

**The Revised CII-ESRI Survey –  
A Note**

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## THE REVISED CII-ESRI SURVEY — A NOTE<sup>1</sup>

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### *Introduction*

This note gives a brief description of the coverage and the results of the revised CII-ESRI Monthly Industrial Survey. As discussed in the previous article, by Conniffe, in this *Commentary*, up to the present the Survey could be improved on two grounds in particular, namely on the sample and on seasonality. The problem of seasonality can be partially dealt with by seasonally correcting the results along the lines suggested by Conniffe. The sample meanwhile has been enlarged and the weights used to aggregate the responses have been updated. The computer program used for the analysis has also been changed. Though not affecting the results, this affords greater flexibility in drafting the tables of responses.

### *The Enlarged Sample*

With a continuing survey the panel of respondents will inevitably decline so that updating is needed. The surveyor has to balance his need to contain expenditure on the survey against his desire to have reliable results. In recent years, with large numbers of firms ceasing to trade, the number of responses declined considerably. During the same time, many new firms have been established which should be represented in the sample. It was decided in 1983 to enlarge the sample and review the weights. Firms were contacted and invited to participate in the survey, and responses from the enlarged sample have been recorded but not published. Respondents in April of this year numbered 270 in total. The response rate currently lies between 65 and 70 per cent.

In terms of coverage, the turnover of the firms in the enlarged sample is some 30 to 35 per cent of national turnover of manufactures. The percentage distribution of turnover, nationally and in the sample, are given in the first two columns of Table 1 below. The exports of the firms in the sample are between 30 and 35 per cent of national exports of manufactures. The national and sample distributions are given in columns (3) and (4) of Table 1. Employment in the sample is some 25 to 30 per cent of the relevant national figure, the distribution being in columns (5) and (6). Finally, the number of firms, or strictly speaking, establishments, in the sample is only about 5½ per cent of

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<sup>1</sup>The people who undertook the work in this note are: June Ryan, who implemented the changeover to the SPSS computer package and wrote the additional routines, David Croughan of CII and members of the CII staff who enlist new firms and administer the questionnaires, and B.J. Whelan who supervised the project.

**TABLE 1: The Sample. Percentage Distribution of Turnover, Exports, Employment and Number of Establishments, Broken Down Nationally and in the Sample Responding in April 1985**

Industry (CII-ESRI Survey Classification)	Turnover		Exports		Employment		No. of Estab.	
	National	Sample	National	Sample	National	Sample	National	Sample
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Textiles	3.2	2.7	4.8	2.2	6.0	3.8	4.7	5.9
Clothing	1.7	1.7	2.1	2.3	6.2	5.2	8.3	6.7
Footwear	0.3	0.9	0.5	0.8	1.4	2.9	0.5	3.7
Timber & Furn.	1.6	1.3	0.8	0.7	4.3	2.0	13.3	3.7
Paper	1.2	2.1	0.7	0.5	1.9	2.4	1.6	3.7
Printing	1.9	3.9	0.6	0.4	5.3	7.5	6.5	5.9
Leather & L. Goods	0.4	0.7	0.4	0.7	0.5	1.2	0.9	0.4
Plastics	1.9	1.5	2.3	0.9	2.5	2.1	3.1	4.4
Petrol	2.4	0.0	0.5	0.0	0.2	0.0	0.2	0.0
Metal Prod. & Proc.	1.1	1.4	1.3	1.3	0.9	1.7	0.8	1.5
Non-Metallic Min.	5.6	7.5	1.7	2.1	6.6	9.2	7.4	6.3
Chemicals	10.9	18.5	15.1	14.3	5.0	10.3	3.5	12.2
Man-Made Fibres	0.6	1.3	2.5	2.0	1.0	1.8	0.5	0.7
Metal Articles	3.0	0.7	2.7	0.2	6.7	1.5	13.8	1.8
Mech. Equipment	2.4	2.6	5.6	3.8	3.9	3.9	4.8	5.9
Office and D. Proc.	13.0	6.0	12.4	7.1	3.7	4.6	0.9	4.1
Electr. Equip.	4.3	9.4	8.4	10.9	6.9	11.1	4.2	10.4
Transport Equip.	1.9	0.0	3.0	0.0	5.1	0.0	3.5	0.0
Rubber Products	0.6	1.3	1.3	1.5	1.4	1.8	0.7	1.5
Instrument Eng.	2.9	1.5	2.8	1.8	3.9	1.9	1.6	1.9
Food	34.8	20.5	27.0	41.1	21.9	16.3	17.4	14.1
Drink & Tobacco	4.3	14.5	3.5	5.4	4.7	8.8	1.8	5.2
All Manufacturing	100	100	100	100	100	100	100	100
Total	£1,0445m	£3,496m	£6,118m	£2,040m	193,500	49,885	4,985	270

*Note:* The national figures are approximate: as a proxy for turnover, gross output figures were taken from the Census of Industrial Production and updated to 1984 in volume terms only, using the Industrial Production Index; Exports for 1982, according to the NACE classification, were supplied by the CSO; employment was taken from Industrial Employment, Earnings and Hours Worked in the *Irish Statistical Bulletin*; the numbers of establishments come from preliminary 1981 Census of Industrial Production tables. National Totals refer to 1983 except for the Number of Establishments which refers to 1981.

the national number. The low representation of firms is due to the fact that the sample predominantly consists of large firms, hence the high gross output coverage. To a lesser extent, the same applies to employment, where the firms with high gross output are relatively less labour intensive.

The detailed NACE codes for the sectors listed in Table 1 below are given in Appendix Table 1. The survey covers all manufacturing industries except NACE 49, Other Manufacturing Industries, which account for less than 1 per cent of all manufacturing.

Looking at the pairs of figures in the columns in Table 1 enables one to see the industry's proportion of All Manufacturing in the nation and in the sample. This is an indication of the relative representation in the sample, and is judged satisfactory. Extra firms, however, are currently being invited to participate from the industries: Petrol (not represented at present), Metal Articles (at present 5 establishments are responding), Office Machines and Data Processing Equipment (11 establishments), Transport Equipment (not represented) and Investment Engineering (5 establishments). Despite the

under-representation here at present, the numbers of respondents are considered sufficient for the results to be useful. In addition, the coverage of exports in Textiles (15 establishments exporting) and Plastics (11 exporting) could be enhanced, but again, the numbers are satisfactory. A routine has been established so that the sample columns of Table 1 are printed each month. This enables continuous monitoring of the sample's representativeness.

### *The Weights*

The first stage in processing the responses is to aggregate replies for each industry. Participating establishments have supplied figures of their recent total turnover and exports. These reflect the establishment's relative importance within its industry. The turnover figures are used as weights in aggregating responses from each establishment to industry level, except in the case of questions relating to exports where responses are aggregated using the export figures supplied by establishments.

Having calculated replies at industry level, the second stage is to calculate the national or All Manufacturing Industries' results. Net output weights are used at this stage. These reflect each industry's relative importance within the country. For any question, except those relating to exports, the result for each industry is multiplied by its corresponding national net output weight and then aggregated. Replies relating to exports are aggregated by using national export weights. The net output and export weights were recently updated and are shown in Appendix Table 1.

In general, net output is a better measure of relative importance than turnover, because the latter incorporates a measure of duplication arising from the use of the products of another firm as materials. Ideally, net output weights should be used in the first stage, but information on net output, at the firm level, would be more troublesome for firms to supply than turnover.

Until now, updating of the weights has been undertaken on an *ad hoc* basis, the last revision having been made in 1978. It is now considered that updating should take place on a regular two-yearly basis, immediately after the release of a Census of Industrial Production.

### *Results from the Updated Sample*

It is too early to assess how well the responses from the updated sample track and predict economic trends, because it has only been in operation for nine months. Some preliminary impressions, however, are possible. We are also interested to see if the production of the updated sample involves a serious break in the series, so that users of the survey results can take this into consideration.

In Figure 1, replies from All Manufacturing Industries are given to the following question: "For the time of year (i.e., allowing for seasonal variation) the value of production by your firm in the past month compared with previous months was higher/same/lower". The difference between the percentage replying "higher" and the percentage replying "lower", that is the balance, is plotted as graph (a). Replies for the old sample are given from the beginning of 1983 and for the revised sample from September 1984. Responses from the updated sample are fairly similar in movement to those from the old sample,

Figure 1: Production

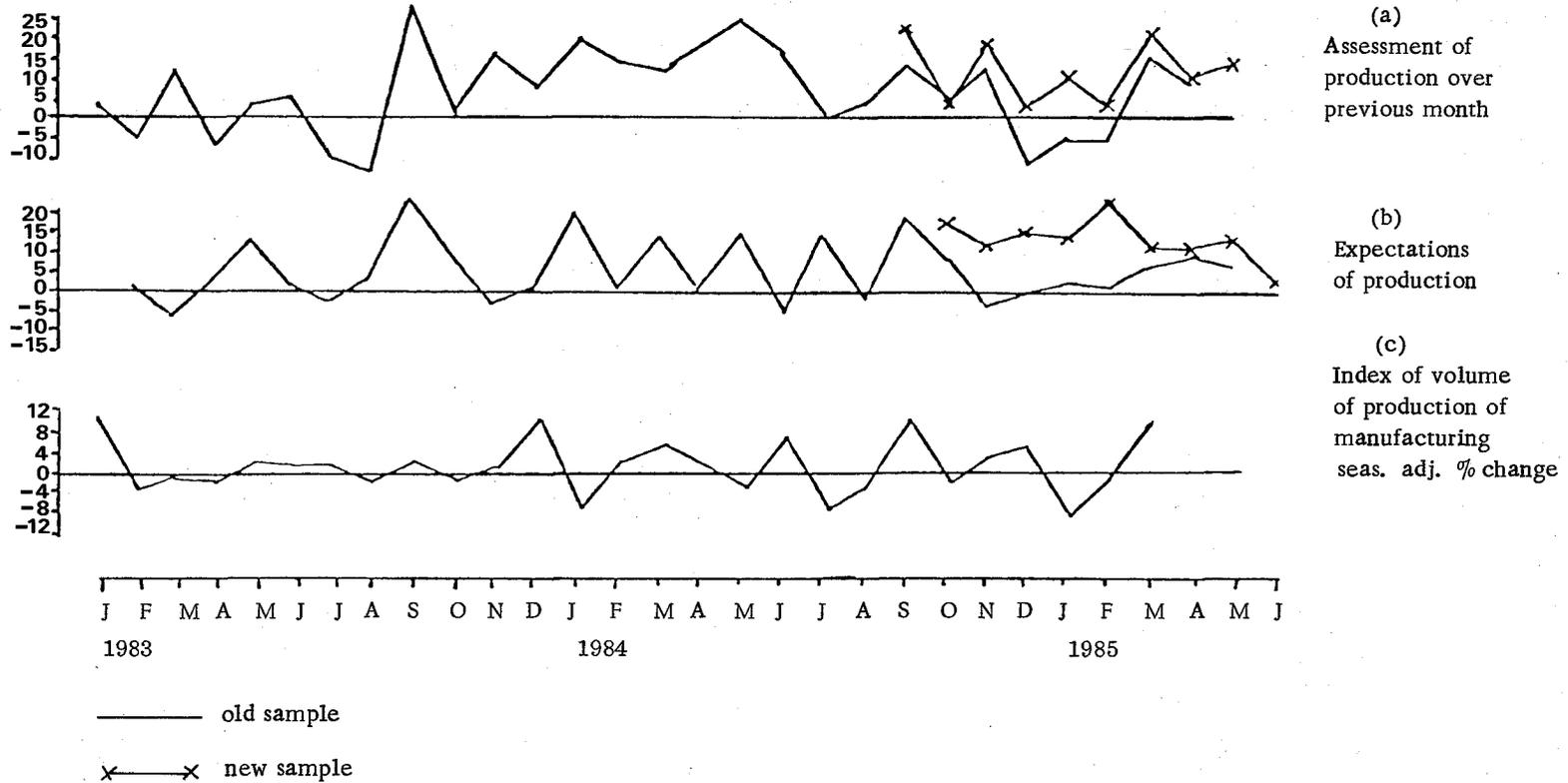
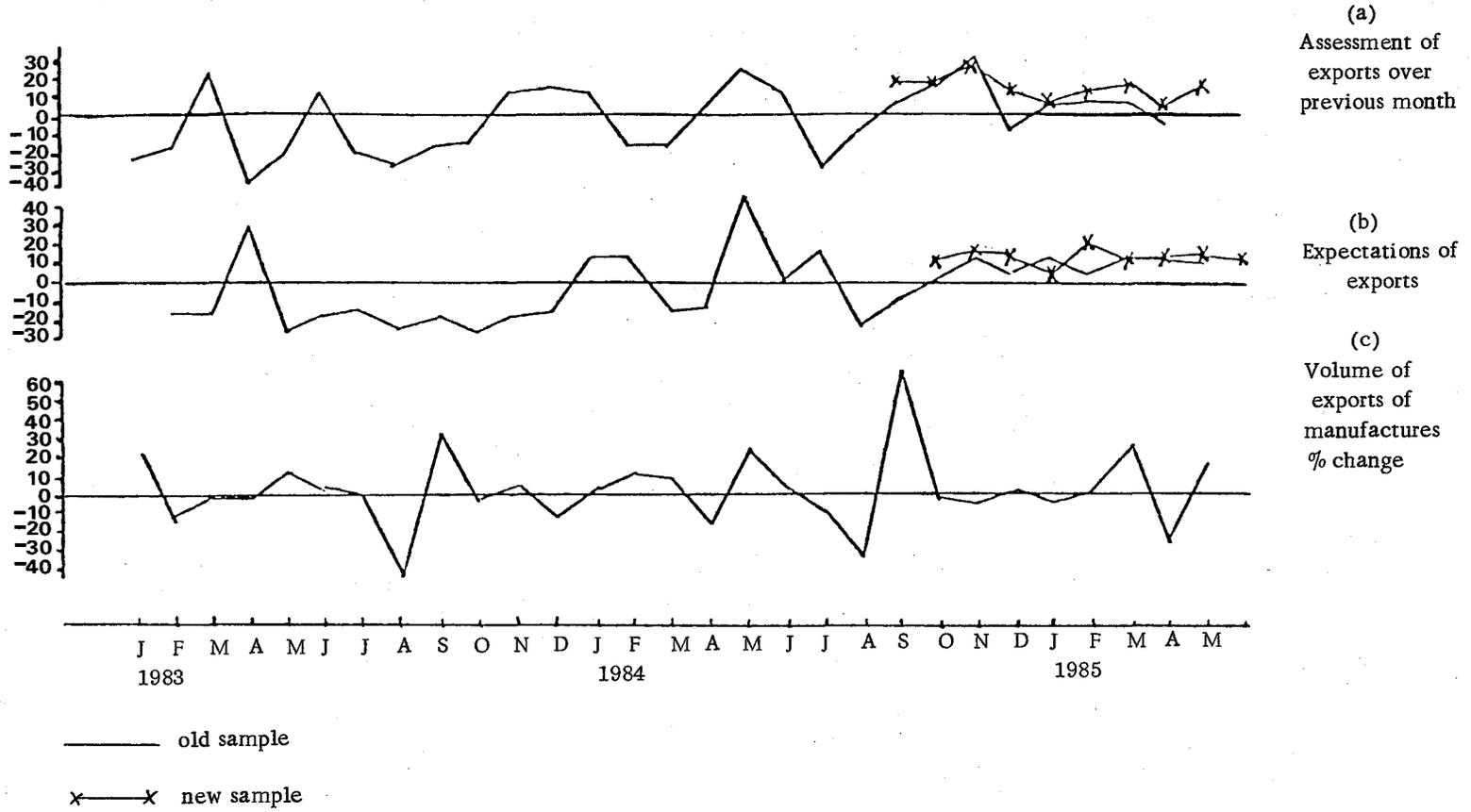


Figure 2: Exports



the correlation coefficient being 0.88. However, there is a higher proportion of optimistic respondents. This, in turn, reflects the higher proportion of "modern" industries.

In a short note, we are not able to look in depth at how well the responses track objective data. In theory, there is no exact counterpart in the published data which measures what these replies describe. A close counterpart might be data on changes in actual production levels, published by the Central Statistics Office. Replies might reflect the monthly change in the seasonally adjusted index of the value of manufacturing output. A volume index, not a value index, is available and the plot of the monthly percentage change is added to Figure 1 as graph (c). The correspondence between the sample replies and the index is vague, though as the article by Conniffe (1984) describes, the results of the survey in the past have corresponded better with the unadjusted index. This indicates that respondents, though asked to take into consideration the time of year, to some extent do not.

Figure 1 also enables one to assess the correspondence between actual changes in the index of manufacturing output and expectations of production given in reply to the question: "Again excluding seasonal variation, do you think that over the next three months your firm's production will be higher/same/lower". The expectations plotted in graph (b) have been moved one month forward on the simple assumption that expectations refer to the next month. Apart from predicting the actual rises in May and September 1983 and March and September 1984, the expectations expressed in the old sample only loosely relate to what subsequently happened. However, the graph of businessmen's expectations seems to tie in moderately well with the graph of their own assessment. What respondents said will happen had some agreement with what they later recorded had happened.

Figure 2 looks at businessmen's assessments of exports, their expectations and the actual volume of recorded exports of manufacturers. The quality of the results is similar to those for production. The assessment of exports over the previous month has a correlation coefficient of 0.7 between the old and new sample. There is a tenuous correspondence between the assessment from the old sample and the actual volume of exports, though the recent April downturn has been correctly stated in both samples. Here businessmen's expectations and reported outturns correspond vaguely.

### *Conclusion*

The purpose of this note is to inform readers of the updating of the sample and weights in the CII-ESRI survey. We have seen from a small selection of results that the data from the old sample had limited usefulness. The representativeness of the updated sample is good and should make it a more helpful economic indicator. The extent of the break in the series can be viewed from the graphs for various other survey questions given in the Appendix. Meanwhile, the sample is still being increased and a fuller assessment will be in order in a year or so.

### **Reference**

CONNIFFE, D., 1984. *Analysis of the Irish Business Survey*, Report commissioned by the Directorate for Economic and Financial Affairs, Brussels.

**APPENDIX TABLE 1: NACE Code and Weights for Aggregating Industry results to National Level**

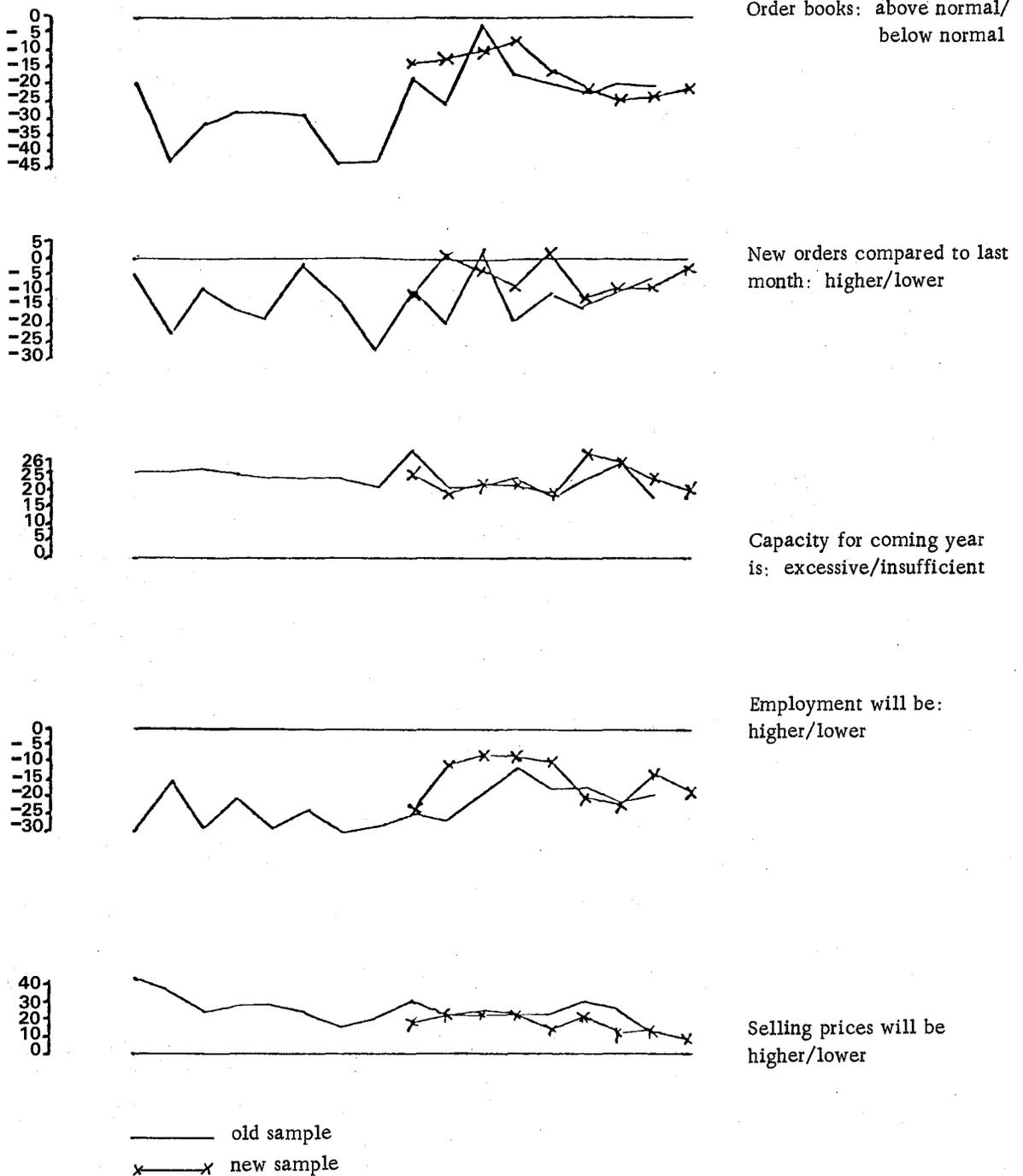
Industries	NACE Code	Weights	
		Net Output	Exports
Wool	341	.0068	.0134
Cotton	432	.0104	.0156
Knitting	436	.0075	.0086
Other Textiles	433-435, 437-439	.0116	.0108
Footwear	451, 452	.0060	.0050
Clothing	453-456	.0258	.0211
Wood and Cork	461-466	.0125	.0051
Wooden Furniture	467	.0066	.0032
Paper	471, 472	.0152	.0074
Printing	473, 474	.0411	.0054
Leather and Leather Goods	44	.0037	.0039
Plastics	483	.0168	.0226
Petrol	14	.0022	.0049
Production and Preliminary Processing of Metals	22	.0090	.0129
Building Materials	241-246	.0483	.0035
Ceramics and Hollowglass	247, 248	.0162	.0139
Basic Chemicals	251	.0224	.0980
Agricultural and Industrial Chemicals	256	.1249	.0476
Consumer Chemicals	255, 257-259	.0050	.0056
Man-Made Fibres	26	.0081	.0251
Manufacture of Metal Articles	31	.0354	.0265
Agricultural Machinery and Tractors	321	.0014	.0027
Other Mechanical Engineering	322-328	.0230	.0527
Office Machines and Data Processing Equipment	33	.1322	.1240
Domestic Electrical	345, 346	.0195	.0218
Other Electrical inc. Telecommunications	341-344, 347, 348	.0370	.0620
Motor Vehicles	35	.0101	.0248
Ships	361	.0043	.0010
Other Transport Equipment	362-365	.0103	.0040
Rubber Products	481, 482	.0086	.0134
Instrument Engineering	37	.0348	.0284
Food	411-422	.2166	.2698
Drink and Tobacco	424-429	.0667	.0353

*Source:* Net output weights are derived from the net output figures in the 1979 Census of Industrial Production updated to 1983, using the Industrial Production Index.

Industries whose relative price has decreased will be overstated.

Export Weights were derived from figures on trade in ECUs by NACE categories, classified by the Statistical Office of the European Communities. 1982 was the most recent year for which trade was classified in this way. These weights have been used on the enlarged sample since September 1984.

Appendix Figure: Old and new samples compared for selected questions



Note: graphs are in terms of "balances", e. g. per cent of respondents stating 'above normal' minus per cent of respondents stating 'below normal', etc.

