

# Compilation of Consumer Sentiment Indicators in Korea

Kyung-Sam, Min

Statistics Analysis Division, National Statistical Office

#920 Dunsan-dong, So-gu

302-701 Daejeon, Republic of Korea

[ksmin@nso.go.kr](mailto:ksmin@nso.go.kr)

## 1. Introduction

### Background

1. Korean Economy has had an intensive and rapid growth during the last three decades since 1970. It has experienced six business cycles with an average of 53 months span. It is considered that the momentum of the growth should be the high investment level for economic capacity expansion and an export-oriented growth strategy.

2. Consumption expenditure has been expanded as large as the national income has been increased. But compositions of consumption by expenditure type have changed substantially. For example, expenditure for durable goods and services has increased more than expenditure for non-durable goods. And the ratio of the former raised to 63.2% in 2000 from 31.6% in 1970, while the ratio of the latter fell to 29.6% from 55.5% in 1970. Since the late 1980s, the fluctuation of consumption expenditure has begun to be the important factor of the business cycle, and recently expenditure behavior for durable goods and services has been a factor to decide changes of the domestic demand.

3. After the shock of the 1997 currency crisis, economic agencies including economic policy officers have begun to believe that predicting indicators of consumption expenditure, especially subjective factors such as consumer's expectations, would be necessary for them to understand the business cycle. But at that time, there were only a few coincident indicators such as wholesale and retail sales, the shipment index of consumer goods for domestic demand, etc. Therefore the consumer sentiment survey was designed in Korea in order to acquire information concerned with the consumer sentiment on business conditions and the consumer's consumption

expenditure behavior.

### **Pilot Survey**

4. Korea National Statistical Office (KNSO) had conducted a pilot survey based on approximately 100 telephone interviews with adult residents in September and December 1997. The pilot survey led to a low response ratio and it was believed that the survey would experience a high cost due to such factors as telephone booth establishment.

5. Due to these reasons, the pilot survey was conducted quarterly by face-to-face interviews with adult residents living in urban households through local branch offices in 1998. In December 1998, the survey's periodicity was changed from quarterly to monthly in order to have timeliness of data. After then, the consumer sentiment survey has been conducted officially by KNSO.

## **2. Sample and Survey Methodology**

### **Sample Design**

6. The monthly survey of consumer opinion is based on 2,000 representative households nationally in Korea (covering 7 metropolitan cities and 72 cities in 9 provinces). The sample is designed to have a better assessment of change in attitude and behavior by incorporating a rotating panel sample design. The rotating panel sample design has several distinct advantages over a simple random sample. This design minimizes the respondent's response burden and provides for the regular assessment of change in consumer's attitude and behavior at the aggregate and at the individual level.

7. The respondents chosen in this month are interviewed continuously during a two month period, and then re-interviewed six months later. In other words, the rotating scheme follows a 2-4-2 pattern. According to this scheme, the total sample for any given month survey is normally composed of 50% new respondents, and 50% being interviewed for the second time. In order to incorporate this rotating panel sample design, 6,000 representative households are required. They are chosen randomly from urban residents among 32,580 representative households for Economically Active Population Survey (EAPS).

## **Survey Methodology**

8. A married (ever married) adult man or woman in each chosen household is nominated as the respondent to be interviewed. A respondent is normally interviewed by the face-to-face method. But if this method was not incorporated, the questionnaire would be distributed with its description and then the respondent could complete it at their convenience.

9. Sometimes a chosen household may be moved out in order to live in another district or be exempted for a long period (for example over a week) due to their visiting, traveling, etc. In that case, the household is substituted into another household in the same district.

## **3. Methodology for Compilation of Consumer Sentiment Indicators**

### **3.1 Calculation of Individual Index**

10. An individual index is calculated by the weighted average method of response scores. In the case of the three option multiple-choice of quantitative questions such as savings, debts, 'increased' response is scored by 2, 'remained same' by 1 and 'decreased' by 0. In the case of the five option multiple-choice such as consumption expenditure, purchases for household durables, etc., 'increased significantly' response is scored by 2, 'increased slightly' by 1.5, 'remained same' by 1, 'decreased slightly' by 0.5 and 'decreased significantly' by 0. And in the case of the qualitative questions such as business condition, household living standard, etc., 'improved significantly' response is scored by 2, 'improved slightly' by 1.5, 'remained stable' by 1, 'worsen slightly' by 0.5 and 'worsen significantly' by 0.

11. For example, the individual index for business condition is computed as follows ;

$$X = \frac{\sum_{j=1}^5 w_j f_j}{n} \times 100$$

where  $w_j$  is the weight which represents  $j$ th response's score such as ① improved significantly ( $w_1=2$ ), ② improved slightly ( $w_2=1.5$ ), ③ remained stable ( $w_3=1$ ), ④ worsen slightly ( $w_4=0.5$ ) and ⑤ worsen significantly ( $w_5=0$ ).  $f_j$  is the number of respondents which selected  $j$ th response, and  $n$  is the total number of respondents.

### 3.2 Calculation of Composite Index

12. Individual indexes are compiled for 2 questions related to the consumer's present situation and 5 questions related to consumer expectations such as business conditions, household living standard, consumption expenditure, purchases for household durables and expenditure for culture, recreation and meals outside. And then by an arithmetic mean of these individual indexes, composite indexes i.e. the consumer present situation index and the consumer expectation index are re-calculated.

13. The consumer present situation index (CPSI), which represents consumers' current assessments compared to 6 months ago, is computed as follows ;

$$CPSI = \frac{X_1 + X_2}{2}$$

Individual indexes are derived from the following two questions about past changes.

$X_1$  : Compared to 6 months ago, do you think the present business condition was...?

- ① improved significantly      ② improved slightly      ③ remained stable  
 ④ worsen slightly              ⑤ worsen significantly

$X_2$  : Compared to 6 months ago, do you think your present household living standard became...?

- ① improved significantly      ② improved slightly      ③ remained stable  
 ④ worsen slightly              ⑤ worsen significantly

14. The consumer expectation index (CEI), which represents consumers' future sentiments compared to the present situation, is computed by income groups and by age groups as follows ;

$$CEI = \frac{X_1 + X_2 + X_3 + (X_4 + X_5)/2}{4}$$

Individual indexes are derived from following five questions about past changes.

$X_1$  : In the coming 6 months compared to the present situation, do you think the future business condition will be...?

- ① improved significantly      ② improved slightly      ③ remained stable  
④ worsen slightly              ⑤ worsen significantly

$X_2$  : In the coming 6 months compared to the present situation, do you think your future household living standard will become...?

- ① improved significantly      ② improved slightly      ③ remained stable  
④ worsen slightly              ⑤ worsen significantly

$X_3$  : In the coming 6 months compared to the present situation, do you think the consumption expenditure of your family will be...?

- ① increased significantly      ② increased slightly      ③ remained same  
④ decreased slightly            ⑤ decreased significantly

$X_4$  : In the coming 6 months compared to the present situation, do you think purchases for household durables (Television, refrigerator, washing machine, vehicles, etc) of your family will be...?

- ① increased significantly      ② increased slightly      ③ remained same  
④ decreased slightly            ⑤ decreased significantly

$X_5$  : In the coming 6 months compared to the present situation, do you think expenditure for culture, recreation and meals outside of your family will be...?

- ① increased significantly      ② increased slightly      ③ remained same  
④ decreased slightly            ⑤ decreased significantly

### 3.3 Calculation of Other Indicators

15. Asset assessment indexes are compiled by 4 kinds of asset ; housing, real estates excluding housing, equities and bonds, financial assets excluding equities and bonds. In compiling indexes, respondents who do not own such assets are excluded.

16. The household income index is derived from the following question about past changes compared not to 6 months ago but to 12 months ago, in order to eliminate the strong seasonality of responses.

$X$  : Compared to 12 months ago, do you think your household income was...?

- ① increased significantly      ② increased slightly      ③ remained same

④ decreased slightly

⑤ decreased significantly

## **4. Dissemination and Availability**

### **Dissemination**

17. The report would be pressed and released monthly. The report contains a complete presentation of the survey results and includes an overview of the main results and main features. Contents in the report are as follows ;

- Summary
- Consumer expectation index attached with 5 individual indexes
- Consumer expectation index by 6 income groups and by 5 age groups
- Consumer present situation index attached with 2 individual indexes
- Asset assessment indexes by 4 kinds of asset
- Household income index
- Survey description
- Statistics

18. The report should be released at noon 12:00 on the date nominated, which would usually be the third Tuesday after the survey completed. Because one week would be required for coding of responses, and another week would be need to aggregate individual data and to compile indicators. The monthly report and release schedule are available at <http://www.nso.go.kr>.

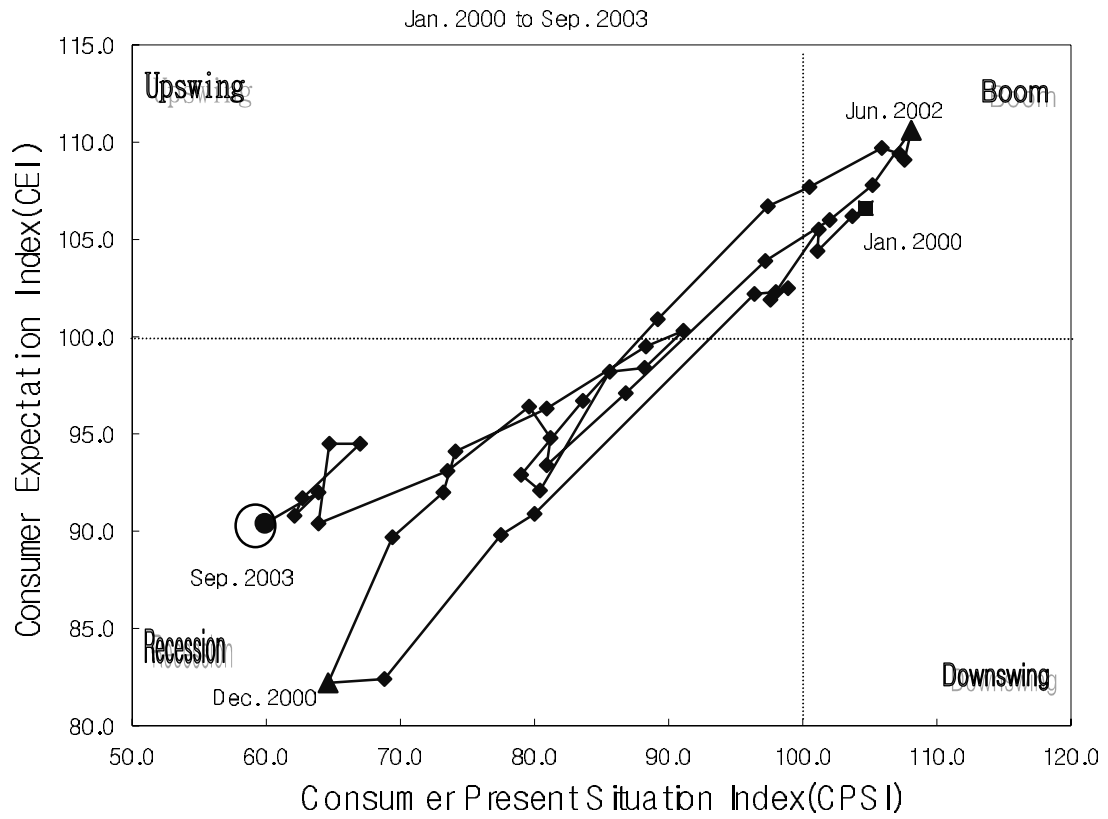
### **Availability**

19. These consumer sentiment indicators are used for short-term indicators, which could monitor not only the trend of consumption expenditure and consumer's behaviors but also measure uncertainty of consuming. On the other hand, they would be used as predicting indicators to forecast consumers' consumption patterns in the time series models. In those models, cycles of consumer sentiment indicators would be analyzed with cycles of real economic indicators such as wholesale and retail sales index, service business activity index, etc.

20. By plotting the XY graph between the present index and the future index, we can observe the characteristics of a business cycle at a glance. For example, Figure 1

indicates the XY graph between the consumer present situation index (CPSI) and the consumer expectation index (CEI) from January 2000 to September 2003 in Korea. It shows easily which situation the business cycle, in aspects of the consumer sentiment, should be located in.

Figure 1 : XY Graph of CPSI and CEI



Key words : sample design, composite index, XY graph