

# CONSUMERS' EXPECTATIONS AND CONSUMPTION EXPENDITURE

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## **Abstract**

*Some studies have examined the impact of consumers' expectations on consumption expenditure. However, none of these studies concludes a clear positive relationship between these variables. It has been argued that consumers' expectations about the economy's future should have an impact on consumers' decisions about how much to consume and how much to save. While consumers' expectations seem to be a strong predictor for future consumption expenditure, there are potential statistical problems with the use of current available estimates of consumers' expectations. In this paper, we hypothesize that, due to these statistical problems, consumers' expectations measured by currently available estimates such as the index of consumer sentiment do not have explanatory power to predict future levels of consumption expenditure. We present empirical evidence that, while disposable income is a good predictor for consumption expenditure, the index of consumer sentiment is not a reliable predictor for future levels of consumption. Our empirical analysis is based on a multiple regression model in which the dependent variable is consumption expenditure and the independent variables include disposable income and consumers' sentiment. Data for consumption expenditure and disposable income are obtained from the Bureau of Economic Analysis: National Economic Accounts at [WWW.bea.doc.gov](http://WWW.bea.doc.gov), and the data for consumers' sentiment index were obtained from [WWW.econstats.com](http://WWW.econstats.com). We use monthly time series data for all three variables over the 1990-2003 period.*

## **Introduction**

In light of declines in aggregate demand over the 2001-2004 period in the U.S. economy, and given the fact that consumption expenditure counts for more than 60 percent of aggregate demand, it seems imperative to take a new look at factors that have influence on consumption expenditure. Correct identification of such factors can help predict future slowdowns in consumption and aggregate demand. For many years the impacts of variables such as current disposable income, past peak income, interest rates, and consumers' expectations on consumption have been debated and empirically examined in the macroeconomic literature. Although scholars have studied the subject extensively, prediction of levels of consumption expenditure remains an unresolved issue.

The focus of this paper is on the explanatory power of current available measures of consumers' expectations to predict future levels of consumption. Our hypothesis is that due to statistical bias current estimates such as the index of consumer sentiment are not reliable tools for prediction of consumption expenditure. We present empirical evidence that, while disposable income is a good predictor for consumption, the index of consumer sentiment does not have explanatory power to predict future levels of consumption expenditure.

## **Background**

According to Keynes (1936), current consumption expenditure is very closely related to current disposable income—both for an individual and for an economy. Empirical evidence both

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in cross-sectional and time series data has been widely used to explore Keynes' theory. The results were mixed and led to a variety of innovations in consumption theory. Friedman (1957) introduced permanent income hypothesis (PIH). According to the PIH, consumption by households is the outcome of an intertemporal decision-making process. Friedman argued that consumption had two components, a permanent planned component based on habits, budget planning, and current needs and a transitory capricious component based on whim, chance occurrence, and random phenomena.

While the PIH alludes to a flexible concept of permanent income, including possibly lifetime income, it makes no explicit allowance for demographic factors. The structure of population, number of new couples, percentage of retired couples, and so on, is not static. These kinds of factors may change and induce changes in consumption that would be unanticipated by the PIH. Duesenberry (1967) introduced the relative income hypothesis. He postulated that consumption depends on current income and past peak income. If income exceeds the previous peak level of income, no downward adjustment in living standards is necessary, and consumption will adjust to income according to one set of relations. If, however, income falls below previous peak income, then consumption will react more gradually to changes in income. A different approach to consumption was undertaken by Modigliani and Ando (1963). Their theory of consumption titled "Life Cycle Hypothesis" distinguishes between two types of wealth, net worth of one's stock of assets and the present value of one's expected labor income stream. According to this theory, consumption at any time depends both on the flow of expected labor income and on the stock of net worth or wealth.

The impact of interest rates on consumption expenditure has also been studied extensively in the macroeconomic literature. Almost all empirical studies on the subject have found no significant relationship between interest rates and consumption expenditure (Lusardi 1990; Wilcox 1990; Elmendorf 1996). The absence of a significant relationship between interest rates and consumption may be due to two simultaneous effects that interest rates have on consumption. While an increase in interest rates (an increase in cost of financing) may induce a reduction in consumption of durable goods and services, it could also raise future incomes from each dollar saved in the current period and thus increase current consumption. Consequently, the direction and magnitude of the effect of interest rate on consumption expenditure remains ambiguous.

Some relatively recent studies have examined the impact of consumers' expectations on consumption. An empirical study by Bram and Ludvigson (1998) suggests that, when interest rate and equity price changes are included in forecasting models, the Index of Consumer Sentiment (ICS) is no longer a significant predictor of consumption expenditures. However, according to this study, the Conference Board's Consumer Confidence Index (CCI) significantly improves the explanatory power of the forecasting models. Bram and Ludvigson conclude that the CCI and the ICS do not provide the same forecasting information. Yash and Martin (2003) use empirical analysis controlling for the possible influences of expected changes in income and interest rates on consumer spending. They find that consumer sentiment may predict future household spending because it foreshadows current economic conditions. They conclude that consumer sentiment is useful as a barometer of the near-term outlook for spending. Garrett, Hernandez-Murillo, and Owyang (2003) test the ability of consumer sentiment to predict retail spending at the state level. They conclude that the practical value of sentiment indices to forecast consumer spending at the state level is, at best, limited. There are other studies in the literature that investigate the impact of consumers' expectations on consumption expenditure (Souleles 2001; Carroll, Fuhrer, and Wilcox 1994). None of these studies concludes a clear positive relationship between these variables. It has been argued that consumers' expectations about the economy's future should have an impact on consumers' decisions about how much to consume and how much to save. When consumers have good expectations about the future, they may consume more and save less than when they are

pessimistic about it. Therefore, what consumers are thinking about the future state of the economy could be a useful factor in explaining future changes in levels of consumption.

While consumers' expectations seem to be a strong predictor for future consumption expenditure, there are potential statistical problems with the use of estimates for consumers' expectations. In the next section, we present explanations for these problems and hypothesize that consumers' expectations measured by current available estimates such as index of consumer sentiment do not have explanatory power to predict future levels of consumption expenditure. We present empirical evidence that, while disposable income is a good predictor for consumption expenditure, consumers' expectations do not have explanatory power to predict future levels of consumption.

### **Empirical Analysis**

While consumers' expectations seem to be a logical predictor for future consumption expenditure, there are potential statistical problems with the use of estimates for consumers' expectations. First, when estimates like the consumers' expectations index or the index of consumers' sentiment are used, there is no assurance that the resulting forecast errors average out over a certain time period. Consumers who are surveyed may overestimate or underestimate the level of business activity, future inflation rates, and other key macroeconomic variables in such a way that could lead to biased predictions. Second, forecasts may be inefficient, in that people's forecast errors can be correlated with their demographic characteristics and/or aggregate shocks do not hit all people uniformly. As a result of these problems, we believe that available estimates for consumers' expectations should not have any strong explanatory power to predict future consumption expenditure. In this paper, we provide an empirical examination of the impact of disposable income and consumers' expectations on consumption expenditure. We hypothesize that the relationship between survey-based estimates for consumers' expectations and future consumption expenditure should be insignificant.

Two of the best known tools of measuring consumers' expectations are the consumer confidence index published by the Conference Board and the index of consumer sentiment published by the Survey Research Center at the University of Michigan. In this paper, we use the index of consumer sentiment to measure consumers' expectations. This index is based on the responses of several hundred households to questions about their current and expected future financial situation and their expectations about the state of the economy in the next one to five years. The index is measured relative to a value of 100 for 1966, with higher values corresponding to greater consumer optimism.

We use a multiple regression model in which the dependent variable is consumption expenditure and the independent variables include disposable income and consumers' sentiment. Data for consumption expenditure and disposable income were obtained from the Bureau of Economic Analysis: National Economic Accounts at [www.bea.doc.gov](http://www.bea.doc.gov), and the data for consumers' sentiment index were obtained from [www.econstats.com](http://www.econstats.com). We use monthly time series data for all three variables over the 1990-2003 period to test for the impact of disposable income and consumers' expectations on consumption expenditure. To perform our empirical analysis, we estimate the following multiple regression model:

$$C_t = a + b_1 DI_t + b_2 CS_{t-1} + U_t \tag{1}$$

where  $C_t$  = Level of consumption expenditure at time  $t$   
 $b_1$  = Marginal propensity to consume  
 $DI_t$  = Level of disposable income at time  $t$

- $a$  = Intercept  
 $b_2$  = Slope of current consumption with respect to lagged consumers' sentiment  
 $CS_{t-1}$  = Lagged consumers' sentiment  
 $U_t$  = Error term at time  $t$

Table 1 presents the estimates for the slope coefficients,  $b_1$  and  $b_2$ , over the entire sample period as well as the two sub-periods of 1990-1996 and 1996-2003. Slope coefficients related to disposable income (marginal propensity to consume) are significant at the 5 percent confidence level for all periods. These results confirm the traditional Keynesian hypothesis that current disposable income is the major factor determinant of current consumption expenditure. However, slope coefficients related to the lagged consumers' sentiment are insignificant. These results conform well to our hypothesis that consumers' sentiment has no explanatory power with respect to consumption expenditure. While less biased measures of consumers' expectations may be powerful tools of predicting future consumptions, it appears that statistical bias related to the use of a survey-based index of consumer sentiment makes this measure an inefficient tool for consumption forecasts.

**Table 1.**

$$C_t = a + b_1 DI_t + b_2 CS_{t-1} + U_t$$

Period	$b_1$	$b_2$	N	DW	$R^2$
1990.1- 2003.7	.51 (3.62)	1.18 (.30)	163	2.04	.96
1990.1-1996.9	.31 (4.32)	.98 (.25)	81	1.97	.97
1996.10-2003.7	.62 (3.40)	1.27 (.53)	82	2.01	.96

### Concluding Remarks

The objective of this study was to examine the relationship between consumers' expectations as measured by the index of consumer sentiment and future consumption expenditure. The major hypothesis of this study was that the index of consumer sentiment would not have the explanatory power to predict future consumption. Our logic for this hypothesis was based on the statistical bias related to the use of this index as a proxy for consumers' expectations. We used a multiple regression model in which the dependent variable was consumption expenditure and the independent variables include disposable income and the index of consumers' sentiment. We found empirical support for our hypothesis. According to our test results, while disposable income is a good predictor for consumption expenditure, the index of consumer sentiment does not have explanatory power to predict future levels of consumption. The major implication of our empirical results is that to obtain more reliable forecasts for consumption, more research on developing other unbiased measures for consumers' expectations is necessary.

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