Measuring Animal Spirits: Economic Indices and the Future

By Michael Richarme, Paul McDonnold, and Edward Carnal

Economists have long theorized about the role consumer expectations play in creating our economic future. During the Great Depression, John Maynard Keynes attributed the business cycle to alternating waves of optimism and pessimism, which he termed "animal spirits." Keynes believed that these waves cause the boom-and-bust cycle experienced by market economies.

In the twenty-first century, the science and art of prognostication is especially relevant to marketers. Information about the economic future is invaluable in helping them position their offerings so as to maximize sales and profits. Although a massive industry has arisen from attempts to divine the future through the use of forecasting models, many models do not leverage the insight offered by tracking consumer sentiment.

Indices based on consumer surveys, such as the Decision Analyst Economic Index, attempt to measure these "animal spirits." By correlating the Decision Analyst Economic Index to other data, and including it in forecasting models, we have found that our ability to see into the future can be dramatically improved.

Decision Analyst Economic Index December 2005	
National Index	**Value**
United States	112
Argentina	106
Australia	118
Brazil	118
Canada	112
France	91
Germany	97
India	136
Italy	99
Mexico	104
Spain	106
United Kingdom	110

The Decision Analyst Economic Index can provide important insight in the modeling and forecasting of:

- **Retail sales**
- **Inventory needs**
- **New market potential**
- **New product launch timing**
- **Macroeconomic variables (consumer spending, GDP, unemployment, etc.)**

Methodology

Using Decision Analyst's proprietary Internet consumer panel, American Consumer Opinion®, a set of nine closed-end questions are asked of a nationally representative sample of consumers. This survey is conducted monthly and the data from it are used to calculate the Economic Index.

While it may be argued that consumers do not engage in the cognitive effort required to make valid projections of the state of the national economy, they are nonetheless very well attuned to their own personal economic situation and that of persons in their sphere of contact. An individual consumer may not be familiar with the minutia of Federal Reserve monetary policy, but they will talk with colleagues at work, at soccer games, at church, or at other gatherings and gain an intuitive familiarity with the direction in which the economy is moving.

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Compiling enough of these individual consumer opinions across a relevant geographic area can provide a good estimation of what will occur in the near future. In fact, testing has sometimes illustrated the rather embarrassing (for economists) conclusion that properly constructed consumer surveys can more accurately predict the state of the national economy than can abstract theoretical models constructed by economists (for example, see Thomas, Jr.[1] and Gramlich[2]).

Geography

The Decision Analyst Economic Index was initially constructed for the United States economy, though the global nature of the American Consumer Opinion® panel led to a rapid expansion to additional countries across the globe. At this time, the Decision Analyst Economic Index data are collected monthly in the following 12 countries: United States, Canada, Mexico, Brazil, Argentina, United Kingdom, France, Italy, Germany, Spain, Australia, and India.

All surveys are conducted in English or the native language of the respondent. Because the surveys contain the same questions from country to country, the indices for each country are both indicative of consumer sentiment in that country and can be directly compared from country to country. The table on page 1 presents the indices for each country as of December 2005.

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1   Thomas Jr., Lloyd B., "Survey Measures of Expected U.S. Inflation." Journal of Economic Perspectives; Fall 1999, Vol. 13, Issue 4, p. 125.

2   Gramlich, Edward M., "Models of Inflation Expectations Formation." Journal of Money, Credit & Banking; May 1983, Vol. 15, Issue 2, pp. 155-173.

The Decision Analyst Economic Index for the United States employs approximately 2,500 completed surveys per month, and is calibrated such that a value below 100 indicates economic contraction, while a value above 110 indicates economic expansion. Values between 100 and 110 indicate uncertainty or, possibly, economic stagnation.

In addition, the sample size of the United States survey allows for the construction of regional indices, conforming to the geography of the nine United States census divisions. This allows for direct comparison between regions in the United States. The same calibration of the index is performed, so that the regional indices can also be directly compared to the overall United States index.

For countries other than the United States, the sample size ranges from approximately 250 to over 2,000 completed surveys per month per country. For most of the countries the sample size is not large enough to be disaggregated into smaller geographies, but this expansion is planned for future indices. In addition, other countries, such as China, will be added to the international list in the future.

Validation

The two best known consumer-related indices are the University of Michigan Index of Consumer Sentiment (ICS) and the Conference Board Consumer Confidence Index (CCI). Similar to the Decision Analyst Economic Index, both utilize consumer surveys to ascertain the current state and future path of the economy. However, there are also differences between the

three indices that are important to understand from an interpretation perspective.

The University of Michigan ICS was started in 1946. This survey is administered monthly to approximately 500 consumers via telephone. The survey contains 50 questions and is a composite index of both current and future expectations.
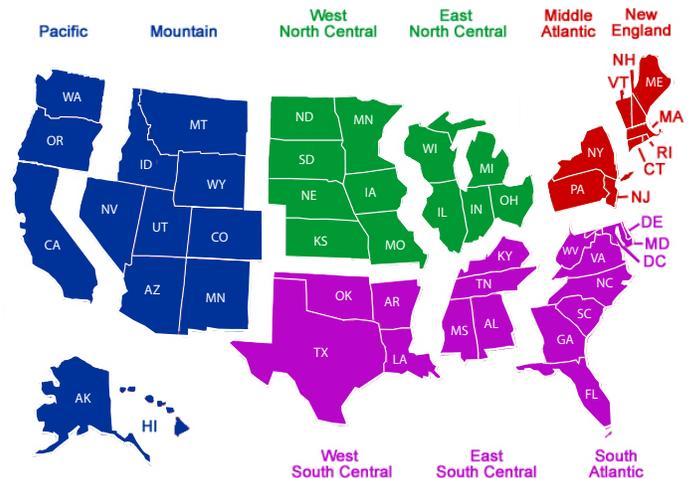
The Conference Board CCI was started in 1967. This survey is administered monthly to approximately 5,000 consumers via mail. At this time, the Conference Board utilizes an external marketing research firm for data collection. The survey contains five questions, covering current and future business conditions, current and future employment conditions, and future family income. The time frame for future expectations is six months. The Conference Board CCI is also available for eight additional countries (Australia, France, Germany, United Kingdom, Spain, Japan, Korea, and Mexico) though no methodology statements are available on the Conference Board website about these additional countries.

Examining the relationship between the Decision Analyst Economic Index and the other two indices, a correlation of 0.87 is obtained since 1999. The relationship is illustrated in the following chart.
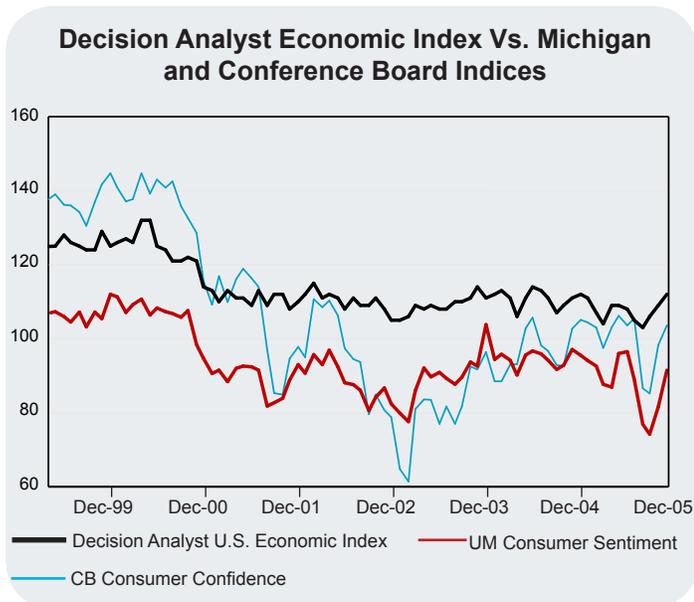
In the index comparison chart, major directional movements in consumer expectations can be related to economic and geopolitical events during that period. For example, a major inflection point is November of 2000, when consumer expectations began trending downward. Shortly after this, unemployment began trending upward and an economic contraction began. Another major inflection point is seen in September 2001 after the World Trade Center disaster. Consumer expectations went down due to concerns of global terrorism impacting the economy.

Given the relatively tight correlation of the three consumer-based indices (ICS, CCI, and Decision Analyst) with each other, the question arises as to why Decision Analyst has undertaken the expense of creating its own index. A large part of the answer lies in the level of control and customization that Decision Analyst can offer clients by having its own index. The Decision Analyst Economic

Decision Analyst Economic Index Vs. Michigan and Conference Board Indices

Legend:
— Decision Analyst U.S. Economic Index
— UM Consumer Sentiment
— CB Consumer Confidence

West Region
Pacific 111
Mountain 115

Midwest Region
West North Central 110
East North Central 108

South Region
West South Central.. 111
East South Central...108
South Atlantic...118

Northeast Region
Middle Atlantic..109
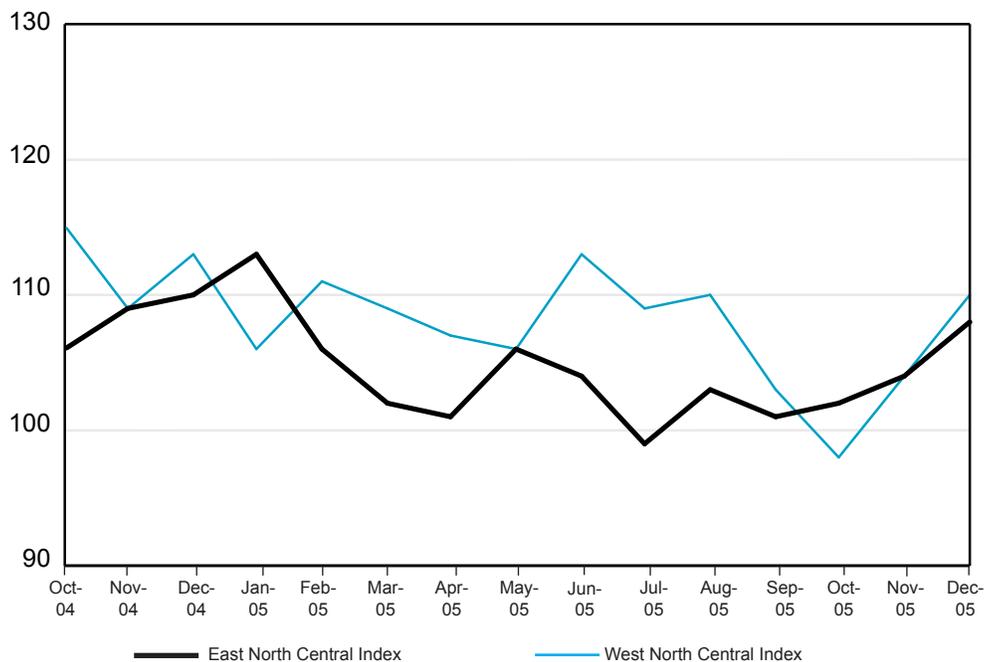New England..115

Index can be broken down regionally, extended to new countries of interest, or it can be broken down to analyze the trends of specific questions, such as consumer expectations about the stock market.

Decision Analyst Economic Index
**Mountain Vs. Pacific**
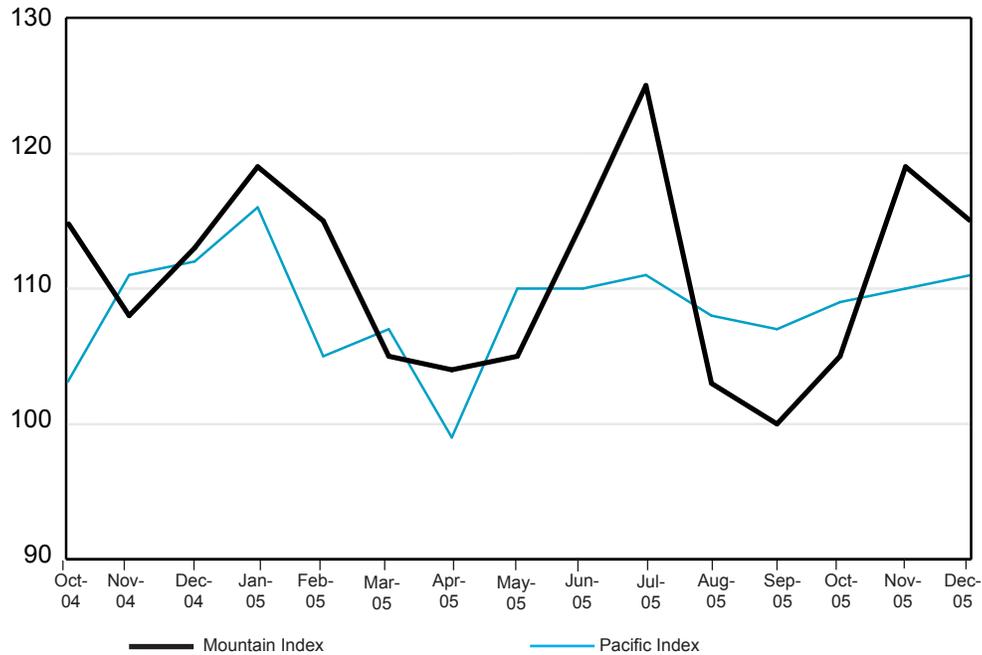
Mountain: Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, and Nevada
Pacific: Alaska, Washington, Oregon, California, and Hawaii

Decision Analyst Economic Index
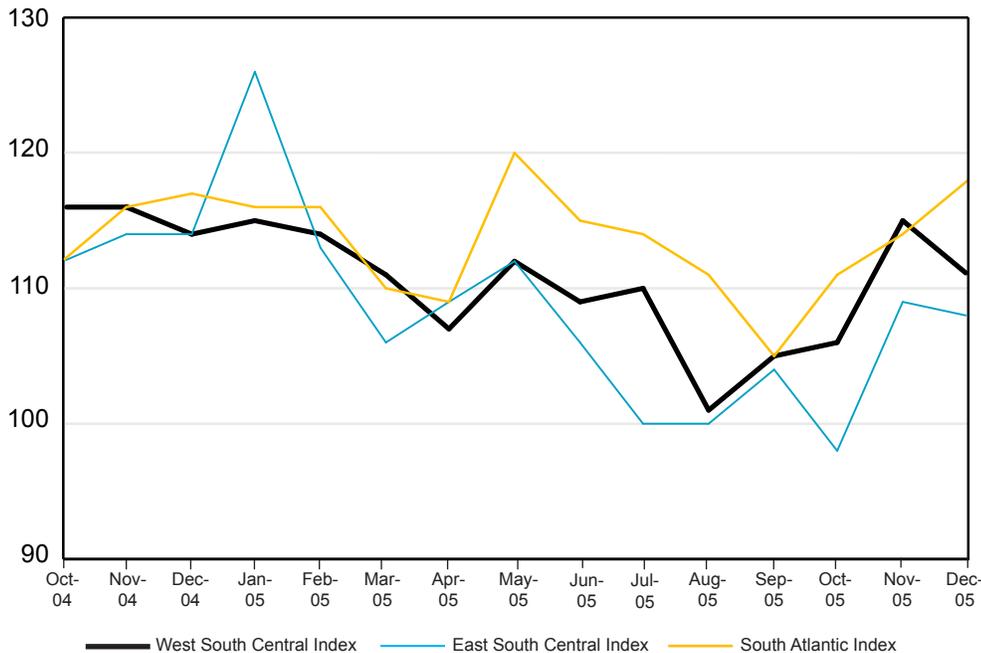**East North Central Vs. West North Central**

East North Central: Ohio, Indiana, Illinois, Michigan, and Wisconsin
West North Central: Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas

Decision Analyst Economic Index
New England Vs. Middle Atlantic

New England Index —— Middle Atlantic Index ——
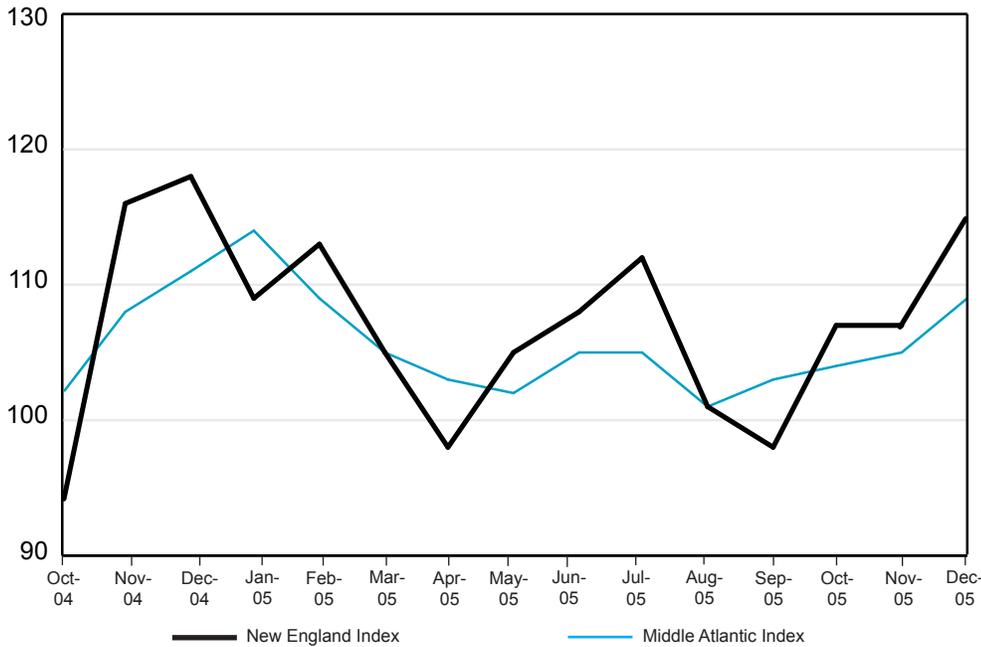
New England: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut
Middle Atlantic: New York, New Jersey, and Pennsylvania

Decision Analyst Economic Index
South Atlantic Vs. East South Central Vs. West South Central

West South Central Index —— East South Central Index —— South Atlantic Index ——

South Atlantic: Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, and Florida
East South Central: Kentucky, Tennessee, Alabama, and Mississippi
West South Central: Arkansas, Louisiana, Oklahoma, and Texas

Localized events can cause consumer expectations to differ from region to region, though the general trend tracks with the overall United States index.

This leads to more volatility in regional indices, reflecting the impact of a large plant closing or opening, a natural disaster, or other events which cause expectations to change.

Over the past 15 months, regional indices have predicted turbulent conditions, though the trend of the past quarter points to economic expansion across the United States.

Regional Detail

It is possible to disaggregate the Decision Analyst Economic Index for the United States into the nine U.S. Census divisions. The index for each Census division for December 2005 is shown in the following chart. As can be seen, there are significant differences in the Decision Analyst Economic Index for different divisions and regions.

In addition to point-in-time differences between regions, it is also of interest to analyze the differences in trend for the various regional index breakdowns. This can be seen graphically for each of the nine divisions in the following four charts.

Though they generally move together, the regional indices are more sensitive to events and news that directly affect their area. For example, a major employer closing a plant or a major regional weather event may cause the consumer expectations for that region to decline further than those of other regions that are not immediately or directly affected by those events.

One example of such regional differences can be found in unemployment rates. The Decision Analyst Economic Index has been shown to be an excellent predictor of unemployment rates at both the national and regional level, with a correlation of -0.90 at a

**Decision Analyst Economic Index
West South Central Index vs. Unemployment Rate**
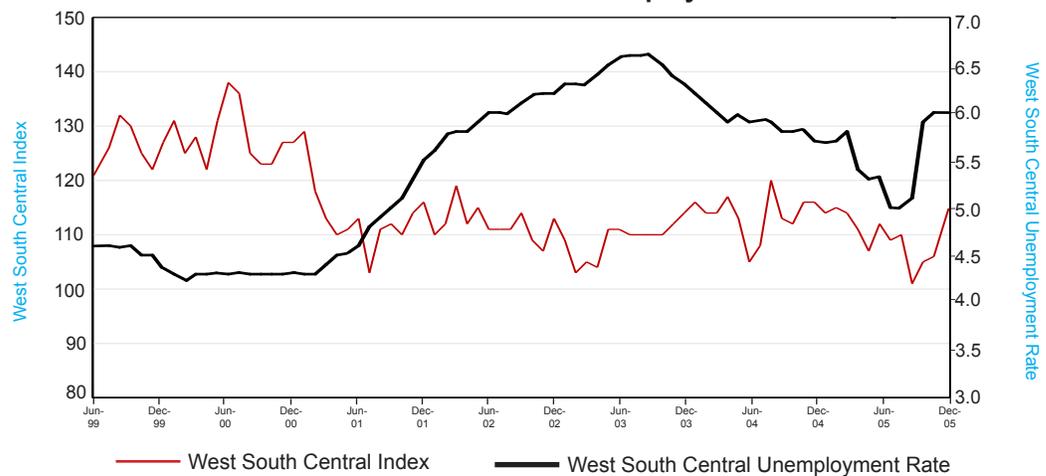
**Decision Analyst Economic Index
U.S. Index vs. Unemployment Rate**
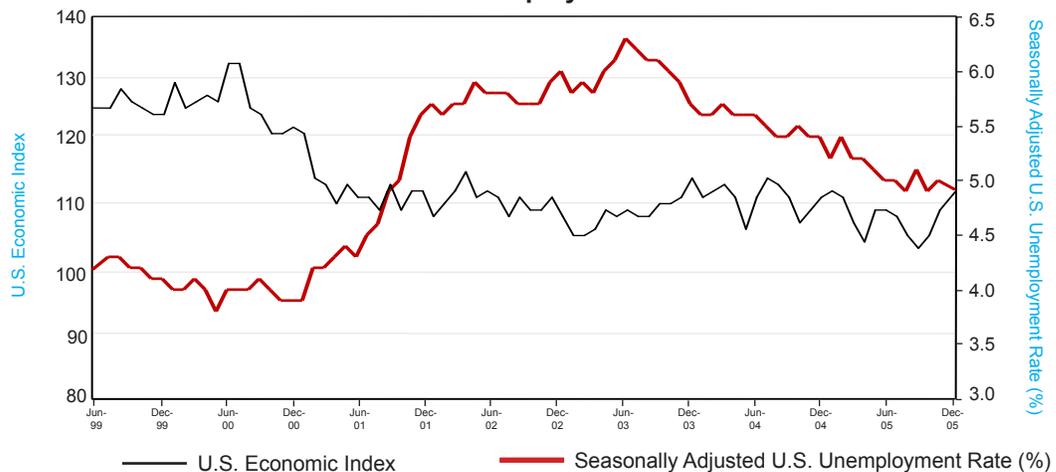
six-month lag (see graphs below). As the Economic Index falls (indicating more consumer trepidation about the economy), we would expect a corresponding rise in the unemployment rate approximately six months later. This illustrates the power of consumer economic surveys.

While the typical survey respondent is not a trained economist, and may know little about economic theory or forecasting, they do know what they have been hearing. Are rumors of layoffs circulating at work? Are friends facing layoffs? Is sales revenue off this year? By gauging these attitudes on a broad scale, Decision Analyst's Economic Index turns the attitudes of noneconomists into a de facto economic forecasting model with an admirable track record.
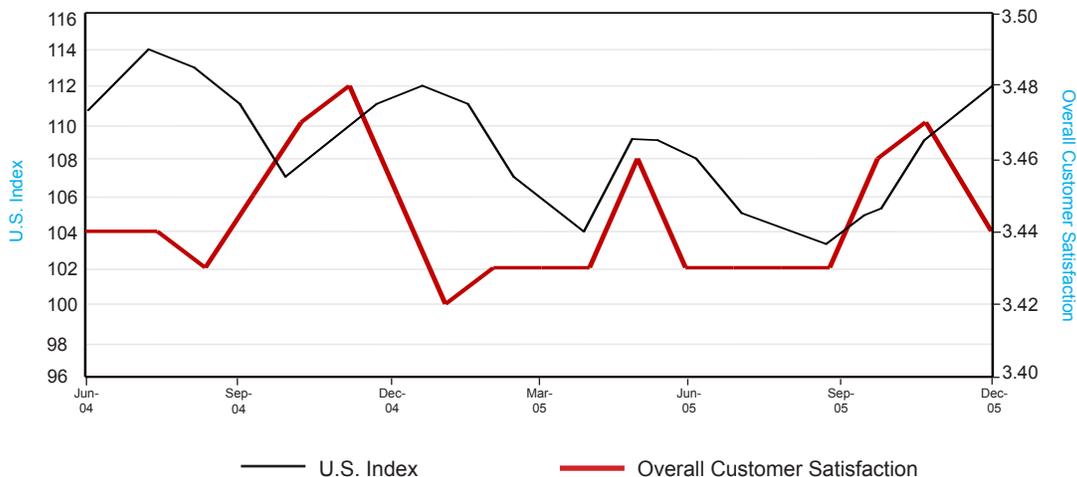
Econometric Applications

Armed with a consumer index which has demonstrated predictive ability, marketers have access to valuable information with which to take advantage of upturns and to mitigate the effects of downturns in the economy.

Take, for instance, sales forecasting. Much of the uncertainty involved in forecasting sales is a result of uncertainty regarding the overall business climate that will prevail over the term of the forecast. By using a consumer confidence index to inform the forecast, some of the uncertainty can be eliminated, or at least clarified.

As an example, imagine that you are performing a sales forecast for a product for which sales have been escalating rapidly. Standard forecasting techniques would likely extrapolate the trend outward. But say that the economy has been booming over the period that sales have been escalating, and you can see from the consumer index that a cooling-off period, perhaps even a recession, is coming. In this case, based on the information the consumer index is giving you, you would want to modify your forecast to account for the expected cooling business climate.

As another example, consider the plight faced by an executive in charge of new product development. Launching new products is the penultimate exercise in uncertainty. In such a situation, a need exists for real data to inform the process, and the information contained in a consumer survey index can help. For instance, when consumer confidence is on the rise, an astute executive will want to have launches ready to roll. And when confidence is declining, he or she may want to have fewer actual launches occurring, and have more resources devoted to R&D activities, which will provide the company with new products to launch when the business cycle begins to turn back up. With anticyclical products (those that sell better during a recession) the opposite logic would apply.

Decision Analyst Economic Index
U.S. Index vs. Customer Satisfaction

To take a more concrete example of the possible applications of a consumer index, the Decision Analyst Economic Index has been successfully related to customer satisfaction data for a large, national mass market retailer. In the following chart, it can be seen that changes in the consumer index precede changes in the customer satisfaction data by approximately three months. When the satisfaction data are lagged, the indices correlate by approximately 0.60. This three-month window gives the retailer the opportunity to take proactive measures related to advertising, staffing levels, pricing adjustments, and the like, to mitigate the coming impact on store sales.

There are clearly many factors that influence customer satisfaction. The correlation seen previously would indicate that the Decision Analyst Economic Index captures some of those factors. If a consumer believes that economic expectations are headed downward, there will be a cognitive dissonance occurring in the near future, which validates that expectation and translates to a less satisfactory retail experience. The consumer is more prone to notice those elements fitting with the preconceived notion of retail conditions, such as service level, inventory availability, and even less significant elements as store cleanliness or merchandise in disarray. However, if the consumer has an economic expectation of improvement, the same cognitive dissonance process works in reverse, and the consumer is prone to notice positive elements that fit with the preconceived notion of the retail experience.

There are many such possibilities for relating the Decision Analyst Economic Index to company-level data. Retail sales, for instance, are often driven by consumer expectations about the economy, especially for large-ticket items. By capturing consumer expectations in the category of interest, and combining that with other driver variables (such as disposable personal income), a sales forecasting model can be constructed which can aid in budgeting, inventory scheduling, advertising planning, and the like. When the role of consumer economic expectations is ignored in such forecasting models, a valuable source of information is left unexploited. Through the Economic Index, Decision Analyst has captured this information and incorporated it into sales forecasting and optimization models.

Conclusion

The Decision Analyst Economic Index can be customized and manipulated to fit a wide variety of product categories and modeling needs, to help clients drive revenue growth and maximize profits. It does this by capturing, quantifying, and aggregating the attitudes of consumers. These attitudes, the "animal spirits" spoken of by John Maynard Keynes, play an important role in determining the direction in which the business climate will move. By measuring them we gain a powerful tool to help us see into the economic future.

About Decision Analyst

Decision Analyst is a global marketing research and analytical consulting firm. The company specializes in advertising testing, strategy research, new products research, and advanced modeling for marketing-decision optimization.

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