

# On the Performance of Consumer Confidence Measurement

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## Abstract

Consumer confidence is a psychological concept, described as national economic conditions, is difficult to measure; it is an expression of the opinions and attitudes of consumers about the current and future strength of the economy. How to collect this information is important because it is an economic indicator for forecasting household consumption expenditure, consumer behavior in general and the country's economic situation. Moreover, consumer confidence indices which are formed by using the consumer survey data can provide a fairly accurate prediction of consumers' economic behavior (Carroll, Fuhrer, Wilcox (1994), Kwan, Cotsomitis (2004)). In this article, household micro-level data from the consumer survey, carried out with cooperation of the Central Bank of Turkey (CBRT) and Turkish Statistical Institute (TurkStat), is used. The performance of the survey is discussed from a design based perspective by using some statistical analysis and survey theory. The results of those steps taken to enhance efficiency are evaluated. Following this and some other research, there has been some updates on consumer survey design and began a pilot period in 2012.

**Key Words:** Survey methodology, consumer survey

## 1. Introduction

There is a growing interest among countries in the macroeconomic indicators to monitor economic developments and provide the economic analysts with early behavioral signals of different groups such as consumers, businesses in the economic activity. Such indicators are used to help policy makers. Economic analysts, market researchers and many others check the performance of these indicators and plan their actions. Indexes formed from surveys are one of those tools to help this target. One of these indices is formed by using consumer surveys which are a useful and widely accepted tool to gather information about common people's expectations over time (Ludvigson, 2004). Survey expectations contain information on current developments and also forward looking information. On the other hand there is some information related to human behavior which is hidden in the measurement error. Cognitive research mainly focuses on this and even sometimes tries to group certain characteristics. There is awareness in the literature that people might act differently from what they say; a possibility affecting all works dealing with consumer survey data. People using intuitive strategies produce biases and lead to systematic errors. Aside from all problems in measuring the consumer behavior,

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<sup>1</sup> The views expressed in this paper are those of the author and do not necessarily represent the official views of the Central Bank of the Republic of Turkey.

in general the typical problem with this survey data is the shortage of knowledge gained from panel data; the respondents are interviewed only once. Therefore individual level observations are not feasible. If there is certain amount of rotation, as in this study, one can start to observe certain issues to some extent.

Consumer confidence is one of the many indicators that is designed to signal changes in economic activity and widely used in macroeconomic assessments and forecasts. Consumer confidence index (CCI) which is a measure of consumer attitudes might improve consumption forecast by reporting 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. Secondly, consumer attitudes may incorporate households' estimates of the impacts of rare shocks whose effects cannot be directly estimated from past experience or data.

How the publicly available economic information is used by consumers, firms and governments is important for economists who study the decision making process. If decision makers behave with partial information, economists assume that people form probabilistic expectations for unknown quantities and maximum expected utility (Manski, 2004). Therefore production and utilization of consumer confidence indices are examined to improve the quality of such public information. In addition to that it is also studied to develop measures that improve on the ones now available. Besides all, households' answers might reflect changed expectations and uncertainties about future conditions that have not yet occurred.

The data analyzed here are responses of CCI questions that come from CBRT and TurkStat cooperation study, consumer survey. Five questions in total that form the index are discussed in this paper. The aim of this study is to discuss the performance of consumer confidence index in a micro level from a survey design based perspective.

The paper is organized as follows. Section 2 describes the expectations data collected in the Consumer Tendency Survey. Section 3 examines month to month fluctuations in the main tendency of CCI components' expectations. This section (analyzes the variation of personal attributes between two consecutive periods) uses re-interviews of respondents to study stability and variability of individual expectations. Section 4 concludes with some open questions and further research topics.

## **2. Consumer Tendency Survey**

### **2.1 Sample Design and Data Collection**

The Consumer Survey is designed to learn the expectations of the respondents represent 15 and above year old population, having a job in rural or urban areas of Turkey that provides income who are also the respondents of Household Labor Force Survey. For the Consumer Survey, which is annexed to Household Labor Force Survey, age, employment status and income groups are taken into consideration in addition to general weight. Rotating panels are used. 50% new respondents and 50% former respondents are being interviewed for the second time after three months. The sample size is approximately 8000 persons monthly. Respondents are interviewed face to face by using CAPI (Computer Assisted Personal Interviewing) method.

The fieldwork starts on Monday of the third week of the month and lasts 2 weeks. The length of the reference period to which the survey data relates is one month. The average delay between the end of the reference period and the date of public release of data is 15 days. The average response rate for most periods is almost hundred percent.

## **2.2 Survey Contents**

The consumer survey was developed by a cooperative study of Central Bank of Turkey and Turkish Statistical Institute. It was first launched in August 2003 with a pilot period and the survey started to be published in December 2003. The survey is conducted monthly and the questionnaires were designed as recommended in the User Guide of Joint Harmonised EU Programme of Business and Consumer Surveys.

Expectations on the following topics are collected in the Consumer Survey each month:

### Personal finances

1. Purchasing power of consumers at present compared to the past 6 months
2. Consumers' expectations for their own purchasing power over the next 6 months
3. Their likelihood to borrow over the next 3 months
4. Their expectations on setting aside savings over the next 6 months

### General economic situation

1. Consumers' assessments on current general economic situation in Turkey compared to past 3 months
2. Their expectations for the general economic situation in Turkey over the next 3 months
3. Their expectations for job opportunities in Turkey over the next 6 months
4. Their assessments on timing of setting aside savings and buying durable consumption goods over the next 6 months

### Expenditures

1. Consumers' expenditure plans for buying durable and semi-durable goods, car, house and spending on house renovation

### Price expectations

1. Consumers' expectations for the direction of changes in prices over the next 12 months

## **2.3 Weighting and Estimation of Results**

All the results of the survey are weighted for the total populations by means of sample weights. Weighting improves the accuracy of the data. The revised Household Labor Force Survey results are used to weight the Consumer Survey. The weights used for the Household Labor Force Survey are design weights, non-response adjustments, external control weights and final adjustment factor. For Consumer Survey, age, employment status and income groups are taken into consideration in addition to the general weight of Household Labor Force Survey.

## 2.4 Analyses and Presentation of Data

In most survey items, consumers are presented with a choice of 3, 4, 5 alternative responses. All questions except one in Consumer Survey are presented in a 3, 4, 5-point Likert scale format. In opinion items, a characteristic value index (balance figure) is derived from the percentage distribution of the responses, which is a diffusion index. The percentage of positive replies (much better, a little better, increase sharply, increase slightly, very likely, fairly likely, it is right time now), unchanged replies (remain the same, neither the right time nor the wrong time now) and negative replies (much worse, a little worse, fall sharply, fall slightly, not likely, not at all likely, it is not the right time now) indicate the direction of change of a variable (question). The diffusion index is calculated by adding 100 to the weighted percentage shares of the different responses by +1, +0.5, 0, -0.5 and -1, accordingly. The consumer confidence index is calculated by taking averages of the selected diffusion indices. The index describes the respondents' average opinion at any given time. Analysis of the figures as a time series describes the patterns of change in confidence over time.

## 2.5 Consumer Confidence Index

This aggregate index, the CCI, is constructed using a formula based on responses to the following five Consumer Survey questions (Appendix).

1. Compared to the past 6 months, how do you assess your present purchasing power situation? (PPNOW)
2. How do you expect your purchasing power situation to change over the next 6 months? (PP6)
3. How do you expect the general economic situation in Turkey to develop over the next 3 months? (GES3)
4. How do you expect the job opportunities in Turkey to change over the next 6 months? (JO6)
5. Do you think now is the right moment for people to buy durable consumption goods such as refrigerator, TV, furniture, etc.? (DCNOW)

To compute the CCI, first an index for each of the five questions is constructed as "diffusion indices" as described above. The overall CCI is then calculated as an average of diffusion indices for these questions. The index is evaluated between 0 and 200. If it is above 100, it means consumer confidence is optimistic. If it is below 100, consumer confidence is pessimistic. 100 refer to neutral opinion in consumer confidence. There is no base period for confidence indicator calculated in index form.

A change in consumer confidence can be due to many reasons. One view is to investigate changes in the component parts of the index, namely how have consumers' expectations regarding the economic performance, their own financial position and the rating of the present time to buy durables changed respectively. A second view is to analyse the confidence index per income group, work status group, area group, age group, etc. A third method is to interpret if external developments, such as big changes in economic policy, a drop in stock market, unexpected price shifts of important consumer goods (e.g. food, clothing) or political developments may have impacted on consumer confidence.

### 3. Differences in Individual Expectations

Some perspective on expectations' differences can be obtained from analysis of changes over time in individual expectations if there is a panel data available. Although the Consumer Tendency Survey does not sample the same individuals each month, it does sample some individuals twice at three-month intervals. These data enable study of fluctuations in individual expectations. First time respondents are followed up after three months as second time respondents. In other words, their expectations in that month are investigated conditional on what those were at three months ago. Those analyses give ideas about the direction of respondents' expectations whether their views changed positively or negatively or did not change, stayed the same.

It is found that individual expectations do vary to some extent within three months, between interviews. Table 1 to 5 shows transition matrices for average responses to the CCI questions between January 2011 and May 2012. Each matrix presents the probability that a person gives each of the five possible responses in the reinterviews conducted conditional on his response three months earlier (Dominitz & Manski, 2004). All those results are evaluated assuming that there have been no sudden shocks in the general economic course during this period within three months intervals observed.

More than half of the respondents who answer the survey for the second time tend not to change their expectations in great amounts. Generally, in three months interval there has not been any sudden changes in their answers. Theil (1961) suspects that individuals respond "the same" for the most of the time because it is hard to think ever improving or worsening economic conditions (whatever it means for common people) over many years in a single interview. In addition, for the second time tendency could be the same as before. There is no exact answer how common people interpret the economy. What determines their ideas about the economy? Is it the change in growth or any other macroeconomic indicator?

Also at the individual level the decision to spend is governed by multiplicity of factors such as age, income level, home ownership, family status, place of residence, etc. Even though some of these can cancel out in the aggregate, it is known that they have a significant influence on individual decisions. We would expect that people with different demographic attributes have different distributions of expectations. For instance, nonpoor is more volatile than poor. Rich reflect more to the shocks in the economy than poor. This case for Turkish data is to be studied in further research.

Respondents' expectations on present purchasing power situation now and three months later at the second interview are highly accumulated on "remain the same" no matter what expectations (positive, negative, same) they have at the first interview (Table 1, Table 2). This can be due to question wording, interviewer effect or just simply those responds are what they really mean. "Remain the same" for respondent could stand for same answer ("much better", "a little better", "a little worse", "much worse") that respondent have at the first interview. Respondents hosting the second visit of interviewer for the same questionnaire after three months might prefer to be more neutral which actually means that respondents have had neither good nor bad expectations independently from previous participation. At this point, interviewer might need to probe more to solve the misunderstanding if there is. Further investigation with some adhoc surveys would be useful to understand how the respondents interpret and respond the question, what kind of algorithm is constructed finally. According to Houtkoop-Steenstra

and Antaki (1997), interviewers tend to select reasonably more optimistic answer if the respondents are unclear and inconsistent with their answers.

Consumers' spending on durable consumption goods is generally not expected to be as frequent as spending on non-durable consumption goods. Given that, it is reasonable not to observe a big change in expectations for buying durable consumption goods in three months interval (Table 5). 56% of respondents who initially report "right time" for buying durable consumption goods subsequently respond "right time". 44% of those who initially report "neither right nor wrong time" foresee "neither right nor wrong time" at the second interview. 52% of those who first time report "not right time" reply "not right time" at the second time.

**Table 1:** Average Transition Probabilities for CCI Qualitative Expectations for Present Purchasing Power Situation (PPNOW)

<i>Initial Response</i>	<i>Re-Interview Response (3 Months Later)</i>					
	<i>Much Better</i>	<i>A Little Better</i>	<i>Remain the Same</i>	<i>A Little Worse</i>	<i>Much Worse</i>	<i>All</i>
<i>Much Better</i>	0.09	0.27	0.54	0.09	0.00	1.00
<i>A Little Better</i>	0.01	0.31	0.49	0.17	0.02	1.00
<i>Remain the Same</i>	0.01	0.12	0.64	0.22	0.02	1.00
<i>A Little Worse</i>	0.00	0.09	0.44	0.43	0.04	1.00
<i>Much Worse</i>	0.01	0.09	0.38	0.40	0.12	1.00

**Table 2:** Average Transition Probabilities for CCI Qualitative Expectations for Purchasing Power Situation Over Next 6 Months (PP6)

<i>Initial Response</i>	<i>Re-Interview Response (3 Months Later)</i>					
	<i>Much Better</i>	<i>A Little Better</i>	<i>Remain the Same</i>	<i>A Little Worse</i>	<i>Much Worse</i>	<i>All</i>
<i>Much Better</i>	0.11	0.29	0.49	0.12	0.00	1.00
<i>A Little Better</i>	0.02	0.32	0.48	0.16	0.02	1.00
<i>Remain the Same</i>	0.00	0.12	0.66	0.19	0.03	1.00
<i>A Little Worse</i>	0.00	0.09	0.46	0.40	0.04	1.00
<i>Much Worse</i>	0.00	0.09	0.42	0.35	0.14	1.00

**Table 3:** Average Transition Probabilities for CCI Qualitative Expectations for General Economic Situation in Turkey Over Next 3 Months (GES3)

<i>Initial Response</i>	<i>Re-Interview</i>		<i>Response (3 Months Later)</i>			<i>All</i>
	<i>Much Better</i>	<i>A Little Better</i>	<i>Remain the Same</i>	<i>A Little Worse</i>	<i>Much Worse</i>	
<i>Much Better</i>	0.22	0.36	0.28	0.14	0.01	1.00
<i>A Little Better</i>	0.03	0.44	0.35	0.15	0.02	1.00
<i>Remain the Same</i>	0.01	0.19	0.55	0.22	0.04	1.00
<i>A Little Worse</i>	0.01	0.13	0.38	0.43	0.05	1.00
<i>Much Worse</i>	0.01	0.15	0.35	0.35	0.14	1.00

**Table 4:** Average Transition Probabilities for CCI Qualitative Expectations for Present Purchasing Power Situation (PPNOW)

<i>Initial Response</i>	<i>Re-Interview</i>		<i>Response (3 Months Later)</i>			<i>All</i>
	<i>Much Better</i>	<i>A Little Better</i>	<i>Remain the Same</i>	<i>A Little Worse</i>	<i>Much Worse</i>	
<i>Much Better</i>	0.13	0.30	0.28	0.24	0.06	1.00
<i>A Little Better</i>	0.04	0.37	0.31	0.24	0.04	1.00
<i>Remain the Same</i>	0.02	0.19	0.50	0.24	0.05	1.00
<i>A Little Worse</i>	0.02	0.20	0.32	0.41	0.05	1.00
<i>Much Worse</i>	0.01	0.18	0.29	0.34	0.18	1.00

**Table 5:** Average Transition Probabilities for CCI Qualitative Expectations for Present Purchasing Power Situation (PPNOW)

<i>Initial Response</i>	<i>Re-Interview</i>		<i>Response (3 Months Later)</i>	
	<i>Right Time</i>	<i>Neither Right Nor Wrong Time</i>	<i>Wrong Time</i>	<i>All</i>
<i>Right Time</i>	0.56	0.16	0.28	1.00
<i>Neither Right Nor Wrong Time</i>	0.24	0.44	0.32	1.00
<i>Wrong Time</i>	0.29	0.18	0.52	1.00

#### 4. Conclusion

In our time now, there is access to longer time series that facilitates historical comparisons and maintains reliable statistical information. On the other hand, the international harmonization of surveys allows forecasting consumer behavior and cyclical movements which helps cross country comparative research to be conducted. Therefore, building up the survey to construct an index which maintains a good indicator property for one country is a significant first step. At the next stage, further analyses will help to maintain reliability of the index.

This primary research has an initiative role for further studies of CBRT and TurkStat CCI efficiency to hold European Commission quality dimensions. Following this study, some updates for redesigned survey are planned. Questionnaire change, independent survey (not annexed to Labor Force Survey), schedule are some of the changes at redesigned survey. All those are under review during the pilot period which began at the beginning of 2012. After all, those updates are aimed to have positive effects on the survey in the long run.

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## **Appendix**

### **Consumer Survey** Confidence Index Questions

#### PPNOW

Compared to the past 6 months, how do you assess your present purchasing power situation?

1. Much more better
2. A little bit better
3. Remain the same
4. A little bit worse
5. Much more worse
6. No idea

PP6

How do you expect your purchasing power situation to change over the next 6 months?

1. Much more better
2. A little bit better
3. Remain the same
4. A little bit worse
5. Much more worse
6. No idea

GES3

How do you expect the general economic situation in Turkey to develop over the next 3 months?

1. Much more better
2. A little bit better
3. Remain the same
4. A little bit worse
5. Much more worse
6. No idea

JO6

How do you expect the job opportunities in Turkey to change over the next 6 months?

1. Increase sharply
2. Increase slightly
3. Remain the same
4. Fall slightly
5. Fall sharply
6. No idea

DCNOW

Do you think now it is the right moment for people to buy durable consumption goods such as refrigerator, TV, furniture, etc.?

1. Yes, it is the right time now
2. It is neither the right time nor the wrong time
3. No, it is not the right time now
4. No idea

Other Questions in Consumer Survey

-How does the current general economic situation in Turkey at present compared to the past 3 months?

1. Much more better
2. A little bit better
3. Remain the same
4. A little bit worse
5. Much more worse
6. No idea

-How do you expect your spending on semi-durable goods (clothes, shoes, kitchen equipment, etc.) will change over the next 3 months compared to what it was 3 months ago?

1. Increase sharply
2. Increase slightly
3. Remain the same
4. Fall slightly
5. Fall sharply
6. No idea

-How likely are you or your household to buy durable consumption goods like refrigerator, TV, furniture over the next 6 months?

1. Very likely
2. Fairly likely
3. Not likely
4. Not at all likely
5. No idea

-How likely are you or your household to buy a car over the next 6 months?

1. Very likely
2. Fairly likely
3. Not likely
4. Not at all likely
5. No idea

- How likely are you or your household to buy or build a home over the next 12 months?

1. Very likely
2. Fairly likely
3. Not likely
4. Not at all likely
5. No idea

-How likely are you or your household to spend any money on home improvements or renovations (spending on heating system, whitewash, kitchen-bath repairs, etc. except spending on little amount of purchases) over the next 6 months?

1. Very likely
2. Fairly likely
3. Not likely
4. Not at all likely
5. No idea

- How likely are you or your household to borrow money (consumer credits, other borrowings) to finance consumption expenditures over the next 3 months?

1. Very likely
2. Fairly likely
3. Not likely
4. Not at all likely
5. No idea

-In view of the general economic situation, how do you assess saving (TL, foreign currency, gold, deposit, financial investment instruments, etc) time condition?

1. A very good time to save
2. A fairly good time to save
3. Not a good time to save
4. A very bad time to save
5. No idea

-How likely are you to save (TL, foreign currency, gold, deposit, financial investment instruments, etc) over the next 6 months?

1. Very likely
2. Fairly likely
3. Not likely
4. Not at all likely
5. No idea

-In comparison to the realizations, what do you think about the direction of price changes over the next 12 months?

1. Increase more rapidly
2. Increase at the same rate
3. Increase at a slower rate
4. Stay about the same
5. Fall
6. No idea