

**ECONOMIC OUTLOOK OF FINNISH FISHERY ENTERPRISES IN 2000-2004**

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**ABSTRACT**

The study examines the economic prospects and trends of fishery enterprises in the years 2000-2004 in Finland. At the beginning of every year, the enterprises were asked to evaluate some of their economic parameters, such as financial standing, turnover and investments. The present situation was compared with the previous 12-month period and with expectations for the coming 12-month period. The enterprises were divided into fishing, aquaculture, processing and the wholesale or retail trade, i.e. into the whole production-processing-commerce chain of fishery. This specialized fishery business barometer survey was developed on the basis of the general business survey questions. The survey population for enterprises consists of all fisheries sector enterprises on the business register of Statistics Finland whose annual turnover exceeded € 8300. Thus the survey population comprised a total of about 1000 firms and entrepreneurs every year. The final net sample included about 330 enterprises, of which about 80 % took part in the interviews. The sample was allocated to fixed quotas to ensure a sufficient number of observations of all strata. The major findings concerning the different fishery sectors 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 2000-2004 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 specialised 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 (Ahvonen and Honkanen 2003, Honkanen and Ahvonen 2003). 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 Figure 1.

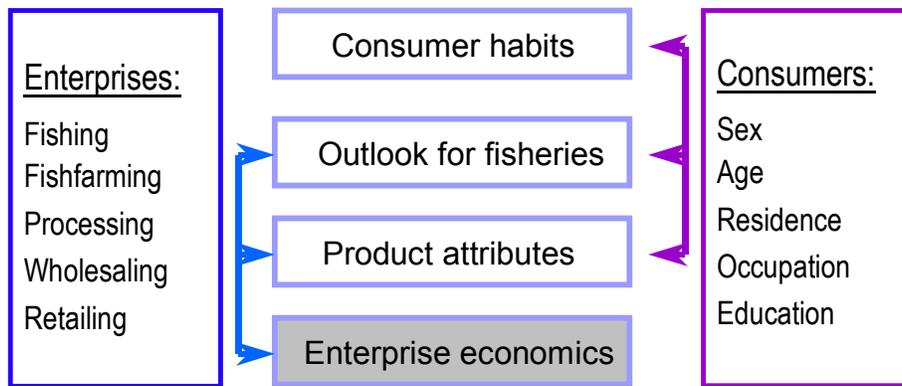


Figure 1. The analysis frame of follow-up data collection. The shaded topic is discussed in this paper

## 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. For instance in 2004, the survey population comprised a total of 918 firms and entrepreneurs. The sample size was 350. The firms that had ceased operations or that could not be contacted were removed from the sample as over-coverage. The final net sample thus included 330 enterprises, of which 82.1 % took part in the interviews. (Table 1).

**Table 1. Survey population, sample size, non-response and response rates in 2004**

	Enterprises	
	N	%
Survey population	918	100,0
Sample	350	38,1
Over-coverage	20	(5,7)
Net sample	330	100,0
Non-response	59	17,9
- no contact	15	4,5
- refusal	20	6,0
- other reason	24	7,3
Response	271	82,1

### Data collection system

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 (e.g. Godenhjelm et al. 2000, Ahvonen and Honkanen 2001, Honkanen and Ahvonen 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. Willis 1994, 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. 2000, 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 of < € 168 000 (“small”) and > 168 000 (“large”). The sample was allocated to fixed quotas to give a sufficient number of observations of all strata. The sampling fraction ranged from 14 % to 100 %, depending on the strata. (Table 2).

**Table 2. Sampling fractions (n / N = sample size / survey population) and final response percentages by stratum in 2004 (sectors by turnover classes).**

Strata		Sampling fractions n / N	Response rate %
Sector	Turnover		
Fishing	Small	52 / 379	83.7
	Large	24 / 24	70.8
Aquaculture	Small	45 / 122	85.0
	Large	45 / 78	86.0
Processing	Small	33 / 80	74.1
	Large	33 / 57	93.8
Wholesale	Small	22 / 22	85.7
	Large	32 / 44	76.7
Retailing	Small	33 / 67	72.7
	Large	31 / 45	87.1
All	Small	185 / 670	80.6
	Large	165 / 248	83.8
	All	350 / 918	82.1

## Interviews

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. The interviews were held with a representative of management.

## 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 (nonresponse) at unit level. The enterprises were calibrated on the basis of their turnover (e.g. Deville and Särndahl 1992, 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, Statistics Finland 2003). The values of the balance figures can range between -100 and 100. In the balance calculations the response options were assigned the following weight coefficients.

Improve / Increase .....+1.0  
 Don't know / Unchanged..... 0  
 Deteriorate / Decrease.....-1.0

## Presentation of results

To summarize the enterprise economics, the results are presented also as indicators that are loaded with certain questions (see Ahvonen and Honkanen 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 in the survey population and by turnover.

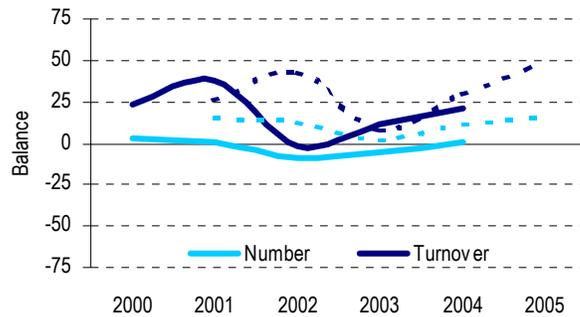
In the regional presentations, the country was divided into southern-western and northern-eastern Finland. The former comprises the provinces of Southern and Western Finland, including Åland, the latter the provinces of Eastern Finland, Oulu and Lapland. Of the interviewed enterprises included in the sample, 70 % were located in southern-western Finland and 30 % in northern-eastern Finland.

## RESULTS

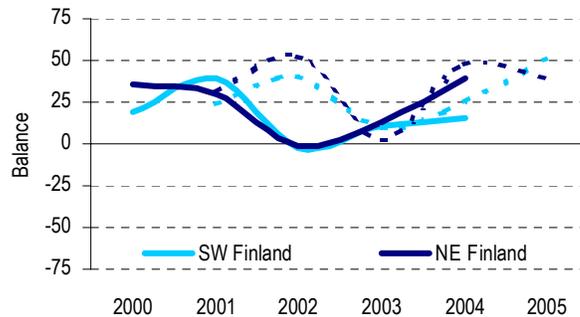
The trend indicator for the past showed that the fishery sector as a whole had developed mainly neutrally during the last 12 months in February 2004. The confidence indicator showed that the development was expected to be positive for the coming 12 months. Optimism in the future was stronger when the results were weighted by the turnover of the enterprises, which emphasised the opinions of big companies (Figure 2).

In the regional analysis (weighted by the turnover of the enterprises), enterprises in northern and eastern Finland were slightly more optimistic about the trend in their financial standing during the previous year than enterprises in southern and western Finland. Future expectations tended to be more positive in southern and western than in northern and eastern Finland (Figure 3).

In February 2004 the overall financial standing of export and home-market companies had improved during the last 12 months. Both groups strongly believed that the favourable trend would continue during the next 12 months (Figure 4).



**Figure 2.** The trend indicator (continuous line) and confidence indicator (dash line) for commercial fishery, weighted by the *number* of the enterprises and their *turnover*.



**Figure 3.** The trend indicator (continuous line) and confidence indicator (dash line) for commercial fishery by region, weighted by the *turnover* of the enterprises.

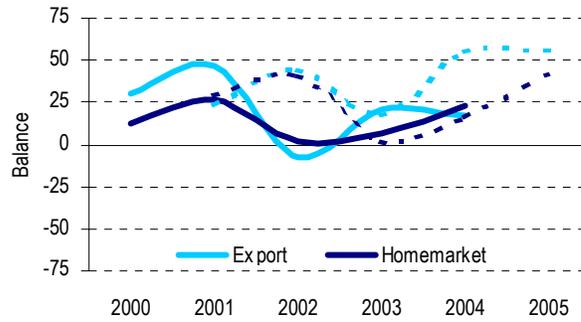


Figure 4. The trend indicator (continuous line) and confidence indicator (dash line) for export and home market enterprises, weighted by the *turnover* of the enterprises.

In the evaluation by sector in February 2004, aquaculture and fishing enterprises considered that their general financial standing had slightly declined during the past 12 months. All the other sectors estimated that their trends had been upwards. The sector with the best economic development was the processing industry. All the sectors considered that their financial standing would improve during the next 12 months. Large retail, wholesale and processing companies were the most optimistic about their financial standing in the near future (Figure 5).

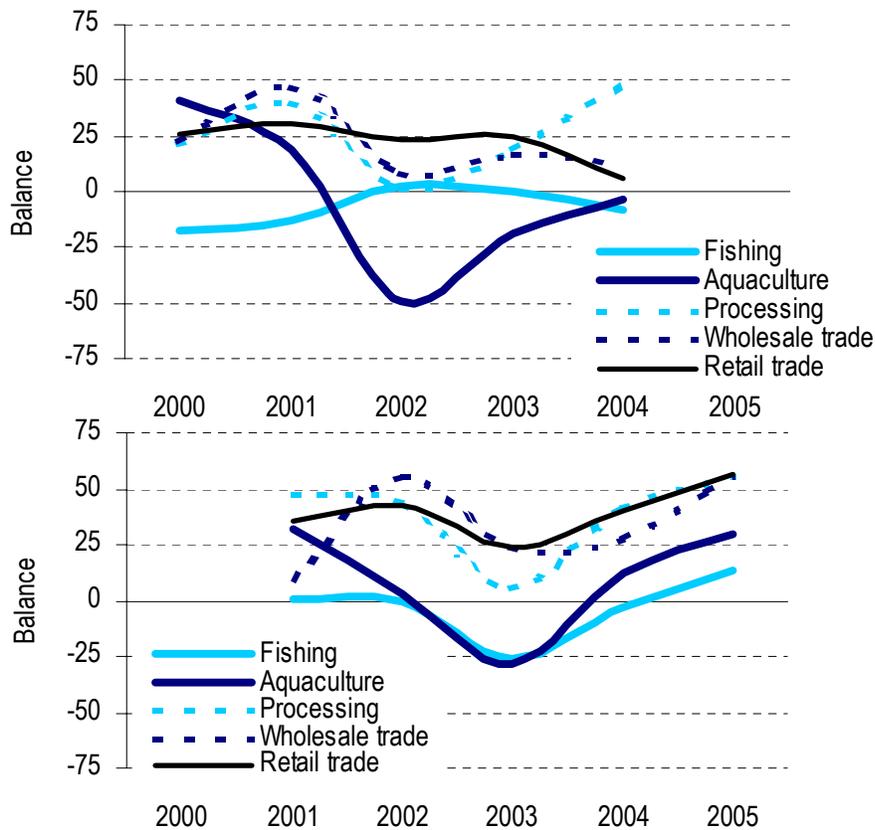


Figure 5. The trend indicator (upper figure) and confidence indicator (lower figure) for commercial fishery by sectors, weighted by the *turnover* of the enterprises.

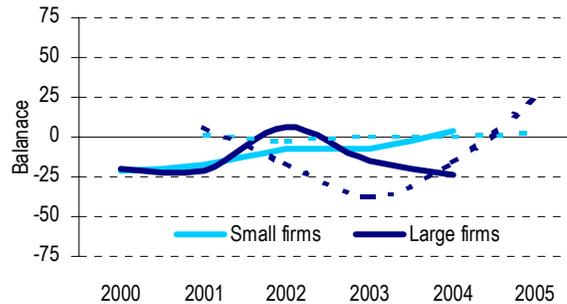
The trend indicator for small fishing enterprises was around zero. Large companies' development was downwards, and the value of the indicator was clearly under zero in February 2004. According to the confidence indicator of small fishing enterprises, the outlooks for the coming year were rather stable, as in earlier years. The confidence indicator of large fishing enterprises had turned upwards, and the outlook was quite positive (Figure 6).

The trend indicator of large aquaculture enterprises had slightly improved, and the indicator for the small firms was rather stable in February 2004. Both categories' trend indicators were still a bit under zero. Faith to in the future was slightly positive according to the confidence indicators (Figure 7).

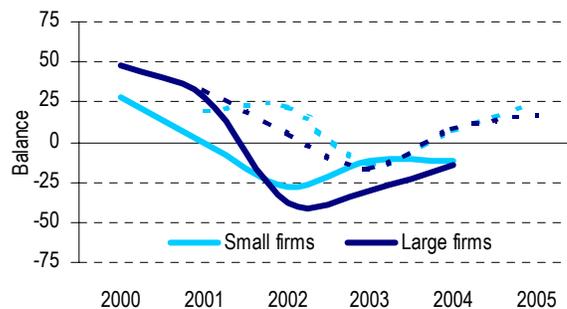
The trend indicators for processing enterprises were stable. The large firms' trend indicator was slightly positive, and that of small firms was around zero. According to the confidence indicator, the outlooks for the coming 12 months were very positive amongst the large enterprises (Figure 8).

Large and small wholesale companies' trend indicators had remained at almost the same level as last year. According to the confidence indicator, the expectations of the small firms and especially of the large ones were positive for the coming year (Figure 9).

The trend indicators for the retail companies had remained stable in February 2004. The confidence indicators for the coming 12 months had gone somewhat upwards. The large retail firms' confidence indicator was at a higher level than that of the small firms (Figure 10).



**Figure 6. The trend indicator (continuous line) and confidence indicator (dash line) for *fishing enterprises*, distinguished according to turnover class. Weighted by the *number* of the enterprises.**



**Figure 7. The trend indicator (continuous line) and confidence indicator (dash line) for *aquaculture enterprises*, distinguished according to turnover class. Weighted by the *number* of the enterprises.**

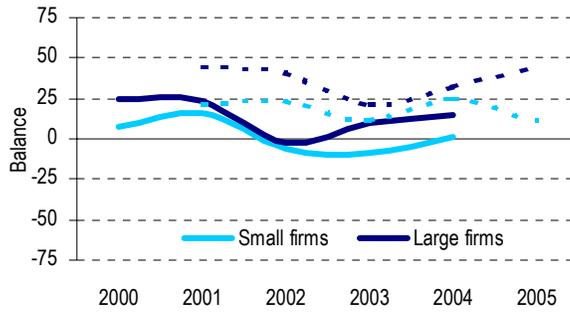


Figure 8. The trend indicator (continuous line) and confidence indicator (dash line) for *processing enterprises*, distinguished according to turnover class. Weighted by the *number* of the enterprises.

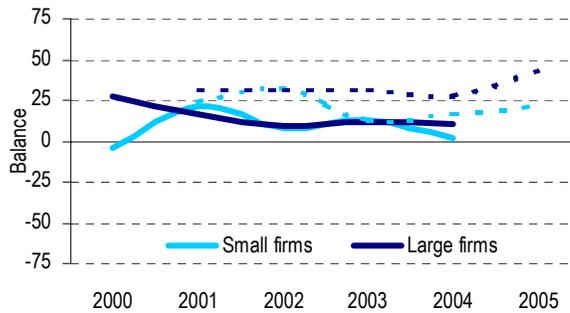


Figure 9. The trend indicator (continuous line) and confidence indicator (dash line) for *wholesale enterprises*, distinguished according to turnover class. Weighted by the *number* of the enterprises.

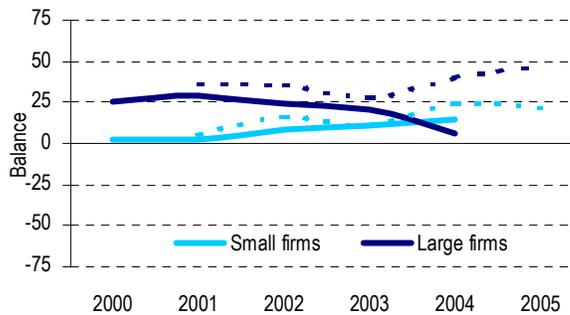


Figure 10. The trend indicator (continuous line) and confidence indicator (dash line) for *retail trade enterprises*, distinguished according to turnover class. Weighted by the *number* of the enterprises.

## **DISCUSSION**

During the last decade, there have been significant changes in Finnish fisheries: the fresh fish market was rapidly opened to international competition, and the common trade policy of the EU was adapted as Finland joined the EU in 1995. One particular challenge for fisheries sector has been turbulence in the salmon market. After the middle of the 1990s, the prices of domestic wild salmon and salmon trout followed the falling trend of the price of imported salmon, leading to profitability problems for domestic producers. Since then, salmon prices have to a certain extent been stabilized, but the import volume has continued to grow. There have been also environmental and regulative changes affecting the profitability of the fisheries primary production.

In February 2004, the sectors that had deteriorated during the past year were fishing and aquaculture, however the outlook for the coming year was a bit promising. Large retail, wholesale and processing companies were the most optimistic about their financial standing in the near future. The fishery industry's confidence reflected the overall economic trend during the past year and business outlook for the next year of the Finnish industry in general (cf. Statistics Finland 2004, TT 2004).

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.

The questions were formulated as they usually are in the common business surveys and their response options were simple. Moreover, the questions had been tested for performance in a pilot study, which reduced the possibility of errors in measurements. According to the interviewers, the respondents understood the questions well. In the computer-assisted telephone interview the responses were stored into a database direct, thus avoiding processing errors due to separate coding and recording.

Business surveys generally measure change. Of importance is not the individual results but the changes occurring between the measuring times. The present results are based on a five measuring time, which sets limits on the interpretation in terms of time or, in terms of correlation with external economic data. 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.

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