending," McCarthy and Steindel argue that greater ability to borrow against one's home can fuel both MEW and consumer spending.

20. See Macroeconomic Advisers, "Fear Not MEW." The authors argue that the error correction equation estimated by Goldman Sachs should not contain contemporaneous effects from MEW and that income from wealth must be treated differently from income derived from labor when wealth is also included in the equation for consumer spending.

**Table 2.**


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## Possible Impacts of Housing Price Declines on Personal Saving, Consumer Spending, and the Growth of Gross Domestic Product

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Scenario	Effect on Personal Saving Rate (Percentage points)		Direct Effect on Consumer Spending (Billions of dollars)		Direct Effect on Growth of GDP (Percentage points)	
	Low MPC <sup>a</sup>	High MPC <sup>b</sup>	Low MPC	High MPC	Low MPC	High MPC
2 Percent Price Decline	0.2	0.7	-21	-72	-0.1	-0.5
10 Percent Price Decline	0.5	1.9	-55	-191	-0.4	-1.4
10 Percent Price Decline, Overly Optimistic Expectations, and Small MEW Effect <sup>c</sup>	1.0	3.1	-103	-316	-0.7	-2.2

Source: Congressional Budget Office.

Notes: The table states the estimated impact in the fourth quarter of 2007 of changes in housing prices between the fourth quarter of 2006 and the fourth quarter of 2007.

MPC = marginal propensity to consume—the additional spending triggered by an additional dollar of wealth; MEW = mortgage equity withdrawal.

- Assumes 2 cents of additional annual consumer spending per additional dollar of housing wealth.
  - Assumes 7 cents of additional annual consumer spending per additional dollar of wealth.
  - Assumes that, on average, households in the fourth quarter of 2006 expected home prices to rise 10 percent over the next year and that lower MEW subtracts \$18 billion from consumer spending.
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research points to a limited role for MEW in explaining consumer spending, but a large effect cannot be ruled out.

### Implications for the Future Path of Consumer Spending

Home prices will most likely have a modestly negative effect on the economy this year. Slower growth of home prices will most likely cause slower growth of consumer spending than would otherwise occur but not a major economic slowdown. Home prices would have a sizable adverse impact only under certain conditions.

The presence of a wealth effect implies that the personal saving rate depends on the ratio of wealth to income.<sup>21</sup> Given CBO's forecasts of real residential construction and income, home prices would have to rise by almost 3 percent between the fourth

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21. Suppose that consumer spending equals a fraction of income ( $b$ ) plus a fraction of wealth ( $c$ ). Then the ratio of consumer spending to income equals  $b$  plus  $c$  times the ratio of wealth to income. A lower ratio of wealth to income reduces the ratio of spending to income, raising the saving rate.

quarter of 2006 and the fourth quarter of 2007 to keep the ratio of housing wealth to disposable income constant. If prices instead fell 2 percent during that interval, housing wealth at the end of 2007 would be about \$1.0 trillion below the level at which it would exert no influence on the saving rate. Depending on the magnitude of the wealth effect, that shortfall in the growth of housing wealth would raise the saving rate by 0.2 to 0.7 percentage points and reduce the growth of consumer spending by \$21 billion to \$72 billion (see Table 2). Consumer spending would continue to grow but not as rapidly as it would have if housing wealth had kept pace with income.

That slower growth of consumer spending would, in turn, directly subtract 0.1 to 0.5 percentage points from the growth rate of real gross domestic product (GDP). The full impact on GDP growth would most likely be larger than that because it would also include the multiplier effects from reduced spending—the indirect impacts of lower spending on the rest of the economy, such as fewer purchases of new equipment by businesses that make consumer goods. Losses would also be larger if lower home prices had adverse effects on the volume of home improvements or on the financial situation of heavily indebted homeowners. Even so, the total effect on output would fall well short of that needed to trigger a recession on its own.

There are three scenarios in which the path of home prices could have a significantly more negative effect on consumer spending. First, nationwide home prices could fall by much more than 2 percent. Second, as already noted, some homeowners could be basing current spending decisions on excessively optimistic expectations of future home price appreciation.<sup>22</sup> Third, a sharp slowdown in mortgage equity withdrawal could have a significant adverse effect on consumption.

Suppose, for example, that nationwide home prices fell 10 percent between the fourth quarter of 2006 and the fourth quarter of 2007. Housing wealth would then be about \$2.7 trillion lower than the amount needed to keep pace with the growth in disposable income. Depending on the size of the wealth effect, that would raise the saving rate by 0.5 to 1.9 percentage points and would reduce the growth of consumer spending by \$55 billion to \$191 billion. That would directly subtract 0.4 to 1.4 percentage points from the growth rate of GDP. Indirect losses would boost the total impact. The impact on saving, consumer spending, and GDP would be similar if, instead of a 10 percent drop in prices, prices fell only 2 percent, as in the previous scenario, but households on average were currently basing their spending on the assumption that home prices would rise between 10 percent and 11 percent over the next year. (Note that, in such a scenario, some households might foresee only a modest increase, or even a decrease, in prices, but then other households would have to be expecting an increase of much larger than 10 percent.)

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22. If prices fall 2 percent over the next year, the expectations of many households will prove to have been too optimistic. The phrase “excessively optimistic” refers to expectations that would prove too optimistic even if housing wealth kept pace with income.

If the effect of mortgage equity withdrawal on consumer spending is large, a moderate fall in home prices could slow consumer spending noticeably. Households withdrew equity from their homes at a rate of nearly \$900 billion per year during the second half of 2005 and early 2006. Under an assumption that each dollar of MEW resulted in an extra 25 cents of consumer spending (roughly in the middle of the higher estimates of that effect), those withdrawals added about \$225 billion to consumer spending. If a 3 percent decline in home prices pushed net MEW close to zero after a year, the \$225 billion of spending financed by it would be eliminated. That amount is equivalent to about 1.6 percent of GDP, or slightly more than half of the growth in real GDP that CBO forecasts for 2007. If, instead, one assumes that MEW raised consumer spending by a much smaller 2 cents on the dollar, the impact on spending would be less than \$20 billion.<sup>23</sup>

A worst-case scenario combining sharply declining home prices, overly optimistic expectations, and a moderate effect from MEW is possible but unlikely. (Because studies finding a large effect from MEW also find a small wealth effect, none of the studies supports adding a large effect from MEW on top of a large wealth effect.) If homeowners currently expected home prices to rise by 10 percent during 2007 but they instead fell by 10 percent, housing wealth would end 2007 more than \$4 trillion lower than expected. That would raise the saving rate by between 1.0 and 3.1 percentage points, reducing growth of consumer spending by between \$85 billion and \$298 billion from what it otherwise would be. After adding in a moderate estimate for the impact of MEW, the total direct impact on consumer spending would be between \$103 billion and \$316 billion, or between 0.7 percent and 2.2 percent of GDP. The upper end of that range, combined with lower home-building activity and multiplier effects on investment, income, and spending, would most likely be enough to tip the economy into recession.

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23. That estimate is between the estimates of 0 and 5 cents in the studies finding a small effect of MEW.