



MILKEN INSTITUTE

September 2011



CONSUMER SENTIMENT AND SPENDING

WATCH WHAT I DO, NOT WHAT I SAY

*Ross DeVol
Chief Research Officer
Milken Institute*



MILKEN INSTITUTE

CONSUMER SENTIMENT AND SPENDING

WATCH WHAT I DO, NOT WHAT I SAY

SEPTEMBER 2011

Ross DeVol
Chief Research Officer
Milken Institute

Consumer Sentiment and Spending: Watch What I Do, Not What I Say

September 2011

Author Ross DeVol is the chief research officer at the Milken Institute.

Consumer spending will be a critical factor in determining whether the U.S. experiences a double-dip recession. Many believe that the decline in consumer confidence reported in August portends, with absolute certainty, a renewed contraction of economic activity.

However, our research calls into question the efficacy of consumer confidence as an accurate predictor of purchasing decisions. Disdain over political gridlock in Washington appears to be behind the recent decrease in confidence, but the public's disgust does not appear to be causing consumers to slam their wallets shut.

- Consumer sentiment as measured by the University of Michigan declined 12.6 percent in August, while The Conference Board's index of consumer confidence fell by 24.8 percent.
- Based on our econometric analysis, most of the drop in consumer confidence was attributable to the job approval rating of Congress, which plunged to 13 percent.
- Consumer confidence still helps explain consumer spending decisions, but the relationship between sentiment and action has weakened.
- July's 0.5 percent jump in real consumption expenditures and August's preliminary number for same-store retail sales indicate that consumption spending will rise at an annual rate of 2.5 to 3.0 percent in the third quarter's GDP report.

The August consumer confidence reading

Consumer spending will be a crucial factor in determining whether the U.S. economy undergoes a so-called double-dip recession—after all, consumption represents almost 70 percent of overall economic activity in the United States. Our August publication [“Deficits, Debt and Downgrade of Sovereign Credit: Implications for Financial Markets and the U.S. and World Economies”](#) made the point that the cumulative weight of recent negative news would take a toll on consumer and business confidence. Unfortunately, it appears that is indeed the case.

The two main surveys of consumer confidence, The Conference Board’s Consumer Confidence Index and the Thomson Reuters/University of Michigan’s Consumer Sentiment Index, both exhibited large declines in August. Consumer confidence, as reported by the Conference Board, fell to 44.5 in August, down a sharp 24.8 percent from July’s reading of 59.2. This was the lowest level since the 40.8 recorded in April 2009, during the depths of the Great Recession. The University of Michigan’s Consumer Sentiment Index was reported at 55.7 in August, 8.0 points (12.6 percent) below July’s level. (The good news is that we avoided the 54.9 preliminary estimate for August, which would have marked the lowest level in three decades.)

A sample of media headlines reporting on these indices displays the reaction to the August figures: “Consumer Confidence in U.S. Plunges to Lowest Since 2009 on Jobs Outlook”; “Consumers Giving Up Hope About U.S. Economy”; “Debt Ceiling Legacy: Scary Erosion in Confidence”; and my personal favorite, “Retail Sales Rise, but Pessimism Drives Consumer Sentiment to a 30-Year Low.”

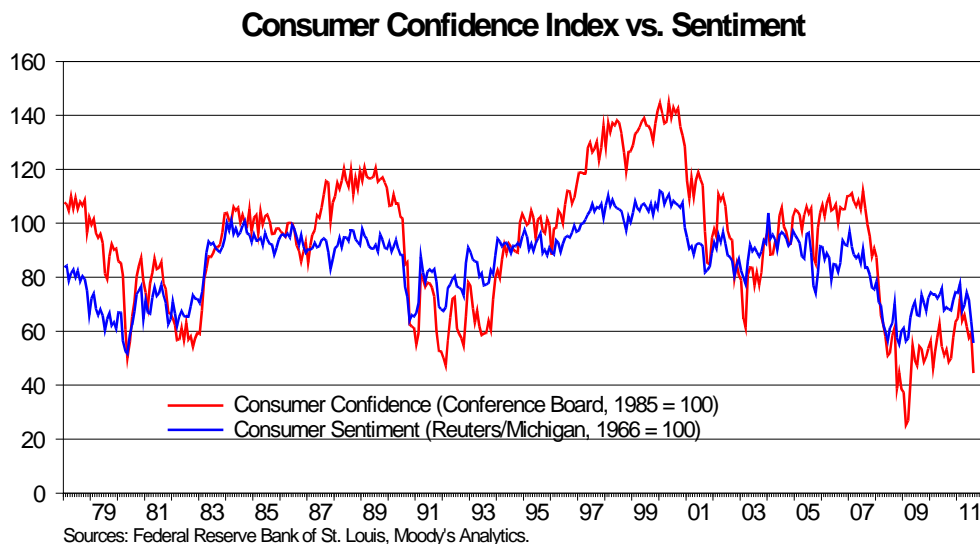
Those last two headlines are particularly interesting. The former indicates a possible connection between the public’s sour mood and the debt ceiling debate. Lynn Franco, director of the Conference Board Consumer Research Center, seemed to acknowledge as much in the center’s August press release, stating that “a contributing factor may have been the debt ceiling discussions since the decline was well underway before the S&P downgrade.” The latter headline points to a phenomenon that’s worth exploring: an apparent decoupling between what consumers say to survey inquiries vs. their actual purchasing decisions.

Did consumers conclude that economic conditions had worsened significantly? Or did they merely lose confidence in the ability of Washington politicians to put aside partisan differences in order to address important economic policy issues? And if evidence supports the latter conclusion, does this mean that eroding consumer confidence will have a muted impact on actual spending behavior? Our statistical research indicates the answer to both questions is a resounding “yes.”

About the Consumer Confidence and Consumer Sentiment Indices

The Conference Board developed the Consumer Confidence Index (CCI) in 1967 as a gauge of the health of the U.S. economy from the consumer's perspective. There are two major components: consumers' *current perception* of business and employment conditions (given a 40 percent weight) and *expectations* for business, employment, and income conditions looking six months ahead (given a 60 percent weight). The base period of the index is set to 1985 (1985 = 100), since that period saw no notable troughs or peaks in the business or consumer cycles. Each month a survey is sent to households, targeting 3,000 completed questionnaires. The CCI was constructed to be one of the earliest monthly economic indicators available before the end of the current month. It was designed as a leading indicator, presaging broader economic movements.

The Thomson Reuters/University of Michigan Consumer Sentiment Index (CSI) was established at the university by the pioneering work of distinguished psychologist George Katona in 1946. Katona focused his efforts on blending consumer psychology with macroeconomic theory and modeling to more accurately predict the timing of consumer purchases—and thus real activity in the broader economy. The CSI is based on phone interviews with at least 500 households a month; its base period is 1966 (1966 = 100). Three broad areas are covered: personal finances, business conditions and buying conditions (both contemporaneous), and consumers' expectations for the future. In all, 50 core questions are included.



Both the CCI and CSI attempt to capture the inter-temporal dimensions of consumer purchasing decisions (that is, how they shift across time). The underlying economic analysis was that the discounted, net present value calculation of consumers needed to include cognitive or emotional factors, along with consideration of social elements, to understand human actions. As the rational expectations school surmised, much of economic decision-making is forward-

looking. Households base their decisions on past experiences as well as new information that causes them to adjust expectations for the future. Should I buy a car today, or wait six months when interest rates will be lower? Or will inflation erode my buying power, making it smarter to purchase now?

The *New York Times* obituary of George Katona provided a great summary of his life's work and its impact on economics. "[He maintained that] there was a sharp difference between income, or the ability to buy, and the willingness to buy, or consumer psychology. 'The better off people feel, the more they spend,' he once said, 'and the worse off they feel, the less they spend.'" Katona's work influenced advances in a number of areas that have become mainstream today, such as behavioral and experimental economics, and to a lesser extent, evolutionary psychology and neural sciences.

Factors explaining consumer confidence

A wide range of economic and financial factors are believed to influence how consumers form expectations that affect purchasing decisions. The 9.7 percent decline in the S&P 500 recorded in August can explain some of the anxiety, as consumers experienced a slip in their net worth. However, the stock market and other traditional factors can't explain the extent of the plunge in consumer confidence recorded that month. Consumers seem to have been rattled by the partisan rancor in Washington over the discussions to raise the debt ceiling and reduce the budget deficit. Policy uncertainty doesn't provide an environment conducive to developing an informed assessment about the future. The question is, how can we find a measure to test this hypothesis?

One way to capture the effect is through public opinion surveys on congressional job approval. Many of these surveys are done on a monthly basis, and RealClearPolitics tracks many of them. However, the Gallup polling organization has been asking the public whether they approve or disapprove of Congress since 1974. In August, just 13 percent of respondents approved of the job Congress was doing (and one could be forgiven for questioning the sanity of that 13 percent). This matches the lowest reading ever recorded (in December 2010). Approval sank even lower than where it stood in the midst of the financial meltdown in late 2008.

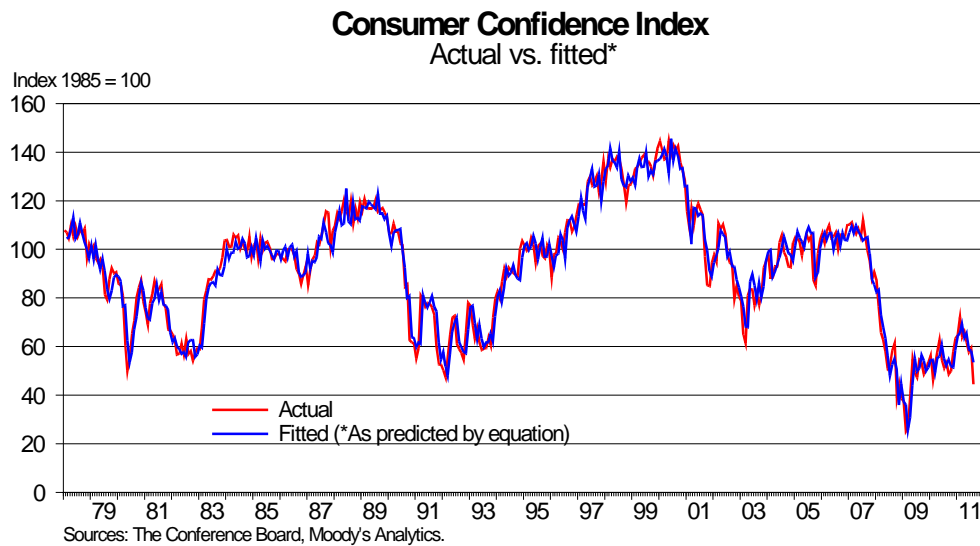


Statistical Results

Utilizing monthly CCI and CSI data since 1978, we have estimated econometric equations explaining variations in their movement based on a series of economic and financial indicators, along with Gallup's monthly survey of congressional job approval rating (see the appendixes for a more detailed review of the equations). These control factors include the S&P 500 stock index, unemployment insurance claims, the unemployment rate, changes in real housing prices, real gasoline prices, and lagged values of consumer confidence to adjust for adaptive expectations. Interest rates and inflation were tested as well; we found that they provided no incremental contribution to explaining variations in consumer confidence or sentiment beyond that provided by the other economic and financial indicators. However in both the CCI and CSI equations, the approval rating accorded to Congress was significant and meaningful.

In the equation explaining monthly changes in the **CCI**, the **S&P 500** stock index was a significant positive explanatory variable. Household expectations about economic conditions have become increasingly influenced by equity markets, as a greater proportion of households hold stocks directly or through their retirement plans. The level of **new unemployment insurance claims** on a per capita basis had an inverse relationship with the CCI, as expected. This variable provides an incoming stream of high-frequency data on labor markets and contributes to the explanatory power of the equation above what is attributable to the **unemployment rate**, which was highly significant as well.

The inclusion of the **real median existing home price** explains a great deal of the depth and duration of the decline in consumer confidence during the Great Recession and its aftermath. This variable has become more important since 2000, as the value of housing appreciated at a rapid rate and then collapsed after 2007 as the housing market imploded. The 30 percent national decline in housing prices since the peak explains much of the cratering of consumer confidence. **Congress' job approval rating** also demonstrates the expected positive sign.



The same analysis of the **CSI** reveals a somewhat altered relationship with likely explanatory variables. The adaptive response (alternations in expectations relative to the preceding month) plays a more important role in explaining movements. The wealth effect, as represented again by the **S&P 500** stock index, is strong and significant. It appears to have dwarfed the impact of interest rates in explaining consumers' expectations of economic conditions. **Congressional job approval** has virtually the same coefficient in the CSI equation as it does in the CCI, indicating a robust relationship.

Movements in the CSI are more closely associated with changes in **real gasoline prices** than are movements in the CCI. Consumers see inflation at the gas pump on at least a weekly basis, and this seems to influence respondents more heavily in the University of Michigan's survey than in the Conference Board's. In many respects, this can be seen as an irrational response; changes in health-care prices, for example, can have an even greater impact on household budgets. However, gasoline prices go down on occasion, but health-care prices only go up (whether at a faster or slower rate). This illustrates that psychological influences can disproportionately affect consumer purchasing patterns.

In both of these equations, over 91 percent of the monthly variation in consumer confidence and sentiment is explained by movements in the independent variables.

Consumer Confidence Impact on Consumption

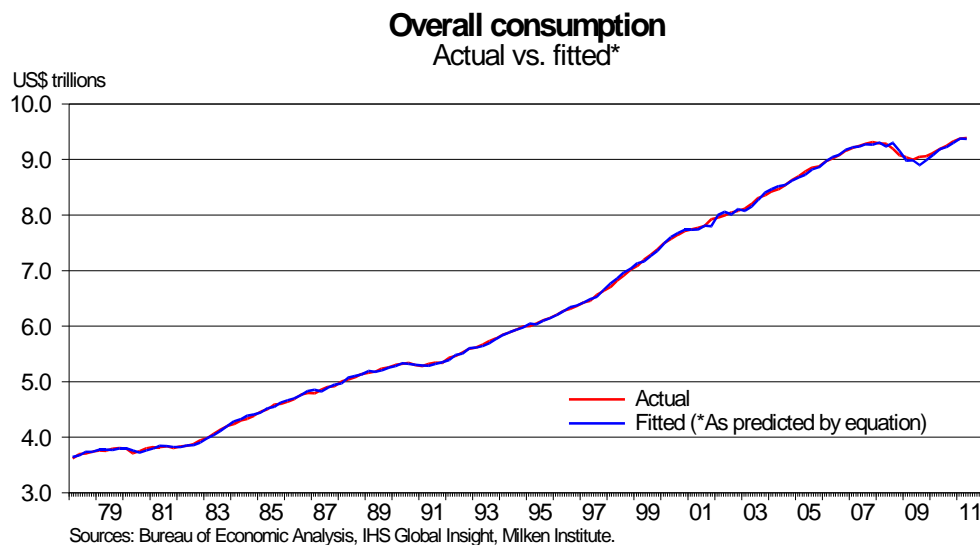
Personal consumption expenditures are affected by a number of economic, financial, and expectation variables. Real consumer spending is largely driven by changes in real after-tax income (which is contingent on growth in employment, hours worked, and real wages), lagged values of real household net worth, relative prices of the consumption category, and consumer expectations about the future values of these variables. Purchases of durable goods, such as

autos, furniture, and appliances, are especially sensitive to consumer confidence, impacting decisions on whether it's a "good time to buy."

Equations explaining quarterly changes in real consumption expenditures since 1978 have been estimated for total, durable goods, nondurable goods, and services. One set of equations uses the CSI and the other is estimated based on the CCI. After controlling for direct economic and financial determinants of consumption, this specification allows an investigation as to the elasticity (sensitivity) of consumption by category to consumer confidence.

Statistical Results

The overall explanatory power of the consumption equations is exceptionally strong and robust. **Real disposable income** is highly significant in all the equations. The elasticity of consumption with respect to income is highest of all explanatory variables. Durable goods are most sensitive to changes in income. **Real household wealth** is significant in all consumption equations, and, consistent with economic theory, is most closely associated with durable goods purchases. The same applies for **sales of existing and new homes**, which are significant in all equations, but are most closely tied to durable goods consumption. When a home is sold, it triggers a number of other purchases, such as furniture, appliances, window treatments, landscaping, artwork, etc. The **relative price** term is significant in the equation for durable goods since their purchase can be postponed in most cases.



The **CSI** and **CCI** are significant in the total and durable goods consumption equations over the entire 1978-2011 period. The CSI has a higher coefficient and is statistically more significant than the CCI in all of the consumption equations. This is partially attributable to the CSI being less volatile than the CCI over the business cycle. Once again, consumption of durables was most sensitive to movements in consumer confidence.

Additionally, we divided the sample in half (delineating one period from 1978 to 1989 and the other from 1990 through 2011 Q2) and re-estimated the equations. We found that the equations estimated on data from 1990 through 2011 Q2 had a much lower elasticity than for the earlier sub-period and were insignificant. *The elasticity of consumption with respect to consumer confidence during the second half of the period was one-fifth of its pre-1990 value* (see the table below).

This supports the contention that changes in consumer confidence aren't as closely tied to consumption spending as they were in the past, and that the recent drop in confidence shouldn't harm consumption patterns appreciably.

Elasticity of Consumption with respect to consumer confidence

	1978-2011q2	1978-1989	1990-2011q2
<i>Consumer Sentiment University of Michigan</i>			
Total	0.022	0.047	0.008
Durables	0.151	0.274	0.059
<i>Consumer Confidence Conference Board</i>			
Total	0.009	0.040	0.004
Durables	0.070	0.310	0.034

Source: Milken Institute.

Implication for the consumption spending and the economic outlook

The statistical evidence demonstrates that measures of consumer confidence do have a separate and meaningful contribution over several business cycles as a predictor of contemporaneous and future consumer spending beyond that provided by standard economic and financial variables. These measures of consumer confidence warrant close monitoring in order to gauge how consumers are reacting to changes in economic, financial, and political conditions.

However, surveys of consumer confidence are not infallible predictors of consumer spending, especially when they have been heavily influenced by political conditions in Washington.

There is room for cautious optimism on the spending intentions of consumers. Despite lingering damage from the debt-ceiling debates, sovereign-debt concerns in Europe, and slow job creation, U.S. households with employed members have cut their debt-servicing burdens, and interest rates are at record lows. During the debt ceiling and deficit debates in July, real consumer spending actually rose 0.5 percent from June, for an annualized rate of increase of 6.5 percent. Early readings of August retail sales (which account for approximately 40 percent

of overall consumption spending) show a year-over-year increase of 4.4 percent for same-store sales.

A conservative estimate of August's final consumption number based upon early retail sales figures suggests a 0.1 percent increase. *Even if real consumption spending were flat in September, it implies a 2.5 to 3.0 percent increase in consumption spending in the third quarter GDP report.*

The lesson here? Analysts must watch what consumers *do*, not what they *say*, in forming projections for consumer spending and GDP in the current environment.

Appendix: Table 1

Consumer Confidence
Sample period: monthly, 1978:1 to 2011:8

Explanatory variable		Dependent variable	
		log (Consumer Confidence)	log (Consumer Sentiment)
pch (sp500)	coefficient	0.009***	0.005***
	t-value	8.5	7.5
	p-value	0.000	0.000
log (congapprv)	coefficient	0.026*	0.023**
	t-value	1.8	2.4
	p-value	0.076	0.015
log((nuniic/npr) *ructt)	coefficient	0.029***	
	t-value	2.6	
	p-value	0.009	
pchya (puvholdmed/pciu)	coefficient	0.002***	
	t-value	2.6	
	p-value	0.009	
log (pmgnulrg/pciu)	coefficient		-0.034***
	t-value		3.1
	p-value		0.002
log (cci _{t-1})	coefficient	0.906***	
	t-value	43.7	
	p-value	0.000	
log (csi _{t-1})	coefficient		0.894***
	t-value		43.4
	p-value		0.000
	R ²	0.94	0.92
	R ² adjusted	0.939	0.919
	F	1235.6***	1139.7***
	Observations	402	402
	D.W. (1)	1.85	2.08

Source: Milken Institute.

Variable description:

where **SP500** equals S&P index of common stocks, Standard & Poors.
where **congapprv** equals congressional job approval rating, Gallup poll organization.
where **nuniic** equals initial claims of unemployment insurance, U.S. Dept. of Labor.
where **npr** equals U.S. population, U.S. Census Bureau.
where **ructt** equals civilian unemployment rate, Bureau of Labor Statistics (BLS).
where **puvholdmed** equals median sales prices of existing single-family homes, National Association of Realtors.
where **pciu** equals consumer price index (all urban consumers), BLS.
where **pmgnulrg** equals retail price of motor gasoline, U.S. city average, U.S. Dept. of Energy, Energy Info. Admin.
where **cci** equals consumer confidence index, The Conference Board.
where **csi** equals consumer sentiment index, University of Michigan, Thomson Reuters.

Other functions/notes:

*Significant at 10% level; **Significant at 5% level; *** Significant at 1% level.

Log returns the natural logarithm of (X), using a base of 2.71.

pch denotes percentage change.

_{t-1} denotes lag of one period.

Appendix: Table 2

Real consumption expenditures (Consumer Confidence)
Sample period: quarterly, 1978:1 to 2011:2

Explanatory variable		Dependent variable			
		log (Total)	log (Durable goods)	log (Non-durable)	log (Services)
(movavg(4,log(ypdadjr)))	coefficient	0.377***	1.067***	0.287***	0.299***
	t-value	4.3	7.6	2.9	4.8
	p-value	0.000	0.000	0.005	0.000
(movavg(4,log(hhnetw _{t-1})/jpcadj _{t-1})))	coefficient	0.101***	0.027	0.096***	0.112***
	t-value	3.4	0.3	2.8	5.3
	p-value	0.010	0.746	0.006	0.000
(movavg(4,log(hu1esold+hu1nsold)))	coefficient	0.069***	0.231***	0.055***	0.036***
	t-value	4.9	6.4	3.5	3.6
	p-value	0.000	0.000	0.001	0.001
log (jpcd/jpcadj)	coefficient		-0.661		
	t-value		7.2		
	p-value		0.000		
log (cci)	coefficient	0.009***	0.070***	0.005	0.004
	t-value	2.2	3.8	1.12	1.6
	p-value	0.025	0.000	0.249	0.107
ar=1	coefficient	0.875***	0.616***	0.989***	0.982***
	t-value	28.4	9.1	200.5	316.7
	p-value	0.000	0.000	0.000	0.000
	R ²	0.999	0.998	0.999	0.999
	R ² adjusted	0.998	0.997	0.998	0.998
	F	101546***	11289.7***	409005***	153132***
	Observations	134	134	134	134
	D.W. (1)	2.13	1.67	2.30	1.71

Source: Milken Institute.

Variable description:

where **ypdadjr** equals real disposable income excl. "free" financial services and gov. medical payments, Bureau of Economic Analysis (BEA), IHS Global Insight.

where **hhnetw** equals household net worth, Federal Reserve Bank.

where **jpcadj** equals chained price index (consumer outlays adjusted for those provided free or mostly free), BEA, IHS Global Insight.

where **hu1esold** equals sales of existing single-family homes, National Association of Realtors (NAR).

where **hu1nsold** equals sales of new single-family homes, NAR.

where **jpcd** equals chained price index, consumer durables, BEA.

where **cci** equals consumer confidence index, The Conference Board.

Other functions/notes:

*Significant at 10% level; **Significant at 5% level; *** Significant at 1% level.

Log returns the natural logarithm of (X), using a base of 2.71.

movavg (n,x) denotes moving average on variable (x) over (n) periods.

_{t-1} denotes lag of one period.

ar (n) term denotes autoregressive variable of n period lags.

Appendix: Table 3

Real consumption expenditures (Consumer Sentiment)
Sample period: quarterly, 1978:1 to 2011:2

Explanatory variable		Dependent variable			
		log (Total)	log (Durable goods)	log (Non-durable goods)	log (Services)
(movavg(4,log(ypdadj _t)))	coefficient	0.834***	0.871***	0.286***	0.317***
	t-value	18.7	6.1	2.9	5.0
	p-value	0.000	0.000	0.005	0.000
(movavg(4,log(hhnetw _{t-1})/jpcadj _{t-1})))	coefficient	0.142***	0.018	0.104***	0.117***
	t-value	4.7	1.4	3	5.4
	p-value	0.000	0.173	0.003	0.000
(movavg(4,log(hu1esold+hu1nsold)))	coefficient	0.030***	0.250***	0.056***	0.037***
	t-value	2.6	7.8	3.5	3.7
	p-value	0.010	0.000	0.001	0.000
log (jpcd/jpcadj)	coefficient		(-) 0.729***		
	t-value		7.9		
	p-value		0.000		
log (csi)	coefficient	0.022***	0.151***	0.008	0.007
	t-value	2.5	4.7	1.0	1.5
	p-value	0.013	0.000	0.301	0.170
ar=1	coefficient	0.903***	0.614***	0.989***	0.875***
	t-value	21.3	8.6	197.9	28.4
	p-value	0.000	0.000	0.000	0.000
	R ²	0.999	0.998	0.999	0.999
	R ² adjusted	0.998	0.997	0.998	0.998
	F	110502***	15558.9***	415303***	153306***
	Observations	134	134	134	134
	D.W. (1)	1.77	2.26	2.26	1.72

Source: Milken Institute.

Variable description:

where **ypdadj_t** equals real disposable income excl. "free" financial services and gov. medical payments, Bureau of Economic Analysis (BEA), IHS Global Insight.

where **hhnetw_{t-1}** equals household net worth, Federal Reserve Bank.

where **jpcadj_{t-1}** equals chained price index (consumer outlays adjusted for those provided free or mostly free), BEA, IHS Global Insight.

where **hu1esold** equals sales of existing single-family homes, National Association of Realtors (NAR).

where **hu1nsold** equals sales of new single-family homes, NAR.

where **jpcd** equals chained price index, consumer durables, BEA.

where **csi** equals consumer sentiment index, University of Michigan, Thomson Reuters.

Other functions/notes:

*Significant at 10% level; **Significant at 5% level; *** Significant at 1% level.

Log returns the natural logarithm of (X), using a base of 2.71.

movavg (n,x) denotes moving average on variable (x) over (n) periods.

_{t-1} denotes lag of one period.

ar (n) term denotes autoregressive variable of n period lags.



MILKEN INSTITUTE

1250 Fourth Street
Santa Monica, CA 90401
Phone: (310) 570-4600

Washington office:
1101 New York Avenue NW, Suite 620
Washington, DC 20005
Phone: (202) 336-8930

E-mail: info@milkeninstitute.org • www.milkeninstitute.org