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# Consumer Sentiment and Consumer Spending

In the U.S. economy, two-thirds of production and expenditures are devoted to consumer spending, or personal consumption expenditures (PCE), which include most of retail sales, as well as households' expenditures on such items as rent, utilities, and much of medical care. Because this is such a large sector of the economy, the forecast accuracy of PCE affects the forecast accuracy of some of the key variables that policymakers focus on, such as unemployment, incomes, inflation, and interest rates. A large body of research has documented that measures of income, wealth, and interest rates, which indicate consumers' *ability* to spend, do consistently help forecast future consumer spending. The research results are less consistent, however, for forecast models that also include measures of consumers' *willingness* to spend, such as the University of Michigan's Index of Consumer Sentiment (ICS). Nonetheless, at some times, measures of consumer attitudes do seem to provide additional information about households' future spending; one such example is the period near the 1990–1991 recession.

This *Economic Letter* describes how the ICS is constructed and reviews some past research on whether measures of consumer attitudes improve forecasts of consumer spending. It also reports on some new research, which found that using the answers to the individual component questions of the ICS, rather than the ICS itself, further improved forecasts of PCE and its components. Finally, it shows how much and when measures of consumer attitudes might have helped forecasts in recent years.

**Component questions of the ICS**

From the large number of questions that it asks households, the University of Michigan's Survey Research Center constructs the ICS by aggregating the answers to five questions. (The possible answers to the five questions that are used to construct the ICS are shown in brackets below.)

1. "We are interested in how people are getting along financially these days. Would you say that you (and your family living there) are better off or worse off financially than you were a year ago?" [better off, same, worse off, or don't know]

2. "Now looking ahead—do you think that a year from now you (and your family living there) will be better off financially, or worse off, or just about the same as now?" [better off, same, worse off, or don't know]

3. "Now turning to business conditions in the country as a whole—do you think that during the next 12 months we'll have good times financially, or bad times, or what?" [good times, uncertain, bad times, don't know]

4. "Looking ahead, which would you say is more likely—that in the country as a whole we'll have continuous good times during the next 5 years or so, or that we will have periods of widespread unemployment or depression, or what?" [good times, uncertain, bad times, don't know]

5. "About the big things people buy for their homes—such as furniture, a refrigerator, stove, television, and things like that. Generally speaking, do you think now is a good or a bad time for people to buy major household items?" [good time, uncertain, bad time]

**Why consumer attitudes might improve forecasts**

Measures of consumer attitudes, such as the ICS, might improve consumption forecasts for several reasons. First, while most other macroeconomic data report what already happened, the ICS data report on consumers' views about their own and the economy's recent, *current*, and *expected* economic conditions. Thus, these data may be more informative about future consumer spending.

Second, consumer attitudes may incorporate households' estimates of the impacts of rare or even unique shocks, whose effects cannot be directly estimated from past experience or data. Such events might include the first oil embargo and oil price shock in the mid-1970s, the Gulf wars, the effects of Hurricane Katrina, or even

a dramatic surge in oil prices to well over $100 per barrel. Such shocks could include events or policies that importantly change how the economy operates. For example, if a new Fed Chair were widely anticipated to follow a distinctly different monetary policy from his predecessor's, consumer attitudes then might well incorporate how households, businesses, and the entire economy might react differently to various economic and financial events. The changed responses of consumer spending would not typically be forecastable from macroeconomic data.

Third, households' answers might reflect changed expectations and uncertainties about future conditions that have not yet occurred. For example, significant changes in political candidates' election prospects might lead households to have both higher expectations of and higher uncertainty about future taxes. As a result, the numbers of households who answer that this is a good time to buy major household goods might well decline, followed by actual declines in such purchases. These repercussions on households' expectations and on their spending often would not be captured by the macroeconomic variables that are typically used to forecast consumer spending.

**Some results of previous research**

Research has long noted a strong, positive correlation between consumer attitudes and consumer spending. The empirical evidence, however, is less consistent about whether, once other macroeconomic variables are allowed for, consumer attitudes forecast consumer spending. Juster and Wachtel (1972a, b), for example, reported that "anticipatory variables" (including the ICS) were of considerable importance in forecasting expenditures on autos. Kelly (1990) reported that consumer attitudes directly affected consumer spending, imports, business inventories, and industrial production. In addition, Carroll, Fuhrer, and Wilcox (1994) reported that consumer attitudes further improved consumption forecasts, even after other macroeconomic variables were allowed for.

In other studies, however, consumer attitudes did not significantly improve consumption forecasts when macroeconomic variables (such as income, interest rates, assets, or liabilities) were taken into account. Hymans (1970) pointed out that in the majority of econometric models, consumer attitudes played little if any part. Mishkin (1978) found that, once the effects of financial assets and liabilities were considered, the effects of consumer attitudes were typically insignificant. Further, the large, multi-equation forecasting models of the Federal Reserve, of the OECD, and of some consultancies historically omitted consumer attitudes from their equations for forecasting consumer spending.

**Recent research**

Wilcox (2007) compared models for forecasting consumer spending without measures of consumer attitudes to models with them. The study evaluated the forecasting improvements attributable to the ICS and to each of its component questions. The study used national aggregate data for 1960–2006 for (annualized growth rates of seasonally adjusted, real, per capita) consumer spending, personal disposable income, and household wealth. Consumer spending was measured by PCE. The study also evaluated forecasts of the components of PCE: durables (including expenditures on vehicles and on nonvehicle durables), nondurable goods, and services. To explore further the forecasting contributions of consumer attitudes, out-of-sample forecasts were calculated for each year from 2000 through 2005.

The baseline models used in the study were fairly similar to those used by Carroll, Fuhrer, and Wilcox (1994), Bram and Ludvigson (1998), and others: the models forecast the annualized, one-quarter-ahead and four-quarter-ahead growth rates of consumption (and each of its components), based on four quarterly lags of the forecasted variable, of income, of the home-equity and non-home-equity components of household net worth, and the levels of interest and inflation rates. Interest and inflation rates were represented by the one-year nominal interest Treasury bill yield and the year-over-year percent change in the seasonally adjusted, quarterly average, consumer price index.

**Forecasting results**

—Earlier studies typically focused on the ICS, which aggregates the answers to the five questions above. In contrast, this study found that the individual component questions were much more informative about future consumption than the aggregate ICS. For instance, answers to Question 5 more reliably improved year-on-year forecasts of total consumption growth and each of its components than did either the ICS or any of the other four questions.

—Earlier studies focused on the usefulness of the ICS for forecasting consumption for the next calendar quarter. This study found that the

individual component questions (and the ICS) much more reliably improved forecasts for a longer, four-quarter horizon.

—Earlier studies found that consumer attitudes improved forecasts of expenditures on durables and, in particular, on the vehicles component of durables. The study found that the individual component questions of the ICS improved not only forecasts of expenditures on durables but also forecasts of expenditures on nondurables and on services.

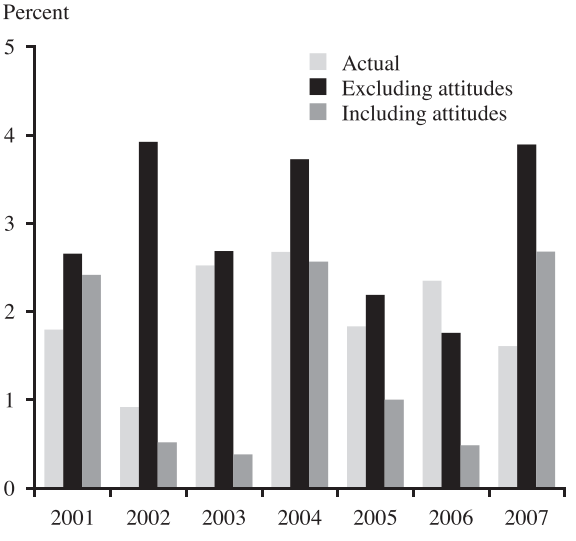
—Earlier studies focused on whether consumer attitudes improved forecasts after considering the effects of income, wealth, and interest rates. The study found that the individual questions tended to improve forecasts of PCE and of its components as much as, or more than, macroeconomic variables did.

—The study also found that including the ICS or its components improved forecasts for recent years.

Figure 1 shows the actual growth rate of (real, per capita) PCE for each year during 2001–2007 and two sets of forecasts that, for each year, could have been made from the end of the prior year. The middle bar for each year shows forecasts based on models that excluded any questions about consumer attitudes ("excluding attitudes"). The rightmost bar shows forecasts based on models that included all five component questions of the ICS ("including attitudes"). Forecasts excluding the questions averaged about 1 percentage point above, while forecasts including them averaged about ½ percentage point below, actual consumption growth. By that measure, forecasts including the questions were more accurate.

Increases or decreases in accuracy seem to align with periods of weakness or strength in the economy. Forecasts including the ICS questions were more accurate when consumption growth was falling (as in the 2001 recession) or low (as in the sluggish recovery year of 2002) and when the economy was slowing (as in 2007). Forecasts excluding the ICS questions were more accurate when the economy and consumer spending were booming (as in 2005 and 2006). Thus, the forecasting contributions of consumer attitudes seem stronger when the economy is weaker, although, admittedly, the reasons for these results are not yet fully understood. Given the importance and difficulty of forecasting when the economy is weaker, that strength may appear just when it is most valuable to analysts and policymakers.

**Figure 1**
**Actual consumption growth and forecasts excluding and including consumer attitudes**

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