Manufacturing Output and Employment by Market Area

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by Terry Baker

Introduction

The currency instability following sterling's withdrawal from the ERM focused attention on the proportion of industrial employment dependent on the UK market or otherwise vulnerable to fluctuations in the value of sterling. Although exchange rates are now more stable, a renewed depreciation of sterling within the next few years cannot be ruled out. Thus the issue of the employment share of major overseas markets remains of interest and deserves closer examination.

No definitive detailed assessment of total employment exposure to currency risks is feasible, although surveys can make a significant contribution to knowledge, especially in the difficult areas of overseas competition on the domestic market and international competition in third markets. However, as a statistical baseline, the employment dependent on different markets in 1989 can be derived from the *Census of Industrial Production* for that year. Taken in conjunction with the 1985 Input-Output tables, a reasonable estimate of the employment content of domestic disposal and of direct and indirect exports to the UK, other EC countries and to the rest of the world can be made.

The information is obviously rather dated by now, but the basic patterns are unlikely to have been radically changed in the intervening years. A clear picture of the 1989 pattern should still provide a useful basis for the consideration of future developments.

Direct Employment Shares

Table 10 of the 1989 *Census of Industrial Production* sets out for each industrial sector the gross output and persons engaged both for all establishments and for exporting establishments. For exporting establishments, it shows total gross output and gross output exported, with the latter broken down between exports to the UK, other EC, USA and the rest of the world. Thus the share of major export regions and domestic disposals in the gross output of each industry can be readily calculated. Approximate employment shares can be derived by assuming that employment in the exporting establishments of each industry is distributed in the same proportions as gross output. Although this implies an implausible degree of homogeneity among exporting establishments, the degree of distortion involved is probably minor, if the maximum available disaggregation between industries is used.

The results of re-casting Table 10 of the *Census of Industrial Production* for each industry are shown in Appendix 1. Summary results are set out in Table 1. The

Note

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Table 1: *Manufacturing Industry - Domestic and Export Shares 1989*

	Domestic			*Exports*				*Total*
	Domestic Only	*Exporting Establishments*	*Total*	*Total*	*UK*	*Other EC*	*Rest of World*	
HIGH-TECH INDUSTRIES								
Gross Output £m	100.7	212.6	313.3	5888.8	1,134.6	3,200.5	1,553.7	6,202.1
%	*1.6*	*3.4*	*5.0*	*95.0*	*18.3*	*51.6*	*25.1*	*100*
Employment	1,451	1,535	2,989	37,171	7,120	20,777	9,274	40,160
%	*3.6*	*3.8*	*7.4*	*92.6*	*17.8*	*51.7*	*23.1*	*100*
TRADITIONAL INDUSTRIES								
Gross Output £m	1,667.1	2,113.2	3,780.3	3,428.9	1,252.4	1,270.5	906.0	7,209.2
%	*23.1*	*29.3*	*52.4*	*47.6*	*17.4*	*17.6*	*12.6*	*100*
Employment	31,620	31,291	62,911	49,966	20,330	17,346	12,290	112,877
%	*28.0*	*27.7*	*55.7*	*43.3*	*18.0*	*15.4*	*10.9*	*100*
FOOD INDUSTRIES[1]								
Gross Output £m	827.6	397.9	1,225.5	1,097.5	351.2	380.7	365.6	2,323.0
%	*35.6*	*17.2*	*52.8*	*47.2*	*15.1*	*16.4*	*15.7*	*100*
Employment	8,134	3,879	12,013	6,955	2,922	2,028	2,005	18,968
%	*42.9*	*20.4*	*63.3*	*36.7*	*15.4*	*10.7*	*10.6*	*100*
TOTAL MANUFACTURING[1]								
Gross Output £m	2,595.4	2,723.7	5,319.1	10,415.2	2,738.2	4,851.7	2,825.3	15,734.3
%	*16.5*	*17.3*	*33.8*	*66.2*	*17.4*	*30.8*	*18.0*	*100*
Employment	41,205	36,708	77,913	94,092	30,372	40,151	23,569	172,005
%	*24.0*	*21.3*	*45.3*	*54.7*	*17.7*	*23.3*	*13.7*	*100*

[1] Excluding Meat and Dairy Industries.

meat and dairy industries are excluded, because, as explained in the *Census of Industrial Production*, the allocation of gross output between domestic and export outlets is unreliable for those industries.

Two features immediately stand out from Table 1. The first is the contrast between the high-technology modern industries and the traditional and food industries. Although well known, the minuscule share of the domestic market in the gross output and employment of the high-technology industries remains striking.

The second feature is that for each of the major categories of industry, and for manufacturing industry as a whole, the domestic share of employment is significantly higher than the domestic share of gross output. There are two reasons for this. In almost all industries, as can be seen from Appendix Table 1, output per head is lower in the non- exporting establishments than in the exporting. This is not surprising, as non-exporting establishments tend to be smaller and often incorporate a local service element in their activities. The other, more important, reason is that within each category the more labour intensive industries tend to supply mostly the home market, while the industries with the highest output per head are mainly engaged in exporting. For example, the office and data processing machinery industry, with an output per head of £348,000, exports 97.3 per cent of its gross output, while the clothing industry, with output per head of £24,000, exports only 41.7 per cent of gross output.

An interesting, if less obvious, feature of Table 1 is that there is less divergence between output and employment shares for the UK market than for either the domestic or the other export markets. The reason for this is that the UK has by far the least variable market share between individual industries. Every industry exports to the UK, with the share of output ranging from a low of 4.6 per cent for bread, biscuits and flour confectionery to a high of 41.3 per cent for the knitting industry. In the overwhelming majority of industries, the UK share lies between 9 per cent and 35 per cent. This contrasts with variations in the domestic share from 1.9 per cent for instrument engineering to 93.4 per cent for grain milling and animal feedstuffs, and in the other EC share from 0.5 per cent for bread, biscuits and flour confectionery to 60.4 per cent for rubber products. Thus the composition effect is weak in the case of the UK market, as it is equally represented in industries with high and low output per head.

Export Shares by Ownership

It is sometimes argued that Irish-owned firms are more dependent on the UK market than foreign-owned firms. Table 11 of the *Census of Industrial Production* allows market share to be calculated by ownership. Summary results are set out in Table 2. Because the breakdown is by size rather than by industry, meat and dairy production cannot be excluded. Also, because the degree of disaggregation is much less than in the industry table, the full divergence between output and employment patterns cannot emerge.

Despite these drawbacks, Table 2 is nevertheless of considerable interest. It can be seen that the overwhelming difference between Irish and foreign-owned establishments is in the degree to which they serve the domestic market.

Table 2: *Irish and Foreign-Owned Industry*

	Domestic			*Exports*				*Total*
	Domestic Only	*Exporting Establishments*	*Total*	*Total*	*UK*	*Other EC*	*Rest of World*	
IRISH OWNED								
Gross Output £m	2,722.6	2,894.9	5,617.5	3,053.5	1,259.3	684.8	1,109.4	8,671.0
%	*31.4*	*33.4*	*64.8*	*35.2*	*14.5*	*7.9*	*12.8*	*100*
Employment	40,212	32,630	72,842	31,982	13,598	7,366	11,018	104,824
%	*38.4*	*31.1*	*69.5*	*30.5*	*13.0*	*7.0*	*10.5*	*100*
FOREIGN OWNED								
Gross Output £m	441.6	1,153.4	1,595.0	9,474.6	2,168.6	4,668.8	2,637.2	11,069.6
%	*4.0*	*10.4*	14.4	85.6	19.6	42.2	23.8	100
Employment	4,959	8,852	13,811	71,149	16,307	35,022	19,820	84,960
%	*5.8*	*10.4*	16.2	83.8	19.2	41.2	23.4	100
TOTAL MANUFACTURING[1]								
Gross Output £m	3,164.2	4,048.3	7,212.5	12,528.1	3,427.9	5,353.6	3,746.6	19,740.6
%	*16.0*	*20.5*	*36.5*	*63.5*	*17.4*	*27.1*	*19.0*	*100*
Employment	45,171	41,482	86,653	103,131	29,905	42,388	30,838	189,784
%	*23.8*	*21.9*	*45.7*	*54.3*	*15.7*	*22.3*	*16.3*	*100*

[1] Including Meat and Dairy Industries.

Because of the dominance of domestic sales by Irish-owned companies, the proportion of their employment dependent upon direct exports to the UK is significantly lower than for foreign-owned companies. Of course, the UK share of exports, as distinct from total output, is much higher in Irish than Foreign-owned establishments.

Although details by size of establishment are not presented in Table 2, there is a clear pattern that, among both Irish and foreign-owned establishments, the smaller the size the greater the dependence on the domestic market. The UK share, however, is little affected by size of establishment. Among foreign-owned establishments, those of EC origin are significantly more involved with the domestic market than those of US or other origin. About 38 per cent of employment in EC-owned establishments is dependent upon the domestic market, compared with only 8.5 per cent of employment in other foreign establishments. This, of course, reflects the presence of many British companies in the more traditional sectors of industry, and the dominance of American multinationals in the high-technology sectors. Again, however, the UK share is relatively constant.

Indirect Exports

The pattern of employment shares of the major markets set out in Table 1 does not show the full extent of employment dependence on export markets. This is because a substantial proportion of domestic disposals of gross output represents sales within the manufacturing sector, and is thus incorporated in the export sales of the purchasers. Using the transactions table of the 1985 *Input-Output*, it is possible to derive output coefficients which can be applied to the 1989 values of gross output. In this way the flow of output within and between industries in 1989 can be established and distributed according to the market patterns of the recipient industries. Because of differences in the classification of industries between the two sources, the analysis has to be on the basis of industry groups rather than individual industries. A particular difficulty arises in the case of chemicals, which has been resolved by the heroic, but not unreasonable, assumption that all inter-industry flows relate to the traditional chemical sectors rather than to pharmaceuticals.

The detailed results of these calculations of indirect exports and the resultant employment shares are set out in Appendix 2. The importance of indirect exports varies widely between industries. For office and data processing machinery, chemicals, and drink and tobacco, indirect exports are of little significance, accounting for under 2 per cent of total gross output and employment. However, for electrical engineering, textiles and clothing, and wood, paper and printing, indirect exports through inter-industry sales account for over 6 per cent of total gross output and employment. In the case of wood, paper and printing, which has relatively low direct exports, indirect exports make up more than a quarter of total exports.

Results for the three main categories of industry, and for total manufacturing industry (excluding meat and dairy products) are summarised in Table 3. It can be seen that indirect exports support over 9,000 jobs in total manufacturing, most of them in the traditional industries.

Table 3: *Indirect and Total Exports*

	Indirect Exports				*Total Exports*				*Net Domestic*	*Total*
	UK	*Other EC*	*Rest of World*	*Total*	*UK*	*Other EC*	*Rest of World*	*Total*		
HIGH-TECH INDUSTRIES										
Gross Output £m	36.0	85.4	33.7	155.1	1,170.6	3,258.9	1,587.4	6,043.9	158.2	6,202.1
%	*0.6*	*1.4*	*0.5*	*2.5*	*18.9*	*53.0*	*25.6*	*97.5*	*2.5*	*100*
Employment	382	904	351	1,637	7,502	21,681	9,625	38,808	1,352	40,160
%	*0.9*	*2.3*	*0.9*	*4.1*	*18.7*	*54.0*	*24.0*	*96.7*	*3.3*	*100*
TRADITIONAL INDUSTRIES										
Gross Output £m	111.5	128.3	87.8	327.6	1,363.9	1,398.8	993.8	3,756.5	3,452.7	7,209.2
%	*1.5*	*1.8*	*1.2*	*4.5*	*18.9*	*19.4*	*13.8*	*52.1*	*47.9*	*100*
Employment	2,196	2,403	1,563	6,162	22,526	19,749	13,853	56,128	56,749	112,877
%	*2.0*	*2.1*	*1.4*	*5.5*	*20.0*	*17.5*	*12.2*	*49.7*	*50.3*	*100*
FOOD INDUSTRIES[1]										
Gross Output £m	46.8	49.9	48.9	145.6	398.0	430.6	414.5	1,243.1	1,079.9	2,323.0
%	*2.0*	*2.2*	*2.1*	*6.3*	*17.1*	*18.6*	*17.8*	*53.5*	*46.5*	*100*
Employment	458	490	479	1,427	3,380	2,518	2,484	8,382	10,586	18,968
%	*2.4*	*2.6*	*2.5*	*7.5*	*17.8*	*13.3*	*13.1*	*44.2*	*55.8*	*100*
TOTAL MANUFACTURING[1]										
Gross Output £m	194.3	263.6	170.4	628.3	2,932.5	5,115.3	2,995.7	11,043.5	4,690.8	15,734.4
%	*1.2*	*1.7*	*1.1*	*4.0*	*18.6*	*32.5*	*19.1*	*70.2*	*29.8*	*100*
Employment	3,036	3,797	2,393	9,226	33,408	43,948	25,962	103,318	68,687	172,005
%	*1.8*	*2.2*	*1.4*	*5.4*	*19.4*	*25.6*	*15.1*	*60.1*	*39.9*	*100*

[1] Excluding Meat and Dairy Industries.

Total Exports

When both direct and indirect exports are considered, total exports support 60 per cent of total employment, with net domestic disposals supporting approximately 40 per cent. The corresponding shares for gross output are 70 per cent and 30 per cent, thus confirming the greater labour intensity of domestic demand for industrial output.

Among the main categories of industry, total exports account for over half of gross output in all three categories, with net domestic disposals accounting for a tiny 2½ per cent of gross output in the high-technology sector. Net domestic disposals give rise to 50 per cent of employment in traditional industry and to 56 per cent in the food industry (excluding meat and dairy), but to only 3 per cent in the high-technology industries.

Of the export regions, total exports to the UK support roughly 33,000 jobs, two-thirds of them in the traditional sector. The rest of the EC accounts for 44,000 jobs, half of them in the high-technology sector, while the rest of the world supported 26,000 jobs, more evenly divided between the sectors. In percentage terms, total exports to the UK were responsible for between 17½ and 20 per cent of employment in each of the main industrial categories, and for 19½ per cent in manufacturing as a whole. These employment shares are marginally above the gross output shares in traditional and food industries and in total manufacturing. By contrast, total exports to other EC countries accounted for 54 per cent of employment in high-technology industry, but much lower shares in the other categories of industry. For total manufacturing other EC countries accounted for 25½ per cent of all employment, compared with 32½ per cent of output. The rest of the world supported 15 per cent of jobs in total manufacturing and 19 per cent of gross output.

Domestic Currency Exposure

The approximate shares of employment dependent on different markets set out above do not equate with the total of employment which could be affected by movements in particular currencies. On the one hand, some of the exports to the UK, especially in the high- technology sectors, could be relatively impervious to fluctuation in the sterling/Irish pound exchange rate. On the other hand, some exports to third markets could be susceptible to intensified competition from the UK following a sterling depreciation, while many suppliers of the domestic market compete with imports which could become more competitive due to currency changes.

The data analysed here cannot provide definitive answers to such questions of currency exposure. However, they can suggest rough orders of magnitude so far as the domestic market is concerned.

It is not unreasonable to assume that the majority of non-exporting establishments are providing products that are not fully tradeable internationally. This may be because of the nature of the goods, such as fresh bread, or because of the degree of service incorporated in the product, as in the case of local printers. By contrast, the products of exporting establishments are obviously tradeable. Thus, almost by definition, exporting establishments are susceptible to overseas competition both in export markets and on the domestic markets. This is not to say that all such establishments are vulnerable to currency changes, in the sense that they are at risk of closure or contraction following the large depreciation of a competitor's currency. However, in many cases it does mean that international competitiveness needs to be taken into account in making business decisions affecting both their domestic and their export markets. Because of taste similarities, distribution arrangements and sheer proximity, the most important competition to Irish establishments on the domestic market is likely to be from the UK, and it is fluctuations in sterling rather than any other currency which is relevant in assessing potential exposure.

On the crude split between exporting and non-exporting establishments, but excluding the high-technology sector, on the grounds that net domestic sales are a minor by-product of export operations, it would appear that 35,200 jobs dependent on the domestic market are liable to be exposed to intensified UK competition following a significant reduction in sterling's real exchange rate. When this is added to the 33,400 jobs dependent upon total exports to the UK, and to an unspecified number which could be affected by competition in third markets, total exposure in manufacturing industry to major sterling fluctuations could amount to over 70,000, or more than 40 per cent of total employment.

Conclusions

1. On the basis of 1989 patterns, roughly 30 per cent of manufacturing gross output, and 40 per cent of industrial employment, is dependent on the domestic market. Almost half of output, and just over half of employment, in the traditional and food sectors depends on domestic sales. The domestic market is insignificant for the high-technology sector.

2. Taking both direct and indirect exports into account, the UK market accounts for about 19 per cent of manufacturing output and employment. The UK share is relatively constant between the high-technology, traditional and food categories of industry. Even at the level of individual industries, the UK share is much less variable than those of the domestic market or other export destinations.

   Despite these constant shares across categories, the much higher labour intensity of traditional industries means that, in absolute numbers, traditional industry accounts for most of the employment dependent on the UK market. Thus, of the total UK-dependent employment of 33,400, traditional industry accounts for 22,500 and high-technology industry for only 7,500.

3. Total exports to other EC countries account for almost 33 per cent of gross output and 26 per cent of employment in manufacturing. The continental EC is responsible for well over half of both gross output and employment in the high-technology sector. In both the traditional and food sectors, the continental EC countries account for a higher share of gross output, but a lower share of employment, than the UK. The total EC- dependent employment of 44,000 is fairly evenly split between 21,700 in the high-technology sector and 19,700 in the traditional sector.

4. The rest of the world, which of course includes some important non-EC European markets, accounts for 19 per cent of manufacturing gross output and 15 per cent of industrial employment. Its output and employment shares in the high-technology sector are significantly higher than those of the UK, but its share in the traditional sector is much lower than either the UK or the rest of the EC.

5. Irish-owned establishments are much more dependent on the domestic market than foreign-owned. The relative employment shares of the domestic market are 70 per cent and 16 per cent. Somewhat surprisingly, the UK market share is higher for foreign-owned than for Irish establishments, and in absolute terms more than half of UK-dependent employment is in foreign-owned firms. As would be expected, a high proportion of employment dependent on other EC and rest of the world markets is in foreign-owned establishments.

6. Total exposure to currency risks cannot be established from the sources used in this exercise. However, a crude estimate can be made by assuming that exporting establishments are producing fully tradeable goods and are thus competing on the home market with actual or potential imports. By adding the domestic employment share of exporting establishments (excluding the high-technology sector) to the employment share of direct and indirect exports to the UK, a rough order of magnitude of potential sterling exposure can be calculated. On this basis, the total employment exposed to major sterling fluctuations could be over 70,000, some 40 per cent of industrial employment. What proportion of this exposed work-force is actually vulnerable, in the sense of being at significant risk from a substantial sterling depreciation, cannot be determined by this type of exercise.

APPENDIX 1: *Gross Output and Employment Share by Industry 1989*

NACE Code	Industry	TOTAL	DOMESTIC: Domestic only	DOMESTIC: Exporting Establish-ments	DOMESTIC: Total Domestic	EXPORT: Total Export	EXPORT: To UK	EXPORT: To Other EC	EXPORT: To Rest of World
	HIGH-TECH INDUSTRIES								
257	**Pharmaceuticals**								
	Gross Output £m	1328.7	3.5	35.1	38.6	1290.1	144.5	597.3	548.3
	%	*100*	*0.3*	*2.6*	*2.9*	*97.1*	*10.9*	*44.9*	*41.3*
	% Exp. Est.			*2.7*		*97.3*	*10.9*	*45.0*	*41.4*
	Employment	5663	78	151	229	5434	609	2513	2312
	%	*100*	*1.4*	*2.7*	*4.1*	*95.9*	*10.7*	*44.4*	*40.8*
33	**Office and Data Processing Mach.**								
	Gross Output £m.	2394.1	5.6	59.6	65.2	2328.9	521.7	1264.6	542.6
	%	*100*	*0.2*	*2.5*	*2.7*	*97.3*	*21.8*	*52.8*	*22.7*
	% Exp. Est.			*2.5*		*97.5*	*21.8*	*53.0*	*22.7*
	Employment	6883	56	171	227	6656	1488	3618	1550
	%	*100*	*0.8*	*2.5*	*3.3*	*96.7*	*21.6*	*52.6*	*22.5*
34	**Electrical Engineering**								
	Gross Output £m.	1955.7	86.9	112.7	199.6	1756.1	402.1	1073.0	281.0
	%	*100*	*4.4*	*5.8*	*10.2*	*89.8*	*20.6*	*54.9*	*14.3*
	% Exp. Est.			*6.0*		*94.0*	*21.5*	*57.4*	*15.1*
	Employment	20185	1132	1143	2275	17910	4096	10937	2877
	%	*100*	*5.6*	*5.7*	*11.3*	*88.7*	*20.3*	*54.2*	*14.2*
37	**Instrument Engineering**								
	Gross Output £m.	523.6	4.7	5.2	9.9	513.7	66.3	265.6	181.8
	%	*100*	*0.9*	*1.0*	*1.9*	*98.1*	*12.7*	*50.7*	*34.7*
	% Exp. Est.			*1.0*		*99.0*	*12.8*	*51.2*	*35.0*
	Employment	7429	185	73	258	7171	927	3709	2535
	%	*100*	*2.5*	*1.0*	*3.5*	*96.5*	*12.5*	*49.9*	*34.1*
	Total High Tech Industries								
	Gross Output £m.	6202.1	100.7	212.6	313.3	5888.8	1134.6	3200.5	1553.7
	%	*100*	*1.6*	*3.4*	*5.0*	*95.0*	*18.3*	*51.6*	*25.1*
	Employment	40160	1451	1538	2989	37171	7120	20777	9274
	%	*100*	*3.6*	*3.8*	*7.4*	*92.6*	*17.8*	*51.7*	*23.1*

NACE Code	Industry	TOTAL	DOMESTIC: Domestic only	DOMESTIC: Exporting Establish-ments	DOMESTIC: Total Domestic	EXPORT: Total Export	EXPORT: To UK	EXPORT: To Other EC	EXPORT: To Rest of World
14,49	**Other Manufacturing**								
	Gross Output £m	312.7	204.0	17.9	221.9	90.8	28.0	42.0	20.8
	%	*100*	*65.3*	*5.7*	*71.0*	*29.0*	*9.0*	*13.4*	*6.6*
	% Exp. Est.			*16.5*		*83.5*	*25.7*	*38.7*	*19.1*
	Employment	3281	769	414	1183	2098	646	972	480
	%	*100*	*23.5*	*12.6*	*36.1*	*63.9*	*19.7*	*29.6*	*14.6*
	Total Trad. Industry								
	Gross Output £m	7209.2	1667.1	2113.2	3780.3	3428.9	1252.4	1270.5	906.0
	%	*100*	*23.1*	*29.3*	*52.4*	*47.6*	*17.4*	*17.6*	*12.6*
	Employment	112877	31620	31291	62911	49966	20330	17346	12290
	%	*100*	*28.0*	*27.7*	*55.7*	*43.3*	*18.0*	*15.4*	*10.9*
	FOOD INDUSTRIES								
416-22	**Grain and Feed Stuff**								
	Gross Output £m	571.5	461.8	71.8	533.6	37.9	33.9	3.8	0.2
	%	*100*	*80.8*	*12.6*	*93.4*	*6.6*	*5.9*	*0.7*	-
	% Exp. Est			*65.5*		*34.5*	*30.9*	*3.4*	*0.2*
	Employment	2690	1841	556	2397	293	262	29	2
	%	*100*	*68.4*	*20.7*	*89.1*	*10.9*	*9.7*	*1.1*	*0.1*
419	**Bread, Biscuits etc.**								
	Gross Output £m	223.5	167.8	43.7	211.5	12.0	10.3	1.0	0.7
	%	*100*	*75.1*	*19.5*	*94.6*	*5.4*	*4.6*	*0.5*	*0.3*
	% Exp. Est			*78.4*		*21.6*	*18.5*	*1.8*	*1.3*
	Employment	5854	4183	1310	5493	361	309	30	22
	%	*100*	*71.4*	*22.4*	*93.8*	*6.2*	*5.3*	*0.5*	*0.4*
420-1	**Sugar, Chocolate etc.**								
	Gross Output £m	392.2	129.7	95.0	224.7	167.5	130.1	13.3	24.1
	%	*100*	*33.1*	*24.2*	*57.3*	*42.7*	*33.2*	*3.4*	*6.1*
	% Exp. Est.			*36.2*		*63.8*	*49.6*	*5.0*	*9.2*
	Employment	4168	1211	1070	2281	1887	1467	148	272
	%	*100*	*29.0*	*25.7*	*54.7*	*45.3*	*35.2*	*3.6*	*6.5*

NACE Code	Industry	TOTAL	DOMESTIC: Domestic only	DOMESTIC: Exporting Establish-ments	DOMESTIC: Total Domestic	EXPORT: Total Export	EXPORT: To UK	EXPORT: To Other EC	EXPORT: To Rest of World
	TOTAL MANUFACTURING (EXCL. MEAT AND DAIRY)								
	Gross Output £m	15734.3	2595.4	2723.6	5319.1	10415.2	2738.2	4851.7	2825.3
	%	*100*	*16.5*	*17.3*	*33.8*	*66.2*	*17.4*	*30.8*	*18.0*
	Employment	172005	41205	36708	77913	94092	30372	40151	23569
	%	*100*	*24.0*	*21.3*	*45.3*	*54.7*	*17.7*	*23.3*	*13.7*
	TOTAL MANUFACTURING (INCL. MEAT AND DAIRY)								
	Gross Output, £m	19740.7	3164.3	4048.3	7212.6	12528.1	3427.7	5354.3	3746.1
	%		*16.0*	*20.5*	*36.5*	*63.5*	*17.4*	*27.1*	*19.0*
	Employment	189784	45171	42188	87359	102425	33286	42314	26825
	%	*100*	*23.8*	*22.2*	*46.0*	*54.0*	*17.5*	*22.3*	*14.2*

Appendix 2: *Direct and Indirect Exports - Gross Output and Employment Shares, 1989*

		INDUSTRY GROUP															
		Non-Met. Minerals		*Trad. Chemicals*		*Trad.Met. and Eng.*		*Drink and Tobacco*		*Textiles Clothing, etc.*		*Wood, Paper, Printing*		*Misc.*		*Total Traditional*	
		G.O. *£m*	*Emp* *No.*	*G.O.* *£m*	*Emp* *No.*	*G.O.* *£m*	*Emp* *No.*	*G.O.* *£m*	*Emp* *No.*	*G.O.* *£m*	*Emp* *No.*	*G.O.* *£m*	*Emp* *No.*	*G.O.* *£m*	*Emp* *No.*	*G.O.* *£m*	*Emp* *No.*
Total Output		893.1	11,313	953.9	7,260	1666.8	29,590	838.6	6,566	853.5	23,813	1130.1	22,107	873.2	12,228	7209.2	112,877
Direct Domestic		438.6	5,864	352.2	2,494	772.3	15,848	519.6	4,379	333.4	11,062	928.4	18,493	435.8	4,771	3780.3	62,911
Direct Exports:	UK	65.4	783	182.6	1,445	308.7	4,717	105.9	726	262.3	7,068	162.0	2,837	165.5	2,754	1252.4	20,330
	Other EC	144.7	1,736	296.4	2,427	327.4	4,993	90.9	622	181.0	3,552	29.8	581	200.3	3,435	1270.5	17,346
	Rest of World	244.4	2,930	122.7	894	258.4	4,032	122.2	839	76.8	2,131	9.9	196	71.6	1,268	906.0	12,290
	Total	454.5	5,449	601.7	4,766	894.5	13,742	319.0	2,187	520.1	12,751	201.7	3,614	437.4	7,457	3428.9	49,966
Indirect Exports:	UK	10.8	144	5.4	38	23.2	476	4.0	34	21.9	726	30.3	604	15.9	174	111.5	2,196
	Other EC	17.9	239	6.3	45	31.7	650	3.5	29	20.3	673	26.2	522	22.4	245	128.3	2,403
	Rest of World	22.4	300	3.4	24	23.5	483	4.7	40	8.8	293	16.7	332	8.3	91	87.8	1,563
	Total	51.1	683	15.2	107	78.4	1,609	12.2	103	51.0	1,692	73.2	1,458	46.6	510	327.6	6,162
Total Exports:	UK	76.2	927	188.0	1,483	331.9	5,193	109.9	760	284.2	7,794	192.3	3,441	181.4	2,928	1363.9	22,526
	Other EC	162.6	1,975	302.7	2,472	359.1	5,643	94.4	651	201.3	4,225	56.0	1,103	222.7	3,680	1398.8	19,749
	Rest of World	266.8	3,230	126.1	918	281.9	4,515	126.9	879	85.6	2,424	26.6	528	79.9	1,359	993.8	13,853
	Total	505.6	6,132	616.8	4,873	972.9	15,351	331.2	2,290	571.1	14,443	274.9	5,072	484.0	7,967	3756.5	56,128
Net Domestic		387.5	5,181	337.1	2,387	693.9	14,239	507.4	4,276	282.4	9,370	855.2	17,035	389.2	4,261	3452.7	56,749

Appendix 2 (continued)

		INDUSTRY GROUP											
		Pharmaceutical		*ODP and Instr. Eng.*		*Elec. Eng.*		*Total High-Tech*		*Food Industry*[b]		*Total Manufacturing*[b]	
		G.O.	*Empl.*	*G.O.*	*Empl.*	*G.O.*	*Empl.*	*G.O.*	*Empl.*	*G.O.*	*Empl.*	*G.O.*	*Empl.*
		£m	*No.*	*£m*	*No.*	*£m*	*No.*	*£m*	*No.*	*£m*	*No.*	*£m*	*No.*
Total Output		1328.7	5,663	2917.7	14,312	1955.7	20,185	6202.1	40,160	2323.0	18,968	15734.3	172,005
Direct Domestic		38.6	229	75.1	485	199.6	2,275	313.3	2,989	1225.5	12,013	5319.1	77,913
Direct Exports:	UK	144.5	609	588.0	2,415	402.1	4,096	1134.6	7,120	351.2	2,922	2738.2	30,372
	Other EC	597.3	2,513	1530.2	7,327	1073.0	10,937	3200.5	20,777	380.7	2,028	4851.7	40,151
	Row	548.3	2,312	724.4	4,085	281.0	2,877	1553.7	9,274	365.6	2,005	2825.3	23,569
	Total	1290.1	5,434	2842.6	13,827	1756.1	17,910	5888.8	37,171	1097.5	6,955	10415.2	94,092
Indirect Exports:	UK	a	a	5.7	37	30.3	345	36.0	382	46.8	458	194.3	3,036
	Other EC	a	a	14.1	91	71.3	813	85.4	904	49.9	490	263.6	3,797
	Row	a	a	6.6	42	27.1	309	33.7	351	48.9	479	170.4	2,393
	Total	a	a	26.4	170	128.7	1,467	155.1	1,637	145.6	1,427	628.3	9,226
Total Exports:	UK	144.5	609	593.7	2,452	432.4	4,441	1170.6	7,502	398.0	3,380	2932.5	33,408
	Other EC	597.3	2,513	1544.3	7,418	1144.3	11,750	3285.9	21,681	430.6	2,518	5115.3	43,948
	Row	548.3	2,312	731.0	4,127	308.1	3,186	1587.4	9,625	414.5	2,484	2995.7	25,962
	Total	1290.1	5,434	2869.0	13,997	1884.8	19,377	6043.9	38,808	1243.1	8,382	11043.5	103,318
Net Domestic		38.6	229	48.7	315	70.9	808	158.2	1,352	1079.9	10,586	4690.8	68,687

Note: a) Indirect chemical exports attributed to traditional chemicals
b) Excluding meat and dairy industries.

Appendix 2 (continued)

		INDUSTRY GROUP															
		Non-Met. Minerals		*Trad. Chemicals*		*Trad.Met. and Eng.*		*Drink and Tobacco*		*Textiles Clothing, etc.*		*Wood, Paper, Printing*		*Misc.*		*Total Traditional*	
		G.O.	*Emp*	*G.O.*	*Emp*	*G.O.*	*Emp*	*G.O.*	*Emp*	*G.O.*	*Emp*	*G.O.*	*Emp*	*G.O.*	*Emp*	*G.O.*	*Emp*
		%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Direct Domestic		49.1	51.8	36.9	34.4	46.3	53.6	62.0	66.7	39.1	46.5	82.2	83.7	49.9	39.0	52.4	55.7
Direct Exports:	UK	7.3	6.9	19.1	19.9	18.5	15.9	12.6	11.0	30.7	29.7	14.3	12.8	19.0	22.5	17.4	18.0
	Other EC	16.2	15.4	31.1	33.4	19.7	16.9	10.8	9.5	21.2	14.9	2.6	2.6	22.9	28.1	17.6	15.4
	Rest of World	27.4	25.9	12.9	12.3	15.5	13.6	14.6	12.8	9.0	8.9	0.9	0.9	8.2	10.4	12.6	10.9
	Total	50.9	48.2	63.1	65.6	53.7	46.4	38.0	33.3	60.9	53.5	17.8	16.3	50.1	61.0	47.6	43.3
Indirect Exports:	UK	1.2	1.3	0.6	0.6	1.4	1.6	0.5	0.6	2.6	3.0	2.7	2.7	1.8	1.4	1.5	2.0
	Other EC	2.0	2.1	0.7	0.6	1.9	2.2	0.4	0.4	2.4	2.8	2.3	2.4	2.6	2.0	1.8	2.1
	Rest of World	2.5	2.6	0.3	0.3	1.4	1.7	0.6	0.6	1.0	1.3	1.5	1.5	0.9	0.8	1.2	1.4
	Total	5.7	6.0	1.6	1.5	4.7	5.5	1.5	1.6	6.0	7.1	6.5	6.6	5.3	4.2	4.5	5.5
Total Exports:	UK	8.5	8.2	19.7	20.5	19.9	17.5	13.1	11.6	33.3	32.7	17.0	15.5	20.8	23.9	18.9	20.0
	Other EC	18.2	17.5	31.8	34.0	21.6	19.1	11.2	9.9	23.6	17.7	4.9	5.0	25.5	30.1	19.4	17.5
	Rest of World	29.9	28.5	13.2	12.6	16.9	15.3	15.2	13.4	10.0	10.2	2.4	2.4	9.1	11.2	13.8	12.2
	Total	56.6	54.2	64.7	67.1	58.4	51.9	39.5	34.9	66.9	60.6	24.3	22.9	55.4	65.2	52.1	49.7
Net Domestic		43.4	45.8	35.3	32.9	41.6	48.1	60.5	65.1	33.1	39.4	75.7	77.1	44.6	34.8	47.9	50.3

Appendix 2 (continued)

		INDUSTRY GROUP											
		Pharmaceutical		*ODP and Instr. Eng.*		*Elec. Eng.*		*Total High-Tech*		*Food Industry*[b]		*Total Manufacturing*[b]	
		G.O.	*Empl*	*G.O.*	*Empl*	*G.O.*	*Empl*	*G.O.*	*Empl*	*G.O.*	*Empl*	*G.O.*	*Empl*
		%	%	%	%	%	%	%	%	%	%	%	%
Direct Domestic		2.9	4.1	2.6	3.4	10.2	11.3	5.0	7.4	52.8	63.3	33.8	45.3
Direct Exports:	UK	10.9	10.7	20.2	16.9	20.6	20.3	18.3	17.8	15.1	15.4	17.4	17.6
	Other EC	44.9	44.4	52.4	51.2	54.9	54.2	51.6	51.7	16.4	10.7	30.8	23.4
	Row	41.3	40.8	24.8	28.5	14.3	14.2	25.1	23.1	15.7	10.6	18.0	13.7
	Total	97.1	95.9	97.4	96.6	89.8	88.7	95.0	92.6	47.2	36.7	66.2	54.7
Indirect Exports:	UK	a	a	0.2	0.3	1.6	1.7	0.6	0.9	2.0	2.4	1.2	1.8
	Other EC	a	a	0.5	0.6	3.6	4.0	1.4	2.3	2.2	2.6	1.7	2.2
	Row	a	a	0.2	0.3	1.4	1.6	0.5	0.9	2.1	2.5	1.1	1.4
	Total	a	a	0.9	1.2	6.6	7.3	2.5	4.1	6.3	7.5	4.0	5.4
Total Exports:	UK	10.9	10.7	20.4	17.2	22.2	22.0	18.9	18.7	17.1	17.8	18.6	19.4
	Other EC	44.9	44.4	52.9	51.8	58.5	58.2	53.0	54.0	18.6	13.3	32.5	25.6
	Row	41.3	40.8	25.0	28.8	15.7	15.8	25.6	24.0	17.8	13.1	19.1	15.1
	Total	97.1	95.9	98.3	97.8	96.4	96.0	97.5	96.7	53.5	44.2	70.2	60.1
Net Domestic		2.9	4.1	1.7	2.2	3.6	4.0	2.5	3.3	46.5	55.8	29.8	39.9

Note: a) Indirect chemical exports attributed to traditional chemicals
b) Excluding meat and dairy industries.