

**The Analytic Use and Interpretation of Consumer Survey Data:  
The U.S. Perspective**

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**Introduction**

The Survey of Consumers, conducted by the University of Michigan, has long promoted the worldwide harmonization of the content and methods used to collect data on consumers' economic expectations. I am here today to again promote harmonization as well as to promote a program of ongoing change so that future surveys can be even more successful in forecasting cyclical trends in consumer demand in the 21<sup>st</sup> century. Over the next decade the surveys need to incorporate new developments in economic theory as well as recent innovations in survey methodology. It is a challenging task to determine which changes are appropriate, how to implement those changes, and how to maintain a consistent time series of measurements for use as leading economic indicators.

My second objective is to review how the survey data are presented, disseminated, and interpreted. As newer information technology and internet capabilities continue to evolve, so too have the demands of the data users. New and experienced users want the data to be available immediately following the completion of the survey, updated regularly, easily accessible, and available in formats that are ideally suited to their research needs. Finally, I will turn to efforts to insure continued public support and confidence in the results of the consumer surveys. The recent rise in demands for privacy and confidentiality has been matched by a rising demand for full information about research methods. Respondents now demand complete confidentiality of their data as well as the complete transparency of survey methodology.

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## Harmonization and Change

The purpose of harmonizing consumer surveys is to facilitate cross-country comparisons as well as to enable the construction of multi-country indices of consumer expectations. Providing for the cultural and linguistic translation of each question may be easier than eliminating all the differences in survey methodology that could have a potential impact on the results. The harmonization protocol could potentially cover many different aspects of survey methodology, including such things as sample design, respondent selection, response rates, method of data collection, interviewing techniques, editing, sample weights, handling of missing data, and so forth.

No harmonization protocol, however, can ever be guaranteed as completely effective. Some differences could remain which produce what could be termed “country” effects which may be due to imperfect cultural or linguistic translatability or unresolved differences in survey methodology that affect the data. Nonetheless, given that our interest is the measurement of period-to-period change, these “country” effects may not be very damaging. If it is assumed that the country effects are relatively constant over short periods of time, say between adjacent months, the calculation of the change in the confidence index, for example, would be unaffected since the constant country effect vanishes in the period-to-period differencing. This is true even if the country effect is relatively large.

While harmonization is viewed as a necessary condition for robust data analysis, maintaining the predictive ability of the collected data often requires change in response to new developments. The data collected must be responsive to changes in the economic environment, to changes in the economic sophistication of the population, and to innovations in economic theory and survey methodology. The preservation of a consistent time series and the creation of new measures are equally important tasks if we wish to maximize the predictive ability of consumer surveys in the 21<sup>st</sup> century.

The University of Michigan’s surveys have always incorporated two types of questions. The first set of questions represents the core measures that are repeated in identical form in each survey. These core questions are the inputs for the Index of Consumer Sentiment as well as other regularly published indices. The second type reflects an expansion of the survey content due to innovations in economic theory, survey methodology, and estimation techniques. The future research potential of the surveys rely on devising new measures that can more accurately forecast cyclical changes in demand, devising new measures that provide a longer

lead time for the forecasts, and devising new measures that deepen and expand the substantive content of many of our standard questions.

Some of these new measures represent simple extensions of current questions. For example, the questions on inflation expectations in the University of Michigan's surveys have gradually evolved over time from a simple measure of the direction of change in the 1940's and 1950's, to a bracketed response scale in the 1960's to mid 1970's, to its current open-ended response scale. Each step was backward compatible, so no time series information was ever lost. The more exacting questions were added early enough to keep the Michigan inflation expectations series at the leading edge of measurement, including asking about the extent of any potential deflation. Each step in the evolution of the measure of inflation expectations took account of the rising knowledge and sophistication of the population as well as the growing demand for more detailed measures sparked by developments in economic theory. The resulting series on inflation expectations has been found to be an unbiased and accurate predictor of the actual inflation rate and has been a leading indicator in its own right. Importantly, the process of change and development never ends, as new experimental measures of the degree of certainty that consumers attach to their inflation expectations are now being tested and refined.

The development of completely new measures of consumer expectations represents a more challenging task. For example, as the population ages, concerns will shift from uncertainty about future wage income to uncertainty about future rates of return on assets. Quite apart from the issue of whether and when such a new question should become part of a revised sentiment index, there needs to be an adequate data series available for testing. Given that many years of data would be required for robust statistical tests, these series must be developed long in advance. Moreover, since it is difficult to predict which measures will prove to be important and how to best measure the concepts, several alternative measures need to be developed. Given that such a development task is expensive, the optimal strategy would be to have the early development work spread across different countries that allow for variations in economic experiences and takes advantage of differences in the knowledge and sophistication of the population.

This would be the long-term benefit of harmonization: the coordinated development of a broad range of new measures of consumer expectations. Cooperative arrangements need to be put in place to optimize the use of resources in testing potential areas for the development of new questions. This cooperation should accommodate a diverse range of new questionnaire content by allowing discretion on the part of the individual research teams to devise appropriate

measures. Such a cooperative effort could not only include the development of new questions and new response scales, but also new data collection methods as well as new methods to utilize the data for forecasting purposes.

### **Development of Analysis Methodology**

The full research potential of the survey data on consumer expectations has only been partially realized by government agencies, financial institutions, business firms, and by academic researchers. Indeed, nearly all the analysis based on consumer survey data has been done using macro models of consumer spending. I will only mention two shortcomings of this approach, both involving aggregation. First, most models do not disaggregate the major components of consumer demand; second, most models do not use the disaggregated data on households to make those forecasts.

Macro models that focus on aggregated consumers miss one simple fact: no single index of consumer expectations can be devised to accurately predict all types of consumer expenditures at all times. Consumer expectations for interest rates, inflation, income, jobs, stock prices, home values, economic policies, to name just a few, have moved independently and often in opposite directions during the past few years. Although these are all factors that determine people's expectations about their future real income, each of these factors has a very different impact on spending on homes, vehicles, household durables, travel, and so forth. In response, some parts of the U.S. economy have been in a strong expansion during the past few years while other parts of the economy have suffered from a long downturn. More accurate forecasts require disaggregating consumer expenditures into its major components and then utilizing the most appropriate information on consumer expectations to forecast each component. The individual forecasts of the component series can then be combined to produce estimates at higher levels of aggregation.

Cyclical changes in total personal consumption expenditures are dominated by spending on durable goods, and it is for these discretionary purchases that consumer expectations were originally designed to predict. To be sure, some spending on nondurables and services represent discretionary purchases, but most of the expenditures in these categories are relatively insensitive to changes in expectations. For these expenditures, the best use of the survey data would be to utilize the data to generate forecasts of the more usual explanatory variables, such as income, employment, and prices in advance of their official release by government agencies.

The second innovation in analysis strategies involves disaggregating the survey data by demographic and economic subgroups. Analysis based on particular income, age, or regional groups has shown promise. For example, some purchases are dominated by younger consumers, or higher income consumers, or among urban consumers, and so forth. Such disaggregated forecasts would be recombined before publication. Few if any surveys now provide the microdata so that researchers can devise and test such models, and it is a rare survey that releases the microdata files immediately after the surveys have been completed so that they could be used for forecasting purposes. The immediate release of survey results for selected income, age, and regional subgroups would promote such new forecasting models.

### **Presentation and Dissemination**

It is a cliché to note that the Internet has changed everything. Nonetheless, it has. More people have directly accessed the data from the Michigan surveys in the past few years than ever before. The use of the data among both new and experienced users has several costs as well as benefits. Two issues are worth highlighting. First, the broader the spectrum of users, the more likely there will always be first-time users, and these users are more likely to have no previous experience in the use of survey data or economic analysis. These new users can not be assumed to have any of the relevant knowledge, and an extensive array of basic information must be provided. Second, the experienced and more knowledgeable users have become more demanding than ever, wanting the data readily accessible, updated continuously, available as microdata as well as time-series data files, formatted in a way that suits their research needs, and automatically include all needed documentation which can be printed or viewed by any computer.

Internet sites for the consumer surveys are now commonplace, but many have not advanced their functionality as fast as users would prefer. A comprehensive Internet site is both a demanding task to design and build and even more difficult to keep maintained and constantly updated with new information. Projects typically judge a site complete if all information is available, whereas user's judge the site complete only if they can easily find the information that they need when they need it. Information that is available but is too difficult to find, too difficult to understand, or in a format that would require a good deal of effort to transform is often judged much less favorably by potential users.

It would at first seem that a single comprehensive Internet site would be the ideal solution. While this may be true in theory, it is not in practice. The major users of the Michigan

survey data are project sponsors, academic researchers, the press, and the general public. Each group has their own special needs and perspective, and each group finds the information designed for the other groups distracting and irrelevant. For example, research sponsors that regularly do economic forecasts need facilities to repetitively download data in a format that matches their analysis programs while the press needs to have forecast materials and documentation suitable for quick publication. Academic researchers want detailed documentation of the survey methodology and have the microdata available for easy download. The general public wants a quick overview of the major aspects of the research together with some highlights of recent findings. These distinct needs mean that nearly every document needs to be specifically designed for each group. How the sample design is described, for example, needs much more detail for project sponsors than the press; the description for the press needs to be brief and suitable for publication; the most complete and detailed description is required by academic researchers, and the shortest and most accessible by the general public.

While it is a duty to enter the survey data into the public domain, it is also in the best interests of science as well. Large national and international projects benefit from both formal and informal organizations. The internet provides the ability to have virtual research teams, with each team member having complete access to the common data, documentation, and methodology as well as the accumulated record of past and current research. Little or no direct contact among the researchers is needed to produce results in such a distributed research project.

### **Timeliness and Interpretation of Data**

All of these groups, however, agree on one requirement: they want access to the data immediately after the survey is complete. Indeed, one of the key advantages of the survey data is that it is available well in advance of any information from the government's official economic accounts. Any extra time that can be gained from the prompt release of the data is a critical advantage. The University of Michigan surveys have promptly released all data within 24 hours of the completion of each month's survey. Moreover, systems have been devised to update all aspects of the Internet site immediately, including the analysis reports, charts, tables, forecasts, time-series and cross-section data bases, and so forth.

Unfortunately, the typical response of organization to the timing of the data releases is just the opposite of what is usually considered an optimal response. The common practice has

been to conduct the survey in a short period at the start of each month, provide a week or more for data preparation, another week for official review, and then release the data by the end of the month. Instead, it would be better to lengthen the data collection period and shorten the delay between the closing date of the survey and the release of the results. The major concern about shorter data collection periods is that they leave the survey results vulnerable to dramatic events that dominate the public's attention but completely fade away in days. The University of Michigan surveys are typically spread evenly throughout the month to avoid an unusually large impact from a temporary event. More importantly, the data is released immediately after the end of the data collection period. Such practices enhance the utility of the survey data since it is less subject to measurement error and promptly released for forecasting purposes.

An important aspect of the monthly data release is the interpretation of the data. Each month the data is provided along with an interpretative analysis and the implied forecasts for changes in consumer spending and saving behavior. Nonetheless, just like the response to releases of the government's income and product account data, there are many differing opinions about the exact implications for consumer demand. Any project director or government official who thinks that they can be the sole arbiter of the implications of the data is bound to be disappointed. Simply stated, the data are too important to too many interests to allow any single individual or organization to decide on how the data should be interpreted. It is the quality and integrity of the data that survey organizations need to safeguard, not the interpretation of the results.

### **Confidentiality and Transparency**

The success of the survey research program is a testament to the willingness of consumers to contribute their time, effort, and knowledge to advance our collective understanding of cyclical economic phenomena. Indeed, it is the trust and cooperation of our fellow citizens that makes this research possible; it is their willingness to share their economic circumstances and knowledge that provide the substance to the research. In return, respondents ask that survey organizations respect their privacy and that their participation in the survey is not abused by the hidden use of unfair or biased methodology. In short, consumers demand privacy and transparency.

The University of Michigan devotes a significant number of resources to accomplish this important task. Letters are mailed to all known respondents that explain the history and purpose of the study, how each household was selected, promise complete confidentiality,

acknowledge the right of the respondent to refuse to participate, estimate how much time it would take to complete the interview, and provide a toll-free number so that the household could call to verify any details or to schedule an interview. Following the interview, a thank-you note is mailed along with a brief summary of the survey results.

All information that could be used to identify the respondents is excluded from the data file. The privacy of respondents and the confidentiality of their data is our utmost concern. So too is the advancement of science. As a result we prepare each month's microdata file for release to researchers. While this represents the last step in our data processing efforts, it is the first step toward scientific advancement.

The strength of household surveys is that they are based on the premise that the description and prediction of consumer behavior represent the best means to foster advances in theory. While there is nothing more useful than good theory, there is nothing more productive in generating theoretical advances than good data. The unique contributions of the research program at Michigan will continue to be built on the collection of data that enables rigorous tests of established theory as well as allows the unexpected to emerge and energize new theoretical advances. Rather than being confined to the armchair of the theorist, the research program will continue to seek advances from the armchairs of respondents as they explain the factors underlying their economic decisions.