

# *The Finnish Consumer Survey*

## *1. Introduction*

Statistics Finland introduced the Consumer Barometer (later better known as the Consumer Survey) in November 1987. Until 1991, data were collected twice a year, and from 1992 on quarterly. And finally, from October 1995, data have been collected monthly in accordance with the harmonised EU data collection method (European Commission 1997).

The experience so far is that the more frequent data collection has helped to improve the adequacy and timeliness of information on consumer attitudes. At the same time, a great deal of effort has been put into improving technical data processing so as to speed up publication.

Many international studies have shown that consumer survey data can provide a fairly accurate prediction of consumers' economic behaviour. For analysts and market researchers, the data serve as an important indicator for forecasting household consumption expenditure, consumer behaviour in general and the country's economic situation. The data are also used in political decision making.

## *2. Sample design and data collection*

Until December 1999, the data for the Consumer Survey were collected together with the data of the Labour Force Survey. Six rotating panels were then used in the Consumer Survey. The same person was asked the same questions three separate times at six-month intervals, and each month a third of target persons were new. Statistics Finland's field interviewers conducted the telephone interviews around the country.

From January 2000 on, the Consumer Survey has a totally new individual sample each month. The same sample is used for the data collection of the Finnish Travel Survey and some other surveys, as well. All the interviews are now conducted centrally from Statistics Finland's CATI Centre, by about 35 interviewers. The target area is still the whole country, and the respondents represent the 15 to 74-year-old population in Finland, according to age, gender, province, and native language. The change in the data collection method had some effect on the results and non-response of the survey (Kangassalo and Heiskanen 2001, Kangassalo and Notkola 2002).

The gross sample size of the Consumer Survey is 2,200 persons monthly. Systematic random sampling is used to extract the sample from the updated Central Population Register. The sorting system of the sampling frame is based on geographical population density. Our analyses indicate that the sampling method can be compared to the use of simple random sampling with the addition that the sample is geographically self-weighting. Non-response being nowadays as high as 25 per

cent, a little more than 1,600 persons respond to the survey each month. At this moment, more effort than usual is made to diminish the non-response of the survey (Figure 1 in Annex).

Before starting the interviews, the interviewers of the CATI Centre were trained with the help of lectures concerning interviewing technique and the contents of the Consumer Survey, and by going through the survey questionnaire. Newly recruited interviewers are always first trained separately. As a support for their work, the interviewers have an instruction leaflet of the survey and on-line instructions are available as well. Furthermore, whenever they have a problem, interviewers can contact the CATI Centre supervisors and the researchers of the Consumer Survey. When needed, meetings are arranged and further instructions are given. Occasionally, interviewers provide feedback on different items, which is useful for ongoing work to improve the questionnaire.

A couple of weeks before the contact by phone, Statistics Finland sends out a target letter to each interviewee, telling him or her briefly the contents and the meaning of the survey. The phone numbers are mainly searched by means of a special paid service provided by the Helsinki Phone Company, but the interviewers complete it finally. Generally, less than 10 per cent of the phone numbers remain unknown. Visits are not made from the CATI Centre (due to costs), even in case of households without a telephone (number). In the target letter, those households are kindly asked to contact Statistics Finland themselves.

The schedule for the harmonised EU data collection is very tight. The interviews begin on the first working day of each month, and they take approximately two to three weeks. The completed Blaise material is checked, edited and weighted immediately by means of SAS software. The results are sent off to the EU Commission by e-mail no later than about a week before the end of the survey month. Statistics Finland prints and publishes the results in Finland on the last working day of the survey month. The process thus continues uninterrupted: new interviews are getting started as the results of the previous survey are being published.

Other stages of the Consumer Survey, i.e. sampling, questionnaire planning, further processing of data, analysis and reporting, preparation of documents, information service and marketing, involve two full-time and about five part-time employees.

### 3. Survey contents

The following 17 EU harmonised questions are included in the Consumer Survey each month (approximate translations from Finnish):

1. What is your present economic situation like compared to 12 months ago?
2. What will your own economic situation be like in 12 months' time compared to present?
3. What is Finland's present economic situation like compared to 12 months ago?
4. What will Finland's economic situation be like in 12 months' time compared to present?
5. What are the consumer prices like now compared to 12 months ago?
6. By how many per cent have the consumer prices changed during the last 12 months?
7. How will consumer prices change within the next 12 months?
8. By how many per cent will the consumer prices change during the next 12 months?
9. What will be the number of the unemployed in Finland in 12 months' time compared to present?
10. Is it now a favourable or unfavourable time to purchase consumer durables?

11. Are you going to spend more or less money on consumer durables over the next 12 months compared to the last 12 months?
12. Is this a favourable time to save money?
13. How likely are you to be able to save money within the next 12 months?
14. What is your present financial situation?
15. How likely is your household to purchase a car within the next 12 months (formerly 24 months)?
16. Is your household going to purchase or build a dwelling within the next 12 months (formerly 24 months)?
17. How likely is your household to spend a large amount of money on basic repairs to your dwelling in the next 12 months?

Besides the EU harmonised questions, some Statistics Finland's own questions are made monthly. They are the following:

1. Are you planning to buy a new or used car?
2. How are you going to finance the purchase of the car (two main modes of financing)?
3. How are you going to finance the purchase of the dwelling (two main modes of financing)?
4. Are you going to use money on the following items within the next 6 months: dwelling repair and maintenance, home furnishing, holiday home, entertainment electronics, household appliances, hobby and sports equipment, vehicles (excl. car), holiday travel in Finland, holiday travel abroad?
5. For what purpose are you saving money?
6. How are you going to invest your savings?
7. Is this a favourable time to raise a loan?
8. Are you planning to raise a loan during the next 12 months?
9. For which purpose are you going to raise a loan?
10. How likely are you to be thrown into unemployment within the next 12 months?
11. Which of the following equipment does your household have (25 equipment: entertainment electronics, information technology, telephones, car)?
12. How have you invested your savings (at the moment of the interview)?

Classification items, which characterise the respondent and his or her household, are also included in the questionnaire:

1. How many members belong to your household?
2. How many adults/children (4 age groups) are there in your household?
3. How many of the members of your household go to work regularly?
4. Which is your municipality of domicile at present?
5. What is your primary activity at present?
6. What is your occupation?
7. Have you had occupational training for your (present) job?
8. What is the gross income of your household?

The basic information of the respondent, e.g. age, gender and sample municipality, are always found in the original sampling data. In addition, each person's education code is drawn from the Register of Completed Education and Degrees. Different regional classifications can be formed with the help of the municipality code.

#### *4. Weighting and estimation of the results*

All the results of the Consumer Survey are weighted against the total population by means of sample weights. Weighting improves the accuracy of the data. The weights are established by using the probability of each observation to be included in the sample.

Most of the indicators of the Consumer Survey describe individuals. The results for these indicators are always estimated by means of individual weights. Individual weights are computed by CALMAR software, so that the estimated marginal distributions of certain background variables (region, person's age group and gender) correspond to the marginal distributions in the whole population, i.e. the population structure. The weights are formed as a ratio between the estimated frequencies in population cells and the known sample frequencies. Small or even zero cell frequencies are disregarded in this procedure. Thus, the method can be considered an "incomplete post-stratification". The weights are obtained more or less automatically by SAS programs used in processing the results.

However, some of the items of the Consumer Survey measure household behaviour and sentiment, e.g. the financial situation of the household, possession of equipment, intentions to purchase consumer durables, save money and raise a loan. For the estimation of these results, weights are also calculated for households. Benchmarking is made with reference to Statistics Finland's income distribution statistics. The actual weights are obtained by post-stratification and finally by calibrating (region and number of household members in different age groups as background variables).

Weighting generally has only a minor effect on the actual values of the sentiment scales. There are several reasons for this. Firstly, the sample design (systematic random sampling) produces a self-weighting sample. Secondly, non-response has been relatively constant in different population groups and has therefore not caused very much bias in the material. And thirdly, questions concerning opinions and the extracted indicators have shown only a weak correlation with the variables used in weighting. Opinions tend to vary quite considerably in different population groups. However, regarding household data there appear more obvious differences between weighted and non-weighted results.

## 5. Analysis and presentation of the data

In most Survey items consumers are presented with a choice of five alternative responses (++, +, =, -, --). In opinion items a characteristic value index (or balance figure) is derived from the percentage distribution of the responses. The balance figure is calculated by weighting the percentage shares of the different responses by +1, +0,5, 0, -0,5 and -1, accordingly. The figure describes the respondents' average opinion at any given time. Analysis of the balance figures as a time series describes the patterns of change in sentiment over time. The arithmetic mean of the four most important balance figures (EU harmonised questions 2, 4, 9 and 13 above) is called the Consumer Confidence Indicator (CCI).

Consumption, saving and borrowing intentions are measured by summing up the percentages of households intending certainly or possibly to buy, save or borrow money within a certain space of time. The absolute number of households "intending" (e.g. to buy a new car, to save money for a new house, to raise a loan) can be calculated from the data on the percentages and total numbers of households. Analysis of time series will show the patterns of change in intentions over time.

Cross-tabulation of the results with classification data provides more detailed information on sentiments and intentions in different types of households. Thus, variation in the CCI can be studied by the respondent's age, gender or occupation. Data are also obtained on how intentions to buy a dwelling vary by the size or structure of the household, incomes or place of residence.

The Consumer Survey also measures consumers' knowledge of prices. The respondents are asked how much they think consumer prices have changed during the past 12 months and how much they expect the prices to change over the next 12 months

to the nearest decimal. The mean of consumer estimates is calculated. Only estimates with an absolute value less than 15 per cent are included in the calculations.

Finally, possession of different equipment in households is also measured with the Consumer Survey. These results are published as percentages of households.

## 6. Dissemination of the results

Statistics Finland publishes the results of the Consumer Survey in the series “Income and Consumption” (also in electronic pdf-format):

1. Monthly Statistics, which give the main results within 2 weeks of the interviews.
2. Table Publication, which provides more detailed information on the breakdowns of responses according to different background variables; published monthly.
3. Quarterly NUTS 3 Regional Overviews, which discuss the main regional results and give the most important variables in graphic format.
4. Sometimes publications concerning some interesting events are published, e.g. constituency barometers in spring 1999.

Press releases are always issued in connection with the monthly and quarterly statistics; they are sent out to 50 television and radio stations as well as to 450 newspapers and magazines and also through the Internet. Press conferences are also arranged from time to time. The Consumer Survey receives good coverage in the mass media. In the print press, for instance, the Consumer Survey ranks among Statistics Finland’s top products in terms of media coverage. Business and financial correspondents are often provided additional information if they intend to write a longer piece on the results.

Television and radio newsrooms, both national and local, regard the Consumer Survey as a good, newsworthy item. The Survey statisticians are interviewed by the electronic media 10 to 20 times a year. The interest of local radio stations has no doubt grown with the increasing availability of regional information.

Since 1996 the main data sets from the Consumer Survey have been entered into Statistics Finland’s on-line time series database, which comprises a wide range of statistics from different sectors of the economy (including the National Accounts time series). Major user groups are research institutes and other organisations that monitor the national economy. They thus have access through the same source to monthly data on consumer sentiment and intentions.

The Consumer Survey provides important information for use in many sectors of society. Consumer expectations and intentions are a matter of considerable interest to the authorities responsible for economic policy, to trade and industry organisations, research institutes and many others. Universities, other educational institutions and libraries frequently use the Consumer Survey as reference material. Financial institutions, banking houses and many others are interested in following consumers’ saving and borrowing intentions as well as their interest in the stock market. The advertising sector, trade and industry organisations, federations of estate agents, car dealers, domestic appliance retailers and so on, as well as individual companies are keen to follow changes in demand in their respective fields on the basis of the Survey. The information they need is usually to be found in the statistical publications or in standard printouts not included in these publications. Often, to meet individual information needs, Statistics Finland is requested to supply tailored products.

Companies, educational institutions or trade and industry organisations may also approach experts to deliver a lecture on a certain subject. For this purpose the lec-

turer will need to have a package of pre-digested information that meets the customer's individual needs.

## 7. Reliability of consumer survey data

Assessment of the reliability of sentiment indicators is no easy task. Researchers at various conferences have debated their relevance, although there is, of course, a broad consensus regarding the importance of information about expectations in general. In any event, consumer sentiment indicators have long been integrated in many leading instruments (e.g. the University of Michigan Index of Consumer Sentiment).

In the data obtained by a sample survey there always appears statistical inaccuracy that can, however, be diminished afterwards by weighting (see above Section 4).

Consumer confidence is widely used in Finland for forecasting consumer behaviour. The CCI, especially its micro components have shown a strong correlation with changes in private consumption. Furthermore, the CCI has shown predictive power over the changes in gross domestic product (GDP). Direct questions on purchasing, saving and borrowing intentions have also provided a reliable measure of households' actual investment decisions. Consumers' estimates and expectations on inflation have proved to be quite accurate. (See Figures 2-7 in Annex.)

Some evaluations have been made to test the reliability of the Consumer Survey in Finland. In the initial stages of the survey in 1989 and 1990, accuracy comparisons of certain items on purchasing intentions against macro-economic indicators were carried out. The accuracy of inflation forecasts has been tested at the Bank of Finland a few times (last by Kangassalo & Takala 2003). In the 1997 CIRET conference, Djerf and Takala (1997) presented a comprehensive reliability study concerning the indicators of the Consumer Survey. In the near future, the usefulness of consumers' expectations concerning unemployment will be studied.

After the introduction of the centralised data collection method, Kangassalo and Notkola (2002) have analysed the structure of non-response between the old and the new method. Further work has been done for testing the effects of the changeover to the centralised data collection (Kangassalo & Heiskanen 2001).

## 8. Concluding remarks

In Finland consumer (barometer) surveys are widely recognised as an important tool for forecasting consumer behaviour as well as cyclical movements. Several factors lie behind the growing use of and demand for barometer materials. Firstly, the availability of longer time series has provided a more solid basis for historical comparisons and made it possible to ascertain the reliability of this kind of information. Secondly, the international harmonisation of barometer surveys, publishing the results on the Internet<sup>1</sup>, improved publications and the higher frequency of surveys have all increased the use of qualitative data.

The increasing demand is no doubt also an indication of growing user satisfaction. Consumer surveys provide a useful addition to the supply of traditional quantitative statistics. Certain structural changes in the demand for statistical data (such as the ever-stricter demands on timeliness) have increased the use of qualitative data.

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<sup>1</sup> EU results monthly on:

[http://europa.eu.int/comm/economy\\_finance/indicators/businessandconsumersurveys\\_en.htm](http://europa.eu.int/comm/economy_finance/indicators/businessandconsumersurveys_en.htm)

In general, consumer expectation and sentiment factors have become increasingly important determinants of economic development. It is not possible to define or measure accurately the confidence or sentiment of consumers. However, the barometer technique has certainly demonstrated its capability to provide a reasonable approximation of these expectation factors.

Finland's experiences of consumer surveys are consistent with experiences elsewhere: this is a tool capable of tracing and forecasting all major cyclical movements in output and consumption, as well as most minor cyclical ones.

## References

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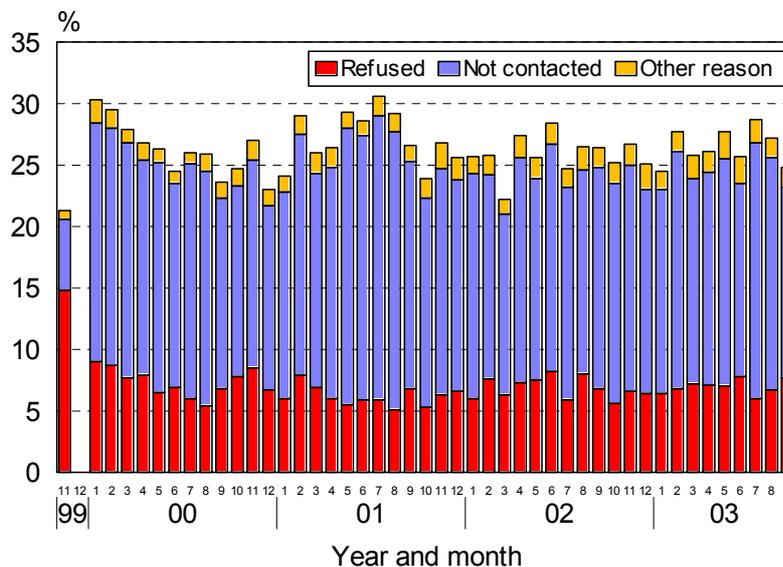
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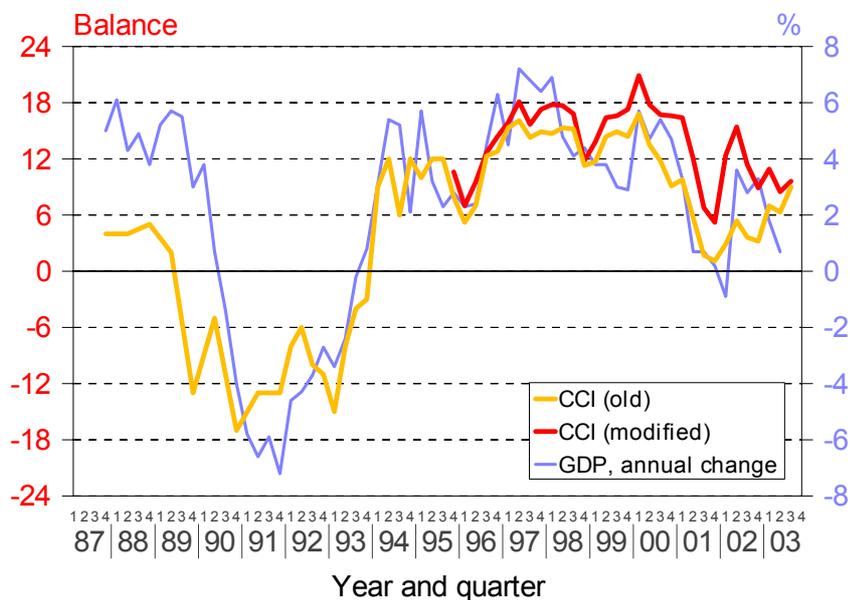
Annex

Figure 1. Non-response in the Finnish Consumer Survey\*



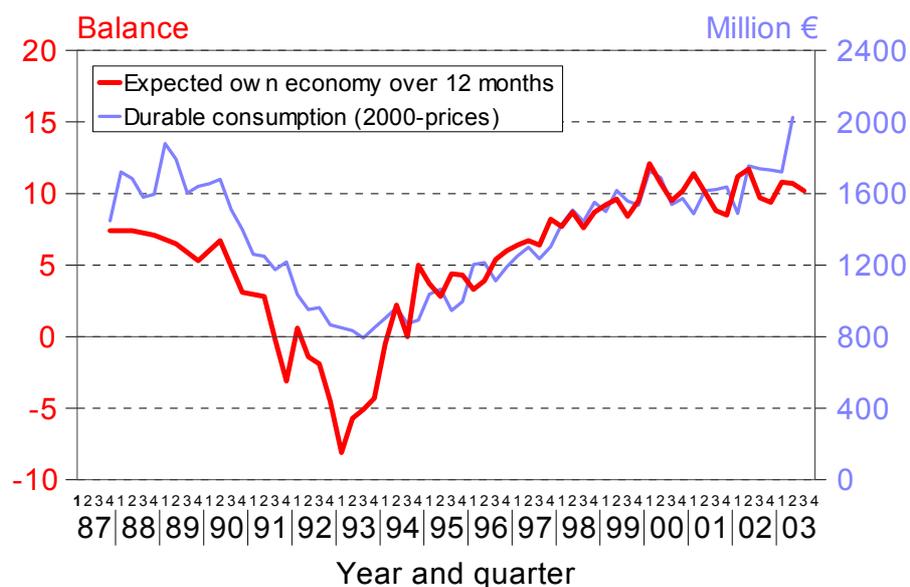
\*11/1999 with the LFS (panel)

Figure 2. GDP growth and consumer confidence indicator in Finland



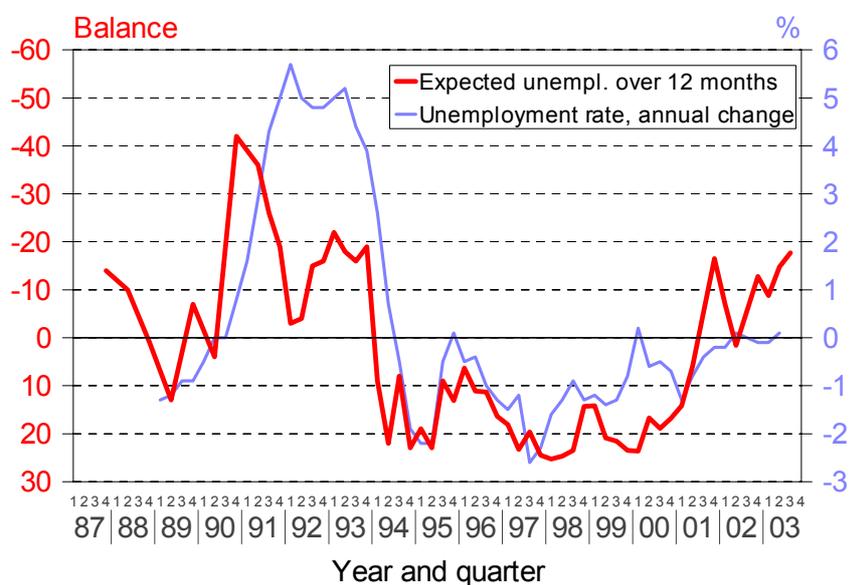
Source: Statistics Finland/Economic Indicators

**Figure 3. Durable consumption and consumers' expectations on own economic situation in Finland**



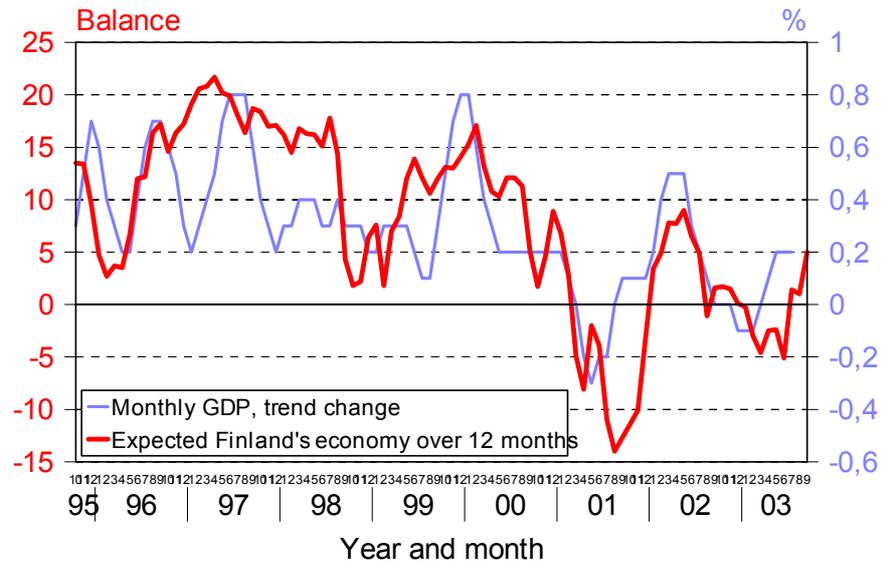
Source: Statistics Finland/Economic Indicators

**Figure 4. Change in unemployment rate and consumers' expectations on unemployment in Finland**



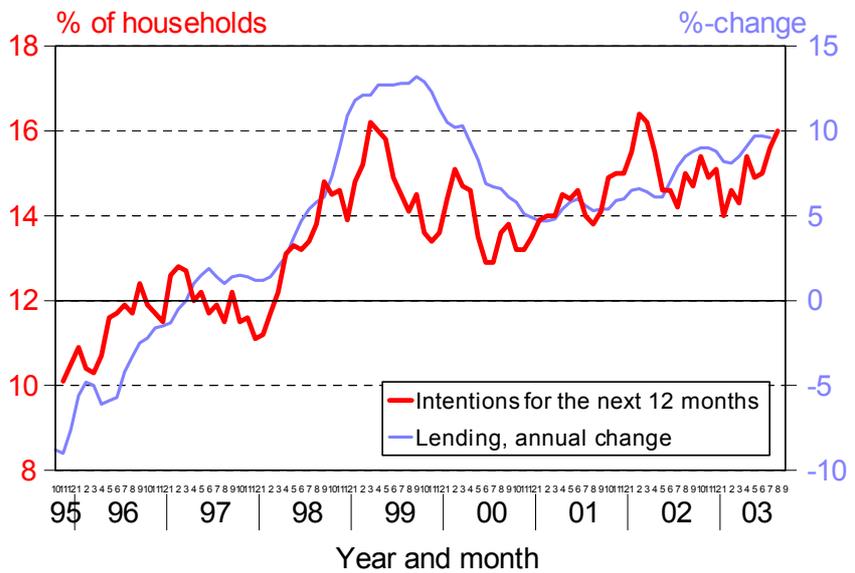
Source: Statistics Finland/Consumer Survey and LFS

**Figure 5. Change in monthly GDP and consumers' expectations on general economic situation in Finland**



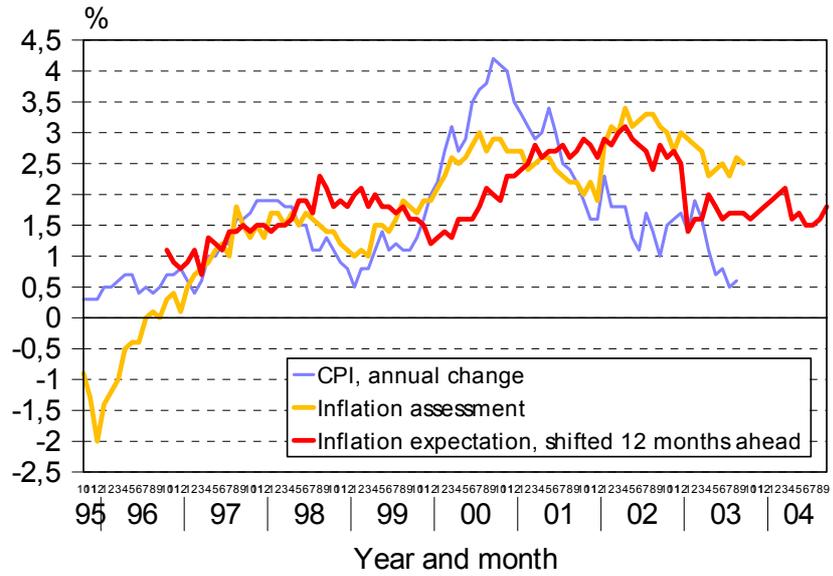
Source: Statistics Finland/Economic Indicators

**Figure 6. Change in lending and households' intentions to raise a loan in Finland**



Source: Statistics Finland/Consumer Survey, Bank of Finland

**Figure 7. Actual inflation and consumers' assessments and expectations concerning inflation in Finland**



Source: Statistics Finland/Consumer Survey and CPI