

## **BAROMETER SURVEY FOR THE ECONOMIC OUTLOOK OF THE FINNISH FISHERY ENTERPRISES**

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### **ABSTRACT**

Fishery barometer surveys economic prospects and trends of fishery enterprises in Finland. The enterprises are divided into fishing, aquaculture, processing and the wholesale or retail trade. Since year 2000 the enterprises have been asked to evaluate their economic parameters, such as financial standing, turnover and investments. The present situation is compared with the previous 12 months and with expectations for the coming 12 months. The aim is to collect data that are reliable and comparable in the long term. The survey population consists of all fishery sector enterprises on the register of Statistics Finland, i.e. 850-1000 firms every year. The net sample has been 300-400 and the response rate about 80%. The sample has been allocated to fixed quotas to ensure enough observations of all strata. The development and relevance of the barometer are discussed more closely in the paper.

**Keywords:** business survey, fishery enterprises, economic prospects and trends

### **INTRODUCTION**

Business surveys are a widely used method to gather opinions on economic fluctuations and outlook. Surveys are periodically addressed to samples of economic actors, who are asked to estimate relatively changes and expectations for the future of economic parameters related to their business. In Europe, the business surveys are conducted within the framework of the Joint Harmonised EU Programme that covers most economic sectors (European Commission 1997).

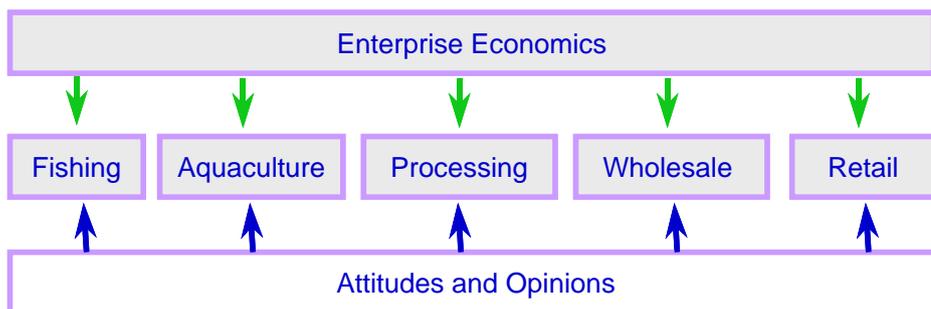
The results of the business surveys are often expressed for different business sectors. Despite the segmentation according to sectors, the opinions of the fishery industry can seldom be separately found in the survey results. This can assuredly be explained by the fact that the economic share of fishery is proportionally low in many nations. However, information on fishery enterprises' perceptions is of importance for policy makers. This is well emphasized in the European Union countries, where fishery is covered by the common fisheries policy.

The study examines the economic prospects and trends of fishery enterprises in the years 2000-2008 in Finland. Enterprises were asked to evaluate some of their economic parameters. The present situation was compared with the previous 12-month period and with expectations for the coming 12-month period. The survey was targeted at the entire chain of supply and demand in fisheries. Enterprises were divided into fishing, aquaculture, processing and the wholesale or retail trade. The data are based on a sample comprising 330 enterprises. In this paper, the results are presented as an indicators based on questions concerning overall financial standing, turnover and investments of the enterprises.

A specialized fishery business survey was developed on the basis of the general business survey questions (e.g. European Commission 1997). A tailored survey was assumed to fit better with the respondents' preconditions to answer to the questions. For instance, questions on inventory changes or volume of

orders that are included in the general business surveys are not economic key questions for primary production in fishery, i.e. fishing and aquaculture.

The fishery business survey is part of a more extensive fishery barometer survey of the views of both enterprises and consumers on the current situation in fisheries, and on fish products and expectations regarding them. A barometer survey aims to collect data that are reliable and comparable in the long term. The full analysis frame of regular follow-up data collection is presented at Fig. 1.



**Figure 1. The analysis frame of follow-up data collection. The shaded topic is discussed in this paper.**

## MATERIAL AND METHODS

### Survey population and sample

The regular follow-up data have been collected once a year since 2000. The survey population for enterprises consisted of all those fisheries sector enterprises on the business register of Statistics Finland at the beginning of every collection year whose annual turnover exceeded €8300. A turnover limit of 168 067 € was used to classify enterprises to small and large. In follow-up years, the survey population has been varied between 806 and 1074 companies and the sample size has been 350-430 annually. Companies with ceased operations or that could not be contacted have been removed from the sample as over coverage.

For instance in 2008, the survey population comprised a total of 1030 firms and entrepreneurs. The sample size was 430. The final net sample thus included 391 enterprises, of which 72.1 % took part in the interviews (Table I).

### Data collection and Interviews

The barometer survey was preceded by a pilot study in which the indicators and the data collection system were tested in cooperation with Statistics Finland (Honkanen and Ahvonen 2001, Ahvonen and Honkanen 2001). The indicators were planned making use of the survey laboratory of Statistics Finland, in which a test group assessed the content, intelligibility and interpretability of the form with a cognitive pre-test (cf. Sudman et al. 1996, Willis et al. 1999, Tourangeau et al. 2000, Olsen 2002). Validity analysis for some of the question attributes was performed too (Godenhjelm et. al. 2004). The fishery enterprises in the survey population were stratified into five fisheries sectors (fishing, aquaculture, processing,

wholesaling, retailing) and two turnover classes. The sample was allocated to fixed quotas to give a sufficient number of observations of all strata.

The formulation and content of the interview questions followed the general practices of enterprise surveys (e.g., European Commission 1997). The topics were the financial standing of the enterprise, sales and mean prices of the main fish products, the quantity and price of exports, production costs, total turnover, number of employees, volume of investments and amount of trade subsidies. Enterprises were asked to assess trends in the above topics during the past 12 months and their expectations for the coming 12 months. Entrepreneurs were interviewed by the computer-aided telephone interview system (CATI) of Statistics Finland once a year in February since 2000. Enterprises included in the sample were informed beforehand by letter about the interview and its content.

**Table I. Minimum and maximum values of survey population, sample size, non-response and response rates in survey period 2000-2008.**

	Enterprises	
	N (min-max)	% (min - max)
Survey population	841 - 1074	100.0
Sample	350 - 430	32.6 – 53.3
Over-coverage	19 – 51	9.5 – 14.6
Net sample	299 – 411	100.0
Non-response	41 – 109	12.2 – 27.9
- no contact	2 – 25	0.5 – 6.0
- refusal	8 – 42	2.7 – 11.0
- other reason	11 – 46	3.7 – 11.8
Response	256 - 326	72.1 – 87.8

### Processing of data

The results for enterprises and consumers were estimated to correspond to the survey population by weighting all the measuring data by the stratum-specific sampling fractions and response probability (non-response) at unit level. The enterprises were calibrated on the basis of their turnover (Deville et al. 1993).

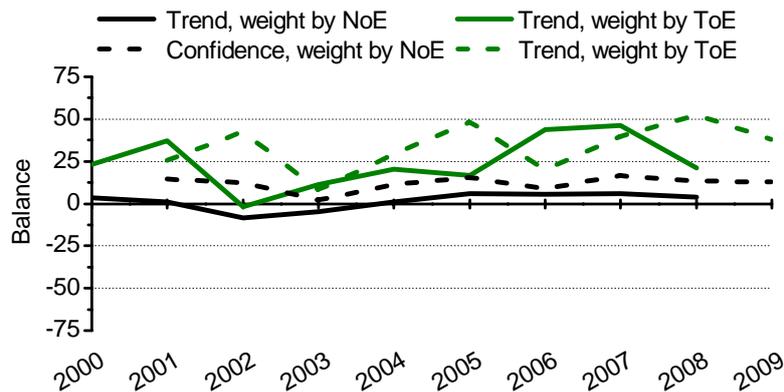
The results are presented as balance figures that basically show the weighted difference between positive and negative percentages. Balance figures were formed from percentages of responses. These were obtained by summing the weighted response percentages using the methods generally applied in surveys (e.g. European Commission 1997). To summarize the enterprise economics, the results are presented also as indicators that are loaded with certain questions (Ahvonen and Honkanen 2003, Honkanen and Ahvonen 2004). Trend indicator describes the development for the past 12-month period and confidence indicator describes the expectations for the coming 12 months. Trend and confidence indicators describing the overall economic trend and expectations of enterprises were calculated from the means of balance figures of questions concerning financial standing, turnover and investments of the enterprises. In

the Figures, the trend and confidence indicators are shown weighted by the number of enterprises (NoE) in the survey population and by turnover of enterprises (ToE).

In the regional presentations, the country was divided into southern-western (SW) and northern-eastern (NE) Finland. The former comprises the provinces of Southern and Western Finland, including Åland, the latter the provinces of Eastern Finland, Oulu and Lapland. Of the interviewed enterprises included in the sample, 65 % were located in southern-western Finland and 35 % in northern-eastern Finland.

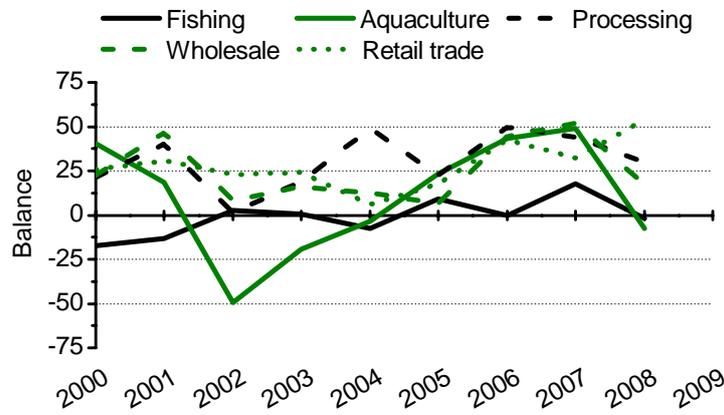
## RESULTS IN RECENT YEARS

Compared to results weighted by number of enterprises, both trend and confidence indicators weighted by turnover of enterprises gave a more positive sign of trade development in all follow up years. This indicates that trade development has been more favorable for large enterprises than for small ones. The positive trend detected in 2006-2007 in the fishery industry showed some signs of weakening (Fig. 2.).

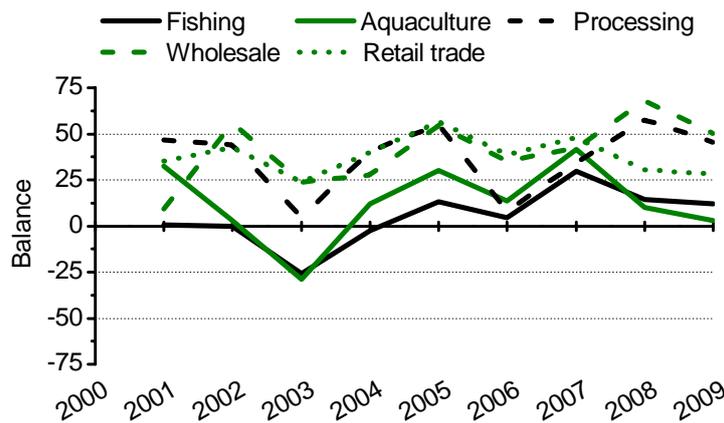


**Figure 2. The trend and confidence indicators for commercial fishery weighted by number of enterprises (NoE) and turnover of enterprises (ToE).**

In year 2008 the sectors of fishing and aquaculture were not developed as well as in previous years. Instead of that, the sectors of processing, wholesale and retail indicated positive trends in the last 12 months, as the trend indicator indicates (fig 2). Similar development can be seen also in confidence indicator that indicates the sentiments for the coming 12 months. In the sectors of fishing and aquaculture, the confidence indicator has been close to neutral nearly all survey period. Instead of that, in the sectors of processing, wholesale and retail trade the alterations in sentiments have been in wider scale. Despite these fluctuations, in all sectors the trend and confidence indicators have been quite similar to each other during the follow-up period, except for fishing in season 2002-2003 (Fig. 3. and 4.). In the survey years, a unifying term for all sectors has been the rise of costs. These observations confirm the two fold nature of fisheries livelihood in Finland; the market can be divided both to primary production including fishing and aquaculture and secondary production consisting of processing, wholesale and retail trade.



**Figure 3. The trend indicator for commercial fishery by sectors, weighted by the turnover of the enterprises (ToE).**

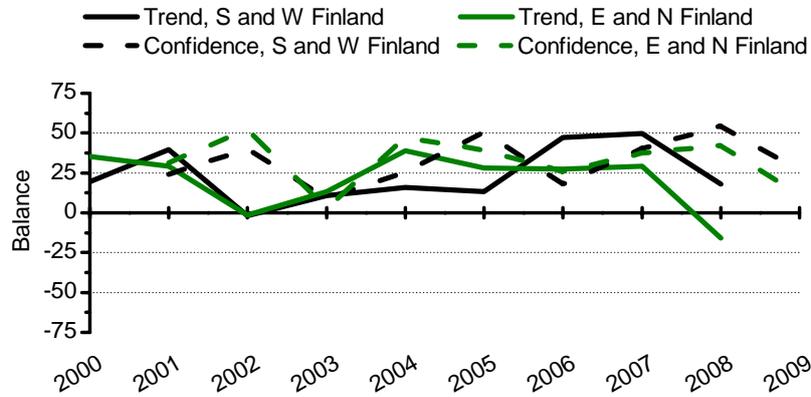


**Figure 4. The confidence indicator for commercial fishery by sectors, weighted by the turnover of the enterprises (ToE).**

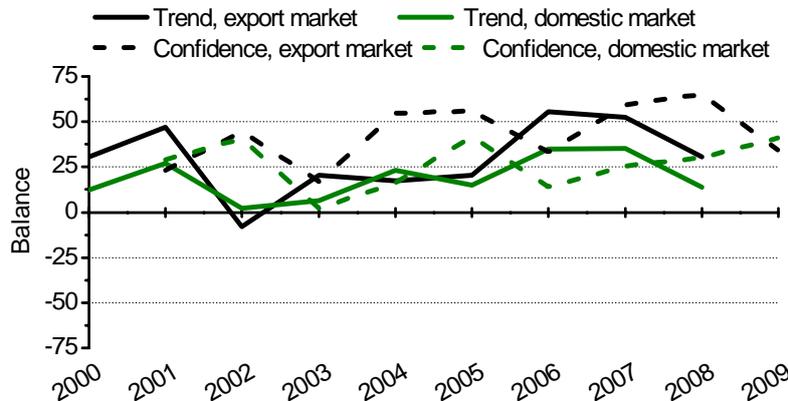
In the regional analysis (weighted by ToE), there has not been significant differences in trend and confidence estimations between Southern-Western and Eastern-Northern Finland. Recently enterprises in SW Finland have been more optimistic about the trend in their financial standing than enterprises in NE Finland. Future expectations tended to be also slightly more positive in Southern and Western than in Eastern and Northern Finland (Fig. 5.).

Similarity of trends and confidences in export and domestic market is considerable. Over the survey period, the balance values of confidence indicator have been higher than the values of trend indicator for export market. In February 2008 the overall financial standing of export and home-market companies had

improved during the previous 12 months. Export companies strongly believed that the favourable trend would continue during the coming 12 months (Fig. 6.).



**Figure 5. Trend and confidence indicator weighted by turnover of the enterprises (ToE) for different regions.**



**Figure 6. The trend and confidence indicator weighted by turnover of the enterprises (ToE) for export and domestic market.**

## DISCUSSION

In the fishery business survey a special attention has been paid to ensure the reliability of the results and the validity of the measurements. Use was made of the information on the structure of the survey population (e.g. turnover of enterprises) to plan the sampling and fixing of quotas appropriately. Coverage error was reduced by removing the over-coverage from the sample in conjunction with the interview. It

has not been possible to estimate the under-coverage for enterprises, but new enterprises at least have not been on the register.

The non-response rate was low compared with interviews in general. On the other hand the bias caused by non-response could be reduced with the methods applied, i.e. stratification and calibration. The amount of the sampling error was estimated by calculating 95% confidence intervals for the individual questions. The confidence intervals for the whole enterprise data were about  $\pm 5$  percentage points, depending on the question and response frequencies of different options. Still, the unavoidable problem of small sample in sector specific analysis may cause unpredictable fluctuations to time series. Especially this can be emphasized in sectors with less than twenty respondents, like in sector of large processing enterprises.

Business surveys generally measure change. Of importance are not the individual results but the changes occurring between the measuring times. The present results are based on a nine measuring time, which sets limits on the interpretation in terms of time or, in terms of correlation with external economic data (Ahvonen et. al. 2007). Note, too, that although business and consumer surveys are widely used to study the expectations of social phenomena, they are not prognoses as such but rather tools that help us estimate trends. In this context, the Finnish fishery barometer has to be seen as a foreseeing tool for sentiments and alterations occurring in fisheries livelihood.

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