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Changes in the Composition of Output and Employment

**Axel Mittelstädt,
Françoise Correia**

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WORKING PAPERS

No. 23: CHANGES IN THE COMPOSITION OF OUTPUT AND EMPLOYMENT

by

Axel Mittelstädt and Françoise Correia

Growth Studies Division

June 1985



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OECD ECONOMICS AND STATISTICS DEPARTMENT

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"Changes in the Composition of Output and Employment"

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Axel Mittelstädt and Françoise Correia

CHANGES IN THE COMPOSITION OF OUTPUT AND EMPLOYMENT

by Axel Mittelstädt
and Françoise Correia *

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CHANGES IN THE COMPOSITION OF OUTPUT AND EMPLOYMENT

Introduction

This paper examines the main determinants of compositional changes in private consumption, output and employment in the post-OPEC 1 period compared with earlier developments. An attempt is made to separate cyclical forces from more permanent ones. This, it is hoped, may shed some light on the likely behaviour of employment in a setting of revived economic growth.

The first part of the paper presents a brief overview of past trends for major categories of private consumption (food, other goods, private services, and energy), private sector output (mining, agriculture, manufacturing, construction and private services), sectoral employment, productivity and foreign trade shares. The second part shows empirical results from sectoral output-, private consumption- and sectoral productivity functions. Assisted by these findings a third and final part evaluates the likely evolution of sectoral output and employment in a period of faster economic growth and, as well, its implications for total employment and productivity in the private business sector.

I. Historical Overview

A. Private Consumption and Private Sector Output

Prior to the first oil price shock spending on both consumer goods (excluding food) (1) and private services rose relative to private consumption, with the growth in expenditure on goods slightly exceeding that for services (Table 1). Outlays on food declined relative to private consumption expenditure. This configuration appeared in nearly all countries (Appendix Table 1). In the post-OPEC 1 period, marked by a sharply reduced rise in private consumption expenditure, a major change occurred: outlays on goods (mostly manufactured ones) changed from a dynamic, rapidly growing component of private consumption, into a sluggish, slowly growing one lagging behind the average annual growth in private consumption by 0.7 per cent a year on average. By contrast, outlays on private services continued rising faster

than private consumption, broadly maintaining their growth differential vis-à-vis the average. In line with Engel's law, food outlays grew more slowly than the average in both periods.

The above developments were closely mirrored on the output side: in contrast with earlier trends, output in manufacturing after 1973 grew significantly less than total private sector output, while the production of private services continued to expand faster than the total, this shift gaining strength in nearly all countries (Table 1 and Appendix Table 2). In contrast, the share of agricultural production kept on falling. Comparing the structural changes on the output and the consumption side, two differences appear: first, output growth in manufacturing weakened more strongly than that for real consumer spending on consumer goods. Second, on the output side the shift to private services accelerated in the post-OPEC 1 period, while it continued largely unabated on the consumption side.

The aggregate trends described above conceal wide differences between countries:

- i) On the consumption side the shift to services lost momentum after 1973 in the United States, Japan, Belgium, Finland, and the Netherlands, while it gathered strength in France, Italy, Canada, Denmark, and, especially, in Norway. Germany was the only country where a shift to private services emerged only after the first oil price shock. In two countries (the United Kingdom and Sweden) the rise in consumer outlays for services began to lag behind private consumption growth after 1973 (Appendix Table 1); and
- ii) Japan and Denmark were the only two countries where manufacturing kept on enlarging its share in total private sector output after 1973, this shift mainly occurring at the expense of construction activity (Appendix Table 2).

B. Private Sector Employment

In both the pre- and post-OPEC periods the largest employment gains were generally recorded in the private service sector. But the pace of the associated employment shift changed after 1973, accelerating in the United Kingdom and Belgium and slowing down in Japan, Italy, Denmark, Finland, the Netherlands, Norway and Sweden. No changes occurred in the United States and Japan (Table 2). For manufacturing the employment picture was marked by sharply divergent trends during the period leading up to the first oil shock. In several European countries manufacturing employment shrank (United Kingdom, Belgium, Denmark, the Netherlands and Sweden), while in others it either expanded less rapidly (United States) or more strongly than total private employment (Japan, France, Italy, Finland and Norway). In the post-OPEC 1 period, however, the level of manufacturing employment fell in nearly all countries (except in the United States, Italy and Finland). Within each country, employment trends in manufacturing and the private service sector diverged more strongly, leading to increased sectoral employment dispersion. In agriculture, employment continued to decline, though at a falling rate.

Table 1

REAL PRIVATE CONSUMPTION AND SECTORAL OUTPUT
(Average Percentage Change at Annual Rate)

	14 Countries(a)				United States		
	Pre-OPEC I	Post-OPEC I II	Deceleration		Pre-OPEC I I	Post-OPEC I II	Deceleration I-II
			I	II			
<u>Real Private Consumption</u>							
Food(b)	2.8	1.9	0.9	0.9	1.9	2.1	-0.2
Other Goods(c)	6.0	2.0	4.0	4.0	4.7	1.8	2.9
Private Services(d)	5.7	3.4	2.3	2.3	5.1	3.2	1.9
Gross Rent, fuel, and power	5.2	3.7	1.5	1.5	4.6	3.6	1.0
Total	4.9	2.7	2.2	2.2	4.2	2.6	1.6
<u>Sectoral Output</u>							
Agriculture	1.4	1.1	0.3	0.3	0.0	1.9	-1.0
Mining and Quarrying	2.4	1.9	0.5	0.5	2.8	2.0	0.8
Manufacturing	6.2	1.7	4.5	4.5	5.0	1.2	3.8
Construction	3.9	-0.9	4.8	4.8	2.1	-1.7	3.8
Private Services (e)	5.5	3.3	2.2	2.2	4.7	3.2	1.5
Total	5.2	2.5	2.7	2.7	4.3	2.2	1.1

Source: OECD National Accounts. Note: Pre-OPEC I = 1960-73; post-OPEC I = 1973-81.

- Seven major countries plus Belgium, Denmark, Finland, Netherlands, Norway, Sweden and Australia.
- Including tobacco and beverages.
- Clothing, footwear, furniture, furnishings, household equipment and operation, transport and communication (including transport equipment).
- Medical care, health expenses, recreation, entertainment, education, cultural services and miscellaneous goods and services.
- Wholesale and retail trade, transport, storage, communication, finance, insurance, real estate, community, social and personal services.

Table 2
SECTORAL EMPLOYMENT TRENDS
(Average Percentage Change at Annual Rate)

	Pre-OPEC 1 I	Post-OPEC 1 II	Deceleration I-II
UNITED STATES (1968-73; 1973-81)			
Agriculture	-0.3	-0.3	0
Mining and Quarrying	0.7	7.5	-6.7
Manufacturing	0.2	0.2	0
Construction	3.4	1.4	2.0
Private Services (1)	3.2	3.2	0
Total (2)	2.1	2.1	0
JAPAN (1970-73; 1973-81)			
Agriculture	-5.2	-2.0	-3.2
Mining and Quarrying	-5.4	-2.4	-3.0
Manufacturing	1.3	-0.4	1.7
Construction	5.9	1.6	4.3
Private Services (1)	2.8	2.3	0.5
Total (2)	0.8	0.7	0.1
GERMANY (1960-73; 1973-80)			
Agriculture	-3.5	-3.0	-0.5
Mining and Quarrying	-3.8	-1.1	-2.7
Manufacturing	0	-1.3	1.3
Construction	-0.4	-1.5	1.1
Private Services (1)	1.1	0.6	0.5
Total (2)	-0.3	-0.8	0.5
FRANCE (1970-73; 1973-81)			
Agriculture	-4.9	-2.3	2.6
Mining and Quarrying	-4.6	-2.9	-1.7
Manufacturing	1.6	-1.2	2.8
Construction	-0.1	-1.2	1.1
Private Services (1)	...	...	...
Total (2)	0.5	-0.1	0.6

Source: OECD National Accounts.

1. Including wholesale and retail trade, transport, storage, communication, finance, insurance, real estate, community, social, and personal services.
2. Including electricity, gas, and water.

Table 2 (Continued)
 SECTORAL EMPLOYMENT TRENDS
 (Average percentage change at annual rate)

	Pre-OPEC 1	Post-OPEC 1	Deceleratic
	I	II	I-II
UNITED KINGDOM (1961-73; 1973-81)			
Agriculture	-3.0	-1.5	-1.5
Mining and Quarrying	-4.1	-0.8	-3.3
Manufacturing	-0.7	-2.5	1.8
Construction	0.3	-2.0	2.3
Private Services (1)	0.3	1.0	-0.7
Total (2)	-0.5	-0.8	0.3
ITALY (1964-73; 1973-81)			
Agriculture	-3.3	-2.1	-1.2
Mining and Quarrying	...	...	...
Manufacturing	0.7	0.1	0.6
Construction	-1.8	-0.1	-1.7
Private Services (1)(3)	1.2	2.3	-1.1
Total (2)	-0.7	0.5	-1.2
BELGIUM (1970-73; 1973-81)			
Agriculture	-5.4	-2.8	-2.6
Mining and Quarrying	-5.5	-4.3	-1.2
Manufacturing	-0.1	-2.7	+2.6
Construction	-1.4	-1.1	-0.3
Private Services (1)	2.4	1.4	1.0
Total (2)	0.5	-0.7	1.2
DENMARK (1966-73; 1973-81)			
Agriculture	-3.6	-2.0	-1.6
Mining and Quarrying	0	-3.7	3.7
Manufacturing	-0.3	-2.0	1.7
Construction	1.1	-2.6	3.7
Private Services (1)	1.1	0	1.1
Total (2)	-0.2	-1.2	1.0

Source: OECD National Accounts.

1. Including wholesale and retail trade, transport, storage, communication, finance, insurance, real estate, community, social, and personal services.
2. Including electricity, gas, and water.
3. Excluding community, social, and personal services.

Table 2 (Continued)

SECTORAL EMPLOYMENT TRENDS
(Average percentage change at annual rate)

	Pre-OPEC 1	Post-OPEC 1	Deceleration
	I	II	I-II
FINLAND (1964-73; 1973-81)			
Agriculture	-3.8	-3.1	-0.7
Mining and Quarrying	1.7	0	1.7
Manufacturing	2.8	0.4	2.4
Construction	0.7	-2.2	2.9
Private Services (1)	2.1	0.5	1.6
Total (2)	0	-0.5	0.5
NETHERLANDS (1969-73; 1973-77)			
Agriculture	-2.1	-1.3	-0.8
Mining and Quarrying	-12.5	-6.9	-5.6
Manufacturing	-1.4	-1.7	0.3
Construction	-1.1	-1.6	0.5
Private Services (1)	1.7	1.4	0.3
Total (2)	0	-0.1	0.1
NORWAY (1964-73; 1973-77)			
Agriculture	-3.5	-1.7	-1.8
Mining and Quarrying	2.5	3.0	-0.5
Manufacturing	0.8	-0.7	1.5
Construction	0.7	2.0	-1.3
Private Services (1)	1.5	1.6	-0.1
Total (2)	0.2	0.5	-0.3
SWEDEN (1964-73; 1973-81)			
Agriculture	-4.0	-2.2	-1.8
Mining and Quarrying	-1.9	-1.4	-0.5
Manufacturing	-0.6	-0.8	0.2
Construction	0	-1.0	1.0
Private Services (1)	1.0	0.8	0.2
Total (2)	-0.6	-0.3	-0.3

Source: OECD National Accounts.

1. Including wholesale and retail trade, transport, storage, communication, finance, insurance, real estate, community, social, and personal services.
2. Including electricity, gas, and water.

Several features of the movements in employment shares over the period 1970-1981 stand out:

- i) In the early 1970s inter-country differences between sectoral employment shares narrowed in agriculture, manufacturing, construction and the private service sector. Thereafter such differences widened for manufacturing and construction, remained stable for private services, and continued to diminish for agriculture (Table 3);
- ii) In agriculture the relative decline in employment was generally inversely related to its initial share;
- iii) The relative rise in private service sector employment was particularly marked in France, the United Kingdom, Belgium and the Netherlands and small in the United States, Germany, Finland, Norway and Sweden;
- iv) The relative decline in manufacturing employment was small in the case of Japan, Germany, France, Denmark, Norway and Sweden and marked for the United States, the United Kingdom, Belgium and the Netherlands. In contrast, the employment share stabilised in Italy and increased in Finland;
- v) For the United States, high-technology industries (defined as industries with a comparatively high share of expenditures on research and development in value added) recorded above average gains in employment, with below average increments taking place in labour-intensive industries (2); and
- vi) In most countries manufacturing and private services combined accounted for roughly 80 per cent of private sector employment in 1981, representing a moderate rise over the 1970 figure of 75 per cent.

C. Sectoral Productivity

Given the above variations in output and employment trends, the following profile of sectoral productivity gains emerged: in manufacturing, increases in output per employed person generally remained above those for the total private sector. The productivity differential narrowed, however, after 1973, reflecting a comparatively strong deceleration of output growth in manufacturing (Table 4). For the United States the slowdown of productivity gains in manufacturing was more pronounced than for Japan and several European countries including Germany and France. Productivity gains in the private service sector stayed below the average advance, but the shortfall diminished after 1973 (Italy, Belgium, Finland and Norway). In some countries, productivity in the service sector grew faster than the average (United States, France and the Netherlands) or even outpaced gains in manufacturing (Germany, Norway and Sweden). Assisted by these developments, relative output prices (sectoral gross value added deflator divided by total output deflator) for private services began to fall in some countries, e.g. United States, Germany and Norway, or ceased to rise (Sweden).

Table 3
EMPLOYMENT SHARES (IN PER CENT) (1)

	Agriculture	Mining and Quarrying	Manufacturing	Electricity, Gas, and Water	Construction	Private Services (2)	Total (Private Sector)
1970							
UNITED STATES	5.7	0.9	28.3	1.0	6.3	57.8	100.0
JAPAN	21.1	0.5	28.8	0.6	8.7	40.3	100.0
GERMANY	9.9	1.4	44.1	1.1	10.1	33.4	100.0
FRANCE	15.8	1.3	31.2	1.0	11.4	39.9	100.0
UNITED KINGDOM	3.8	2.0	41.3	1.8	7.4	43.7	100.0
ITALY	21.3	...	32.4	1.0	12.0	33.3 (3)	...
BELGIUM	5.7	1.7	37.8	1.1	9.8	43.9	100.0
DENMARK	14.0	0.1	30.7	0.8	11.9	42.5	100.0
FINLAND	25.3	0.3	28.0	1.1	10.7	34.6	100.0
NETHERLANDS	8.2	0.4	29.9	1.1	12.5	47.9	100.0
NORWAY	15.4	0.7	29.9	1.2	10.4	42.4	100.0
SWEDEN	10.8	0.6	34.2	0.9	12.2	41.3	100.0
Coefficient of Variation	0.51	...	0.15	...	0.18	0.16	
Average (unweighted)	13.1	...	33.1	...	10.3	41.7	
1973							
UNITED STATES	5.5	0.9	27.1	1.0	6.7	58.8	100.0
JAPAN	17.1	0.4	29.4	0.6	10.0	42.5	100.0
GERMANY	8.4	1.1	43.3	1.1	10.3	35.8	100.0
FRANCE	13.1	1.1	32.2	1.0	11.2	41.4	100.0
UNITED KINGDOM	3.4	1.8	39.1	1.5	8.4	45.8	100.0
ITALY	19.6	...	33.3	1.0	10.8	35.2	...
BELGIUM	4.6	1.4	37.1	1.1	9.2	46.6	100.0
DENMARK	12.7	0.2	30.8	0.8	11.5	44.0	100.0
FINLAND	20.7	3.9	30.3	1.2	11.1	32.8	100.0
NETHERLANDS	7.7	0.3	28.4	1.1	11.8	50.7	100.0
NORWAY	12.9	0.8	30.7	1.3	10.2	44.1	100.0
SWEDEN	9.4	0.6	34.2	1.0	11.7	43.1	100.0
Coefficient of Variation	0.49	...	0.14	...	0.14	0.14	
Average (unweighted)	11.3	...	33.0	...	10.2	44.2	
1981							
UNITED STATES	4.5	1.3	23.2	1.0	6.2	63.8	100.0
JAPAN	13.4	0.3	26.9	0.7	10.8	47.9	100.0
GERMANY	6.6	1.1	41.3	1.3	9.6	40.1	100.0
FRANCE	10.6	0.8	28.9	1.1	10.1	48.5	100.0
UNITED KINGDOM	3.2	1.8	32.7	1.8	7.4	53.1	100.0
ITALY	15.5	...	32.4	1.1	10.3	40.7 (3)	...
BELGIUM	3.7	1.0	30.0	1.2	8.8	55.3	100.0
DENMARK	11.6	0.1	28.4	1.0	9.9	49.0	100.0
FINLAND	15.7	0.4	33.0	1.6	9.5	39.8	100.0
NETHERLANDS	6.9	0.1	24.4	1.2	10.3	57.1	100.0
NORWAY	10.3	1.0	27.8	1.5	11.5	47.9	100.0
SWEDEN	7.8	0.6	32.7	1.2	11.0	46.7	100.0
Coefficient of Variation	0.46	...	0.15	...	0.15	0.14	
Average (unweighted)	9.2	...	30.1	...	9.6	49.2	

Source: OECD National Accounts.

1. Share of sectoral in total private sector employment (including government enterprises).
2. Including wholesale and retail trade, transport storage, communication, finance, insurance, real estate, community, social, and personal services.
3. Excluding community, social, and personal services.

Table 4

SECTORAL PRODUCTIVITY TRENDS (1)
(Average percentage change at annual rate)

	Pre-OPEC 1	Post-OPEC 1	Deceleration
	I	II	I-II
<u>UNITED STATES (1968-73; 1973-81)</u>			
Agriculture	2.5	2.3	0.2
Mining and Quarrying	1.0	-5.1	6.1
Manufacturing	3.7	1.1	2.6
Construction	-2.2	-2.9	0.7
Private Services (2)	1.5	0.2	1.3
Total	1.7	0.1	1.6
<u>JAPAN (1970-73; 1973-81)</u>			
Agriculture	11.7	0.3	11.4
Mining and Quarrying	11.1	3.9	13.2
Manufacturing	8.4	6.5	1.9
Construction	3.0	-0.6	3.6
Private Services (2)	8.4	2.6	5.8
Total	7.7	3.3	4.4
<u>GERMANY (1960-73; 1973-80)</u>			
Agriculture	6.2	4.9	1.3
Mining and Quarrying	3.8	-0.9	4.7
Manufacturing	5.0	3.0	2.0
Construction	2.8	1.7	1.1
Private Services (2)	3.9	3.4	0.5
Total	4.6	3.2	1.4
<u>FRANCE (1970-73; 1973-81)</u>			
Agriculture	8.5	2.7	5.8
Mining and Quarrying	1.8	1.0	0.8
Manufacturing	4.9	3.3	1.6
Construction	2.0	0.7	1.3
Private Services (2)	...	2.7 (3)	...
Total	5.2	2.6	2.6

1. Output per employed persons.
2. Including wholesale and retail trade, transport, storage, communication, financial, insurance, real estate, community, social and personal services.
3. 1975-81.

Source: OECD National Accounts.

Table 4 (Continued)
 SECTORAL PRODUCTIVITY TRENDS
 (Average percentage change at annual rate)

	Pre-OPEC 1	Post-OPEC 1	Deceleration
	I	II	I-II
<u>UNITED KINGDOM (1961-73; 1973-81)</u>			
Agriculture	6.8	3.3	3.5
Mining and Quarrying	2.9	17.2	-14.3
Manufacturing	4.0	0.6	3.4
Construction	1.3	-1.5	2.8
Private Services (2)	...	...	...
Total	3.4	...	...
<u>ITALY (1960-73; 1973-81)</u>			
Agriculture	7.2	4.1	3.1
Mining and Quarrying	...	...	...
Manufacturing	...	...	...
Construction	3.1	0.4	2.7
Private Services (2)	4.5	0.8	3.7
Total	6.4	2.0	4.4
<u>BELGIUM (1970-73; 1973-81)</u>			
Agriculture	9.9	4.0	5.9
Mining and Quarrying	0.6	-0.2	0.8
Manufacturing	7.2	4.4	2.8
Construction	4.4	0.5	3.9
Private Services (2)	2.5	0.5	2.0
Total	5.0	2.3	2.7
<u>DENMARK (1966-73; 1973-81)</u>			
Agriculture	3.7	6.2	-2.5
Mining and Quarrying	7.6	13.2	-5.6
Manufacturing	5.3	3.9	1.4
Construction	0.7	-3.9	4.6
Private Services (2)	3.5	1.7	1.8
Total	3.8	2.4	1.4

Source: OECD National Accounts.

Table 4 (Continued)
 SECTORAL PRODUCTIVITY TRENDS
 (Average percentage change at annual rate)

	Pre-OPEC 1	Post-OPEC 1	Deceleration
	I	II	I-II
<u>FINLAND (1960-73; 1973-81)</u>			
Agriculture	5.4	5.1	0.3
Mining and Quarrying	2.6	2.9	-0.3
Manufacturing	4.4	3.0	1.4
Construction	3.1	2.6	0.5
Private Services (2)	3.2	2.6	0.6
Total	4.7	3.2	1.5
<u>NETHERLANDS (1969-73; 1973-77)</u>			
Agriculture	7.4	4.4	3.0
Mining and Quarrying	34.9	37.7	-1.8
Manufacturing	...	...	...
Construction	2.6	0.5	2.1
Private Services (2)	5.5	3.8	1.7
Total	5.5	2.6	2.9
<u>NORWAY (1962-73; 1973-77)</u>			
Agriculture	5.3	6.4	-1.1
Mining and Quarrying	10.9	37.2	-26.3
Manufacturing	4.0	0.5	3.5
Construction	3.2	2.2	1.0
Private Services (2)	2.0	2.7	-0.7
Total	3.5	3.5	0
<u>SWEDEN (1963-73; 1973-81)</u>			
Agriculture	7.5	2.1	5.4
Mining and Quarrying	8.3	-3.6	11.9
Manufacturing	5.3	0.7	4.6
Construction	2.1	1.8	0.3
Private Services (2)	2.1	1.5	0.6
Total	4.2	1.5	2.7
<u>Weighted Average</u>			
Agriculture	...	...	...
Mining and Quarrying	4.2	-0.9	5.1
Manufacturing	4.8	2.3	2.5
Construction	0.1	-1.4	1.5
Private Services (2)	3.1	1.2	1.9
Total	3.5	1.4	2.1

Source: OECD National Accounts.

Table 5
RELATIVE PRODUCTIVITY LEVEL IN THE PRIVATE SERVICE SECTOR (1)

	1970	1973	1981
United States	100.3	88.9	81.8
Japan	103.6	97.7	67.6
Germany	124.8	119.8	117.5
France	103.0	100.8	91.2
Belgium	142.8	125.7	94.7
Denmark	164.5	155.8	131.0
Finland	98.8	101.1	95.2
Norway	126.2	123.2	136.5
Sweden	94.0	88.7	95.8

Source: OECD National Accounts.

Note: Private Services include wholesale, retail trade, transport, storage, communication, finance, insurance, real estate, community, social, and personal services.

1. Value added per employed person in the private service sector at 1975 prices divided by corresponding value for manufacturing multiplied by 100.

Regarding productivity levels, many countries in the early 1970s recorded higher values in the private service sector (at 1975 prices) than in manufacturing (Table 5). In three countries the excess still prevailed in the early 1980s (Germany, Denmark, and Norway). In most others it gave way to a shortfall (United States, France, Belgium, Finland and, especially in Japan). In Sweden, the productivity level for private services has always stayed below that for manufacturing, though by variable margins.

D. Foreign Trade Shares

On the external side, the share of exports of goods and services in GDP continued to rise in nearly all OECD countries after the first oil price shock, in many cases at an accelerating rate (Table 6a). Large increases in the export share were recorded for Germany, Italy, Austria, Belgium, Denmark and the Netherlands. The acceleration of this rise was strong for Japan, Germany, Italy, Austria, Belgium, Denmark and the Netherlands. By contrast in Portugal and Australia the export share declined.

On the import side, the rise in the share of imports of goods and services in GDP accelerated after 1973 except in some of the energy-producing countries (United Kingdom, Canada and Norway). For about one half of the countries shown in Table 6 the export share after 1973 rose faster than the import share, or, for a few countries, the increase coincided with a decline in the import share. In volume terms, however, the rise in the import share slowed substantially, while that for the export share accelerated in several countries (the main exception being the United States) (Table 6b). The divergent movements for volume export and import shares largely derived from efforts to channel resources into the export sector and to reduce the energy intensity of production. Both forces are, of course, intimately linked to the two oil price explosions. Given the broadly unchanged commodity composition for exports the rising export shares implied a growing dependence of total employment on export sales. On the import side, the picture is more complex as the fall in the import share or its reduced rise was in part associated with a fall in the amount of energy used per unit of output and, in isolated cases, with sharp gains in domestic energy production. However, given the typically low employment content of energy production the movements of import shares after 1973 cannot be viewed as a form of import substitution leading to strong employment gains at home and employment losses outside the OECD area.

Regarding services the shares of recorded exports and, notably imports in aggregate trade flows decreased during the 1970s. Hence, for exports the shift of domestic resources into the external sector was mainly concentrated on goods, while for imports the relative decline in services added to the reduction in domestic absorption (coming from the fall in volume imports of goods relative to real GDP). It is possible though that the rising importance of unrecorded international flows of services renders the above interpretation invalid (3).

Table 6 (a)
EXPORT AND IMPORT SHARES (1)
(Value shares)

	Export shares					Annual Rise in Export Shares (1)		Import shares					Annual Rise in Import Shares (1)	
	1960	1970	1973	1981	1982	1960- 1973	1973- 1982	1960	1970	1973	1981	1982	1960- 1973	1973- 1982
United States	5.1	5.7	6.9	9.7	8.6	0.13	0.19	4.4	5.5	6.8	10.4	9.5	0.18	0.31
Japan	10.8	10.8	10.0	15.0	14.9	-0.06	0.54	10.4	9.5	10.0	14.2	14.1	-0.03	0.45
Germany	19.0	21.2	22.1	29.9	31.1	0.24	0.99	16.5	19.1	19.2	29.1	28.6	0.21	1.05
France	15.0	16.3	18.2	23.8	23.2	0.25	0.55	12.9	15.8	17.6	25.3	25.5	0.37	0.87
United Kingdom	21.1	23.5	24.2	27.5	27.0	0.24	0.31	22.5	22.4	26.5	24.5	24.7	0.31	-0.20
Italy	14.1	17.8	18.8	26.7	26.7	0.36	0.88	14.3	17.2	20.9	28.6	27.7	0.51	0.75
Canada	17.5	23.4	23.7	27.8	26.2	0.48	0.28	18.7	20.6	22.5	26.6	22.2	0.29	-0.03
Austria	25.2	32.4	32.4	41.3	41.4	0.56	1.00	25.0	31.5	32.0	42.3	39.1	0.54	0.79
Belgium	32.9	43.9	47.5	64.8	69.3	1.13	2.42	33.9	41.6	45.5	67.3	70.7	0.89	2.80
Denmark	33.9	27.9	28.5	36.2	35.6	-0.42	0.78	34.9	30.9	30.4	35.6	35.2	-0.34	0.53
Finland	22.7	26.2	25.9	34.7	31.8	0.25	0.66	23.4	27.4	26.7	33.1	31.3	0.26	0.51
Netherlands	48.1	44.9	47.2	57.9	57.5	-0.07	1.14	46.2	46.6	44.0	54.3	53.8	-0.17	1.09
Norway	41.3	41.8	43.6	47.7	45.5	0.17	0.21	43.1	43.1	44.1	39.8	39.9	0.07	-0.47
Portugal	16.9	23.5	25.8	26.8	25.6	0.69	-0.02	23.2	30.4	33.1	45.8	44.4	0.76	1.25
Spain	10.4	13.5	14.4	17.3	18.3	0.31	0.43	7.5	14.4	15.5	19.4	19.9	0.61	0.49
Sweden	22.9	24.1	27.4	30.4	32.5	0.34	0.57	23.5	24.7	24.6	30.7	33.4	0.09	0.97
Switzerland	29.3	32.8	30.9	37.4	35.4	0.12	0.50	29.6	34.5	32.0	38.4	35.0	0.19	0.33
Turkey	6.2	5.9	8.9	11.1	14.7	0.21	0.65	8.5	8.6	11.3	16.9	18.2	0.21	0.77
Australia	14.8	14.9	15.2	15.1	15.0	0.03	-0.03	17.8	15.1	15.1	19.1	17.1	-0.20	0.22
New Zealand	22.3	22.2	24.4	28.3	28.3	0.16	0.43	24.6	25.0	24.3	31.4	31.8	-0.02	0.84

1. Share of exports (imports) of goods and services in GDP in purchasers' values.
2. Average annual rise in percentage points.

Source: OECD National Accounts.

Table 6 (b)
EXPORT AND IMPORT SHARES (1)
(Volume Shares)

	Export shares					Annual Rise in Export Shares (1)		Import shares					Annual Rise in Import Shares (1)	
	1960	1970	1973	1981	1982	1960-1973	1973-1982	1960	1970	1973	1981	1982	1960-1973	1973-1982
United States	5.5	6.8	7.8	9.6	9.0	0.18	0.13	5.8	8.4	9.0	9.7	10.1	0.25	0.12
Japan	6.3	9.6	10.2	18.2	18.2	0.30	0.89	8.7	11.8	13.6	12.3	12.3	0.38	-0.14
Germany	15.8	21.0	23.5	29.9	31.3	0.59	0.87	12.8	19.8	21.4	25.9	26.1	0.66	0.52
France	11.7	15.6	18.6	24.6	23.4	0.53	0.56	10.5	16.0	19.8	25.3	25.9	0.72	0.68
United Kingdom	19.3	19.6	23.5	29.4	29.1	0.32	0.62	22.9	25.7	29.3	29.6	29.8	0.49	0.06
Italy	11.3	18.6	20.3	27.5	28.2	0.69	0.88	13.4	22.3	25.0	27.2	27.9	0.89	0.32
Canada	18.2	26.2	26.7	26.7	27.2	0.65	0.06	17.9	21.1	24.1	23.8	21.3	0.48	-0.31
Austria	20.2	30.2	32.6	43.8	44.7	0.95	1.34	20.6	29.7	33.7	41.4	40.1	1.01	0.71
Belgium	33.1	49.5	57.4	64.8	65.3	1.87	0.88	34.7	48.7	57.1	61.8	61.2	1.72	0.46
Denmark	22.8	27.0	28.8	36.0	35.5	0.46	0.52	24.7	32.0	33.0	31.6	31.4	0.64	-0.18
Finland	22.5	28.4	29.4	34.3	32.2	0.53	0.31	22.2	29.3	29.5	28.0	27.7	0.56	-0.20
Netherlands	31.0	42.3	51.2	54.0	54.4	1.55	0.36	29.9	46.1	50.1	48.4	49.7	1.55	-0.04
Norway	33.4	40.5	44.2	43.1	42.3	0.83	-0.21	33.2	45.1	47.5	40.0	42.6	1.10	-0.54
Portugal	19.3	25.3	26.8	25.0	25.6	0.58	-0.13	25.5	35.2	39.7	36.5	37.3	1.09	-0.27
Spain	8.6	12.7	14.3	18.2	19.3	0.44	0.56	7.0	14.5	17.3	18.3	18.9	0.79	0.18
Sweden	20.4	26.6	31.2	32.5	33.9	0.83	0.30	21.8	28.2	28.3	28.0	29.2	0.50	0.10
Switzerland	23.0	29.1	31.3	39.9	39.1	0.64	0.87	20.5	29.2	32.1	40.1	39.6	0.89	0.83
Turkey	5.5	5.9	8.4	9.0	11.5	0.22	0.34	11.3	12.8	15.6	9.0	9.2	0.33	-0.71
Australia	12.8	15.3	14.3	15.6	16.1	0.12	0.20	15.0	14.6	15.9	17.6	16.1	0.07	0.02
New Zealand	19.9	24.0	22.3	29.1	29.5	0.18	0.80	28.1	31.3	36.0	34.4	34.1	0.61	-0.21
OECD Total	..	..	16.7	..	20.6	..	0.43			18.2	..	19.4	..	0.13

1. Share of volume trade in real GDP (national accounts data).
2. Average annual rise in percentage points.

Source: OECD National Accounts.

II. Main Determinants

A. Theoretical considerations

In a closed economy the structure of output largely depends upon consumer preferences, relative prices at the producer and user end, and the cyclical position of the economy. In an open economy, the composition of output is, in addition, influenced by the structure of export and import demand. This, in turn, depends upon consumer preferences abroad and, as well, upon relative foreign trade prices (including services).

There is a wide range of income elasticities for different categories of consumer goods and services. Consumer expenditure on food, for example, is known to grow less rapidly than disposable income ("Engel's law"). Conversely, in a growing economy rising proportions of income are devoted to services ("Fourastié's law"). A multitude of influences account for this, including increased weekly leisure time, extended holidays, rising participation rates for married women, saturation effects for certain consumer durables, and a stronger complementarity relationship between purchases of goods and those of services (4). The forces circumscribed by Engel's and Fourastié's laws can be called structural or trend factors, because they alone determine the structure of private consumption and output when incomes rise in line with trend (holding relative prices constant).

The term "trend income growth" has, of course, different meanings: it could correspond to real income gains consistent with potential output growth. It could also be equal to average (long-term) rises in actual income (linear trend); and finally, it could be synonymous with some kind of variable average income gains, such trend values being based upon moving averages. In a world of unstable income growth and adaptive medium-term income expectations a variable trend may be particularly convenient to use in empirical work.

Distinct from the structural forces cited above are cyclical influences. The aggregate savings ratio is known to vary cyclically, but the degree of cyclical sensitivity may differ strongly across the spectrum of goods and services. Consumer demand for goods, for example, especially consumer durables, may react more strongly to cyclical income variations than the demand for services (5). In a recession, goods purchases may be postponed reflecting reduced income expectations due to declines in household incomes. Such income decreases may result from short-time work and/or unemployment. In addition, fears of loss of job and high real interest rates (both of which are factors stimulating household savings) may further depress the demand for consumer goods (6). Conversely, in an upswing (with income expectations rising), an increasing share of actual income may be spent on consumer goods (cyclical catch-up effect) (7).

In a world of one consumer good and one consumer service and holding relative prices constant, consumer outlays for private services might therefore respond more strongly to increases in trend real income than those on goods, while reacting less strongly to cyclical variations. In these conditions, the structure of private consumption would typically change in the following way over the cycle: in a cyclical downswing, outlays on goods would decline relative to income, reflecting greater cyclical sensitivity and lower

responsiveness to trend income gains. The opposite movements would emerge for services whose share in private consumption expenditure increases strongly. Hence, cyclical forces reinforce the influence of trend factors. In contrast, in a cyclical expansion a rising share of consumption expenditure would be devoted to goods purchases (greater cyclical sensitivity), but this rise would be mitigated by lower trend responsiveness. Once again, the opposite constellation would prevail for services. Here, cyclical forces dampen the effects from the structural factors.

Finally, apart from structural and cyclical influences, relative prices co-determine the structure of private consumption and output. This normally occurs through three main channels: relative consumer prices, relative factor prices (affecting the optimal factor mix), and relative foreign trade prices (including services). While sectoral output and relative output prices are negatively correlated, the relationship between output and relative foreign trade prices is indeterminate: normally output falls with a rise in export prices relative to import prices, reflecting reduced competitiveness. But output may also rise in response to improved profitability, this case being the likely outcome if relative foreign trade prices also rise in main competing countries.

Given the above line of reasoning, the interaction of cyclical and structural forces as main determinants of shifts in the structure of output and private consumption has been examined using two major approaches:

- i) in a first step, log levels of sectoral output, sectoral productivity, and values for broadly corresponding categories of real private consumption expenditure are regressed on a constant term, on trend values for aggregate output (output functions), and real disposable income (private consumption functions), on cyclical deviations of output and disposable income from trend, and on relative prices (8). The trend rise in real GDP and real disposable income is calculated from the Phase-Average Trend Method (PAT) of the United States National Bureau of Economic Research which renders trends variable over time (9). Alternatively, linear trends are used; and
- ii) in a second step, first difference form equations are employed regressing the above variables on a constant term (as a rough proxy for trend or structural factors), aggregate output or real disposable income (as a rough proxy for cyclical forces), and relative prices.

Finally, in order to test for parameter shifts, cross-country and time-series data are pooled in first difference form for two sub-periods (pre-OPEC 1 and post-OPEC 1), while in the level equations dummy variables are used for the post-OPEC 1 period in both multiplicative and additive form. The description of empirical results presented below begins with output-and private consumption functions followed by sectoral productivity functions.

B. Sectoral Output Functions

For many countries the empirical results show larger output gains in the private service sector than in manufacturing for a given rise in trend real GDP (Table 7). This result is obtained irrespectively of whether a phased or a linear trend is used. For a few countries, however, manufacturing output appears to react more strongly to changes in trend real GDP than private service production (Japan, France, Belgium, and Finland) - a counter-intuitive result. In the case of Japan this may reflect export-oriented industrial policies aimed at gaining market shares in international trade over the longer term. The difference between sectoral trend responsiveness is pronounced for Japan, Germany, the United Kingdom and Denmark, suggesting a strong weight of structural factors in altering the composition of output. By contrast, the difference is small for the United States, Canada, Belgium, and Finland.

The empirical estimates also indicate a wide range of elasticities of sectoral output with respect to trend real GDP across countries, with low trend co-efficients for manufacturing being recorded for the United Kingdom, Canada, Denmark, and Sweden, and high values for Japan, Belgium, and Finland. Regarding private services there are low trend elasticities for France, and Canada, and high values for Germany, Belgium, Denmark, and Finland. In most cases the trend co-efficients change little when a dummy variable for the post-1973 period is employed.

As expected, output in manufacturing is shown to be more sensitive to cyclical fluctuations than private service production (except for Denmark). This result emerges irrespectively of what kind of trend is used in the equations. The difference between sectoral cyclical responsiveness is generally wide, far exceeding that between trend co-efficients. This points to cyclical variations being associated with powerful short-term changes in the composition of output. For countries with a comparatively high trend responsiveness for private services and a low one for manufacturing, these cyclical forces accelerate the shift away from manufacturing in a recession, while they slow this shift in an economic expansion. In contrast, for countries like Japan (combining a high trend elasticity for manufacturing and a comparatively low one for private services) the interaction between cyclical and structural forces is different. Cyclical factors reinforce the shift to manufacturing output in an upswing, but dampen this shift in a downswing.

The structure of the empirical results remains intact when an additive or a multiplicative dummy variable for the post OPEC 1 period is introduced and when time-series and cross-country data are pooled in the first difference form (Table 8). On the basis of these results, deviations of real GDP from a depressed trend tend to yield shifts in output similar to those from a buoyant one (broadly unchanged difference in cyclical sensitivity), while trend parameters hardly change with the level of the trend. There is some indication, however, that the cyclical sensitivity of private service output has increased over time: pooled data calculations yield a higher real GDP co-efficient for the post-OPEC period (Table 8). In addition, level form equations for different overlapping periods show a rise in the cyclical variability for several countries -- a result which may be an expression of a stronger complementarity relationship between manufacturing output and private service production (4).

For most countries the co-efficient of the relative output price carries the expected negative sign (Table 7). But it reaches statistical significance only for the United States, Japan, the United Kingdom, Canada, Denmark, and Norway (manufacturing) and Japan, Denmark, Finland, and Norway (private services). The price co-efficients often vary across countries, and there is little evidence of output in manufacturing reacting more strongly to changes in relative output prices than in the private service sector. Exceptions are the United States, Canada, and Denmark. When time-series and cross-country data are pooled, a much higher price coefficient is obtained for manufacturing than for private services for both the pre-OPEC 1 and the post-OPEC 1 periods (Table 8). However, since the percentage changes in these equations are weighted, this finding partly reflects the differential response of sectoral output to price in the United States.

With few exceptions the empirical results show little or no response of sectoral output to changes in relative foreign trade prices (Tables 7 and 8). A positive and statistically significant correlation is, however, indicated for the United Kingdom and Belgium (manufacturing), the United Kingdom and Finland (private services) and a negative one for manufacturing (Finland).

C. Private Consumption Functions

The empirical results based on private consumption functions exhibit similar features to those derived from sectoral output functions (10): for many countries a structural shift to private services is indicated, as reflected in an elasticity of real consumer spending on services with respect to trend real disposable income exceeding that for goods (excluding food, tobacco, and beverages) (Table 9). Moreover, consumer expenditure on goods reacts far more strongly to variations of real disposable income around trend than that for private services, and with few exceptions the difference between cyclical responsiveness is significantly larger than the difference between trend responsiveness.

There are, however, important differences between the empirical findings at the consumer and producer stage: consumer demand for goods is shown to be on the whole more sensitive to changes in relative consumer prices than private services -- a result which did not emerge from the sectoral output functions based on time-series data. Furthermore, including a dummy variable for the post-OPEC 1 period raises the cyclical sensitivity of consumer outlays on goods for several countries. Results based on pooled data confirm this finding (Table 10) which probably reflects a rise in precautionary savings in a period of rising unemployment and rising inflation. For Japan, the elasticity of consumer expenditure on goods with respect to real trend disposable income is only a fraction of that of goods production with respect to trend real GDP. As noted earlier, this difference might at least in part mirror structural gains in market shares in international trade induced by specific industrial policies. For France a different configuration of results is given, with consumer spending on private services reacting far more strongly to trend changes in real disposable income than service output does to changes in trend real GDP. For Germany a reverse divergence is indicated, with private service output responding more strongly to trend changes in real GDP than consumer demand for services reacts

Table 7
 SECTORAL OUTPUT FUNCTIONS
 (Log level form)

	Constant	Trend RGDP	RGDP Deviations from Trend	Relative Price (1)	Foreign Trade Prices (2)	Lagged Dependent Variable	Dummy Variable (Post-1973)	R ²	DW
UNITED STATES									
Manufacturing (3)	7.81*	0.68*	2.04*	-0.17	-0.02	-0.01	0.03*	0.99	2.51
(1964-81)	8.88*	0.65*	2.08*	-0.39*	-0.05	-0.02		0.99	1.31
Private Services (3)	-6.62*	0.98*	0.82*	-0.10	-0.01	0.23*	-0.002	0.99	1.41
(1962-81)	-6.65*	0.99*	0.81*	-0.08	-0.01	0.23*		0.99	1.51
JAPAN									
Manufacturing (3)	-11.18*	1.16*	2.25*	-0.13	-0.09	0.16	-0.06*	0.99	2.41
(1964-81)	-10.79*	1.18*	2.23*	-0.05*	-0.07	0.11		0.99	1.91
Private Services (3)	-6.02*	0.68*	0.63*	-0.81*	0.01	0.49*	-0.03	0.99	2.41
(1967-81)	-7.00*	0.96*	0.71*	-0.69*	0.02	0.23*		0.99	2.11
GERMANY									
Manufacturing (3)	4.25	0.91*	1.78*	0.10	-0.07	-0.07	-0.007	0.99	0.91
(1964-80)	4.65	0.89*	1.76*	0.08	-0.07	-0.10		0.99	0.91
Private Services	-12.91*	1.61*	0.76*	-0.77	-0.12	-0.20	0.009	0.99	1.91
(1969-80)	-12.77*	1.57*	0.81*	-0.59*	-0.14	-0.16		0.99	1.71
FRANCE									
Manufacturing (3)	-0.74	0.97*	1.77*	-0.09	0.02	0.09	-0.002	0.99	1.11
(1964-81)	-0.70	0.97*	1.76*	-0.08	0.02	0.06		0.99	1.11
Private Services	-1.99	0.49*	0.98*	0.08	-0.04	0.57	-0.01	0.99	1.91
(1964-81)	-1.37	0.47*	0.92*	0.17	-0.01	0.56		0.99	1.71
UNITED KINGDOM									
Manufacturing (3)	5.13	0.21	1.84*	-0.72*	0.10	0.56*	-0.04	0.92	1.91
(1964-78)	8.79*	0.05	1.70*	-0.76*	0.23*	0.58*		0.92	2.21
Private Services	-2.26	0.80*	0.37*	0.23	0.24*	0.25	0.03	0.99	1.91
(1962-81)	-2.82*	0.58*	0.60*	0.38	0.13*	0.50		0.99	1.21
ITALY									
Private Services	-3.43*	0.75*	0.52*	-0.12	0.004	0.32*		0.99	1.91
(1962-78)	-3.82*	0.75*	0.55*	-0.18	0.002	0.34*	-0.006	0.99	2.11
CANADA									
Manufacturing (3)	5.54*	0.45*	2.05*	-0.80*	-0.03	0.29*		0.99	2.31
(1967-81)	3.29*	0.41*	2.38*	-1.33*	0.07	0.44*	-0.06	0.99	1.91
Private Services	-2.57*	0.62*	0.51*	-0.14	-0.10	0.45	0.02	0.99	2.31
(1962-81)	-2.86*	0.62*	0.52*	-0.21	-0.005	0.46*		0.99	1.71
BELGIUM									
Manufacturing (3)	-15.18*	1.46*	1.50*	0.40	0.68*	0.03	-0.003	0.99	1.91
(1964-81)	-15.40*	1.48*	1.48*	0.42	0.67*	0.01		0.99	1.91
Private Services (3)	-2.27	1.12*	0.78*	-0.33		-0.08		0.99	1.81
(1964-81)	-2.27	1.12*	0.78*	-0.33		-0.08	0	0.99	1.81
DENMARK									
Manufacturing (3)	14.80*	0.53*	0.85*	-1.14*	-0.23*	-0.17	0.04*	0.99	2.31
(1968-81)	11.61*	0.21	1.07*	-1.03*	-0.15	0.30*		0.98	2.01
Private Services (3)	-13.33*	1.38*	1.17*	-1.07*		0.10		0.99	1.91
(1964-81)	-12.85*	1.44*	1.24*	-0.64		0.01	0.02	0.99	1.71
FINLAND									
Manufacturing (3)	-8.33*	1.37*	1.60*	0.05	-0.29*	-0.10	-0.02	0.99	2.11
(1964-81)	-7.50*	1.38*	1.58*	0.02	-0.33*	-0.15		0.99	2.01
Private Services (3)	-8.62*	1.25*	0.87*	-0.25*	0.35*	0.04	0.002	0.99	3.51
(1971-81)	-8.86*	1.26*	0.87*	-0.26*	0.36*	0.04		0.99	3.51
NORWAY									
Manufacturing (3)	0.64	0.39*	2.26*	-0.65*	0.10	0.58*	0.03	0.99	2.81
(1964-77)									
Private Services (3)	3.72*	0.82*	1.96*	0.09		0		0.99	2.01
(1963-77)	5.10*	0.73*	1.69*	0.16*		0.03	0.02*	0.99	2.71
SWEDEN									
Manufacturing (3)	16.84*	0.38	1.55*	0.17	0.04	0.04	0.03	0.95	2.21
(1965-80)	13.18*	0.56	1.67*	0.20	0.05	-0.12		0.95	2.21
Private Services (3)	-4.00	0.97*	0.67*	-0.30		0.14		0.99	2.01
(1965-80)	-4.67*	0.16	0.50*	0.31		0.65*	0.04*	0.99	2.71

1. Sectoral output price divided by deflator for private business sector.
2. Export price divided by import price (foreign trade date).
3. Cochrane Orcutt adjustment.

Note: Asterisk denotes t-statistics above 2.

Table 8

SECTORAL OUTPUT FUNCTIONS
(Pooled time-series and cross-country data;
first difference form) (1)

	Constant	Real GDP	Real Output Price(c)	Export Price/ Import Price(d)	Lagged Dependent Variable	R ²
<u>MANUFACTURING</u>						
1969-73	-0.05*	1.92*	-1.34*	0.03	-0.03	0.98
1973-78	-0.03*	2.00*	-0.72*	0.07	-0.10	0.96
<u>CONSTRUCTION</u>						
1969-73	0.02	1.03*	-0.80*	0.32*	-0.03	0.81
1973-78	-0.06*	2.28*	-0.56*	-0.11	0.05	0.90
<u>MINING & QUARRYING</u>						
1969-73	0.02	-0.15	-0.01	0.02	-0.14	0.15
1973-78	-0.02	0.68*	0.06	-0.11	0.30*	0.30
<u>SERVICES</u>						
1969-73	0.01*	0.76*	-0.30	0.02	0.13	0.99
1973-78	0.004	0.88*	-0.25*	-0.03	0.21*	0.97

1. Including United States, Japan, Germany, France, United Kingdom and Australia (weighted percentage changes).

Asterisk denotes t- statistics above 2.

Table 9
PRIVATE CONSUMPTION FUNCTIONS
(Log level form)

	Constant	Trends Real Disposable Income	Deviation of Real Disposable Income from Trend	Relative Consumer Price (c)	Lagged Dependant Variable	Dummy Variable (Post-1973)	D _x	R ²
UNITED STATES								
Goods (a) (b) (1962-1981)	4.87 ^a 4.65 ^a 3.91	1.00 ^a 1.04 ^a 0.81 ^a	1.63 ^a 1.66 ^a 1.49 ^a	-0.92 -0.57 -0.69	-0.24 -0.27		0.85 1.70 1.89	0.99 0.99 0.99
Private Services (b) (1962-1981)	-3.25 -1.63 -3.84 ^a	1.36 ^a 1.34 ^a 1.09 ^a	0.55 ^a 0.50 ^a 0.56 ^a	-0.81 -0.47 -0.50	-0.31 -0.34	0.02 0.02	2.34 1.97 2.30	0.99 0.99 0.99
JAPAN								
Goods (a) (b) (1972-1981)	12.86 ^a 14.15 ^a 14.38 ^a	0.22 ^a 0.50 ^a 0.50 ^a	1.33 ^a 1.79 ^a 1.52 ^a	-1.30 ^a -0.92 ^a -0.76 ^a	0.35 ^a 0.01		3.23 2.29 3.04	0.98 0.99 0.97
Private Services (b) (1972-1981)	-4.36 ^a -3.60 -5.24 ^a	0.90 ^a 0.78 ^a 1.12 ^a	1.28 ^a 1.27 ^a 1.25 ^a	0.012 0.12 -0.17	0.20 0.31	-0.15	2.38 2.23 2.09	0.99 0.99 0.99
GERMANY								
Goods (a) (b) (1962-1980)	3.53 ^a -1.67 3.43 ^a	0.78 ^a 1.14 ^a 0.82 ^a	1.40 ^a 1.80 ^a 1.44 ^a	-2.09 ^a -1.17 ^a -2.08 ^a	0.04 -0.13		1.74 1.97 1.72	0.99 0.99 0.99
Private Services (b) (1962-1980)	-0.33 -1.34 -0.30	0.62 ^a 0.58 ^a 0.94 ^a	0.59 ^a 0.56 ^a 0.68 ^a	-0.51 -0.57 -0.46	0.34 ^a 0.43 ^a	-0.01	1.68 1.68 1.64	0.99 0.99 0.99
FRANCE								
Goods (a) (b) (1962-1981)	2.73 ^a 2.21 2.89 ^a	0.74 ^a 0.74 ^a 0.84 ^a	1.12 ^a 1.17 ^a 1.13 ^a	-1.37 ^a -1.34 ^a -1.38 ^a	0.12 0.13		2.18 2.17 2.07	0.99 0.99 0.99
Private Services (b) (1962-1981)	-4.63 ^a -4.60 ^a -5.08 ^a	1.03 ^a 1.03 ^a 1.13 ^a	0.81 ^a 0.80 ^a 0.85 ^a	-0.91 ^a -0.90 ^a -1.02 ^a	0.09 0.09	0	1.97 1.97 2.00	0.99 0.99 0.99
UNITED KINGDOM								
Goods (a) (b) (1962-1981)	-0.25 -2.71 -0.24	0.95 ^a 0.99 ^a 0.95 ^a	1.89 ^a 1.99 ^a 1.89 ^a	-0.62 -0.60 -0.62	-0.002 0.06		1.16 1.13 1.16	0.98 0.96 0.98
Private Services (b) (1962-1981)	-4.51 -2.17 -5.41 ^a	1.01 ^a 0.99 ^a 1.15 ^a	0.83 ^a 0.67 0.90 ^a	-0.30 0.05 -0.36	0.12 0.04	0.04	1.25 1.29 1.28	0.99 0.99 0.99
ITALY								
Goods (a) (b) (1962-1981)	-6.31 ^a -6.81 ^a -6.09 ^a	1.18 ^a 1.15 ^a 1.14 ^a	1.95 ^a 2.07 ^a 1.94 ^a	-0.85 ^a -0.74 ^a -0.83 ^a	-0.03 0.02		2.26 2.35 2.27	0.99 0.99 0.99
Private Services (b) (1962-1981)	-3.21 ^a -2.93 ^a -4.82 ^a	0.76 ^a 0.88 ^a 1.10 ^a	0.67 ^a 0.56 ^a 0.70 ^a	-0.55 -0.61 -0.62	0.30 ^a 0.17	0.02	1.72 1.75 1.58	0.99 0.99 0.99
CANADA								
Goods (a) (b) (1962-1981)	8.88 ^a 7.87 ^a 9.63 ^a	0.44 ^a 0.50 ^a 0.56 ^a	1.46 ^a 1.40 ^a 1.48 ^a	-1.99 ^a -1.51 ^a -2.23 ^a	0.16 0.14		1.41 1.71 1.35	0.99 0.99 0.99
Private Services (b) (1962-1981)	-3.12 ^a -2.74 ^a -4.30 ^a	0.85 ^a 0.84 ^a 1.11 ^a	1.33 ^a 1.38 ^a 1.34 ^a	-0.96 ^a -0.96 ^a -1.25 ^a	0.23 0.22	0.01	1.77 1.84 1.67	0.99 0.99 0.99
AUSTRIA								
Goods (a) (b) (1965-1979)	10.24 8.58 5.79	0.92 ^a 0.93 ^a 0.73 ^a	2.59 ^a 2.59 ^a 2.16 ^a	-2.75 ^a -2.65 ^a -2.73	-0.38 ^a -0.32		1.72 1.54 1.97	0.99 0.99 0.98
Private Services (b) (1965-1979)	1.78 2.10 1.37	0.93 ^a 0.94 ^a 0.88 ^a	0.74 ^a 0.73 ^a 0.71 ^a	-0.83 -0.83 -0.83	-0.07 -0.34	0.04	1.90 1.90 1.93	0.99 0.99 0.99

a. Excluding food, tobacco and beverages.

b. Cochrane Orcutt Adjustment.

c. Goods-or service-specific consumer price deflated by the private consumption deflator.

Note: Asterisk denotes t-statistics above 2.

Table 9 (continued)
PRIVATE CONSUMPTION FUNCTIONS
(Log level form)

	Constant	Trends Real Disposable Income	Deviation of Real Disposable Income from Trend	Relative Consumer Price (C)	Lagged Dependant Variable	Dummy Variable (Post-1973)	DW	R ²
BELGIUM								
Goods (a) (1962-1981)	0.49	1.05*	0.56	0.02	-0.13		2.23	0.99
	1.44	1.15*	0.51	-0.09	-0.26	0.02	2.38	0.99
	0.37	0.94*	0.50	0.11			2.28	0.99
Private Services (1962-1981)	-3.79*	1.10*	1.28*	-0.30	-0.03		1.75	0.99
	-2.69	1.23*	1.32*	-0.16	-0.21	0.03	1.59	0.99
	-3.69	1.07*	1.27*	-0.31			1.77	0.99
FINLAND								
Goods (a) (1962-1981)	4.84	0.91*	1.78*	-0.70	-0.19		1.14	0.98
	5.34	0.90*	1.76*	-0.66	-0.20	0.01	1.14	0.97
	4.17	0.77*	1.68*	-0.66			1.28	0.98
Private Services (1962-1981)	-8.49*	1.48*	0.60*	-0.66	-0.23		1.24	0.99
	-8.58*	1.46*	0.61*	-0.66	-0.21	-0.01	1.29	0.99
	-6.49*	1.18*	0.54*	-0.60			1.51	0.99
SWEDEN								
Goods (a) (1965-1981)	1.84	0.85*	0.86*	0.39	0.02		1.34	0.97
	8.81*	0.63*	1.45*	0.18	-0.04	0.09*	1.78	0.99
	1.90	0.86*	0.87*	0.39			1.35	0.98
Private Services (1965-1981)	8.10*	0.65*	0.50	-1.46	-0.05		1.75	0.98
	12.62*	0.55*	0.79*	-1.19*	-0.13	0.05	2.07	0.98
	7.88*	0.62*	0.51	-1.42*			1.79	0.98

a. Goods excluding food, tobacco and beverages.

b. Cochrane Orcutt Adjustment.

Note: Asterisk denotes t-statistics above 2.

Table 10

CONSUMPTION FUNCTIONS: PRICE AND INCOME ELASTICITIES (a)
(Combined Time-Series and Cross-Country Data)

	Constant	Real Disposable Income	Relative Consumer Prices (c)	R ²
<u>FOOD, BEVERAGES & TOBACCO</u>				
1963-1973	0.011*	0.29*	-0.52*	0.69
1973-1980	0.012*	0.19*	-0.67*	0.92
<u>GOODS (b)</u>				
1963-1973	0.002	0.93*	-0.46	0.86
1973-1980	-0.030*	1.59*	-0.76*	0.89
<u>SERVICES</u>				
1963-1973	0.031*	0.45*	-0.52*	0.96
1973-1980	0.019*	0.54*	-0.38*	0.96
<u>GROSS RENT, FUEL & POWER</u>				
1963-1973	0.032*	0.28*	0.13	0.95
1973-1980	0.027*	0.40*	-0.39	0.94

Note: Asterisk denotes t-statistics above 2.

- a) Including United States, Germany, France, United Kingdom, Italy, Canada, Belgium, and Finland (weighted percentage change).
- b) Excluding food, tobacco, and beverages.
- c) Goods-or service-specific consumer price deflated by private consumption deflator.

to changes in trend real disposable income. Possible explanations for these differences include a structural shift of imports to services in the case of France and one of exports to services in the case of Germany perhaps accompanied by service-intensive purchases by the public sector.

In the light of the empirical results described above the changes in the composition of private consumption in the pre-OPEC 1 period can be accounted for as follows:

- i) for several countries the shift of consumer spending to private services in the pre-OPEC 1 period came from structural forces reflected in an elasticity of consumer spending with respect to trend real disposable income above unity (United States, France, Belgium and Finland). Without increases in relative service prices the shift would have been somewhat stronger (Table 11). In Japan and Canada gains in real disposable income above trend and a high cyclical responsiveness were principal elements in this development, accentuated by falling relative service prices (Japan). In contrast, in Germany the expenditure share for private services fell (Appendix Table 1), reflecting a combination of low trend responsiveness and increases in relative service prices;
- ii) in the post-OPEC 1 period the shift of consumer spending to private services largely derived from trend factors assisted by a low cyclical sensitivity to changes in real disposable income below trend and, in a few cases, by declines in relative service prices;
- iii) as noted earlier, many countries prior to 1973 witnessed a rise in consumer expenditure on goods (excluding food) in excess of that for private services -- a development stemming from above-trend gains in real disposable income, a high cyclical sensitivity, and decreases in relative goods prices (except in Japan, Table 11). In the case of a few countries, a trend elasticity above unity reinforced the shift to expenditure for goods (United States, Germany, Italy, and Belgium); and
- iv) the shift away from consumer purchases of goods in the post-OPEC 1 period was essentially associated with below-trend gains in real disposable income and an enhanced cyclical responsiveness, no doubt related to highly uncertain income expectations (11). In some countries a rise in relative goods prices (partly reflecting a comparatively high energy intensity of production) contributed to the fall in the share of goods outlays in private consumption (Italy, and Finland).

As pointed out earlier, these changes in the composition of private consumption were transmitted to the output side often magnified by foreign trade developments. Accordingly, the rising share of manufacturing production in total private sector output recorded between 1960 and 1973 can be decomposed into income effects (either manifest in an elasticity of manufacturing output with respect to trend real GDP growth above one or in strong demand for manufacturing output during a period of sustained real GDP increases above trend) and relative price effects (Table 11). In the post-OPEC 1 period, marked by weak output growth, high cyclical sensitivity contributed to a reduction of the output share of manufacturing (except in

Table 11
RELATIVE OUTPUT PRICES (1)
(Average percentage change at annual rate)

	Mining and Quarrying		Manufacturing		Construction		Private Services	
	Pre- OPEC 1	Post- OPEC 1	Pre- OPEC 1	Post- OPEC 1	Pre- OPEC 1	Post- OPEC 1	Pre- OPEC 1	Post- OPEC 1
United States	-1.4	13.5	-1.5	-0.6	3.1	2.1	0	-0.5
Japan	-2.1	-0.5	-2.1	-3.0	1.2	3.8	0.7	0.2
Germany	-1.0	4.2	-0.8	-0.3	1.3	1.1	0.3	-0.2
France	-0.3	9.0	-1.7	-0.5	2.0	2.4	0.6	0.5
United Kingdom	-0.3	...	-1.1	...	2.8	...	0.5	...
Italy	-1.0	-0.5	...	...	3.1	3.4	0.5	0.3
Canada	0.5	8.4	-1.3	0.5	3.8	0.1	-0.5	-1.2
Austria (2)	-1.1	0.9	-0.8	-1.2	1.0	1.2	1.4	0.8
Belgium	-1.8	3.6	-1.2	2.7	2.6	2.7	...	...
Denmark	-8.7	14.4	-1.8	-0.7	0.7	1.2	0.6	0.7
Finland	0.6	-4.9	-0.9	-0.3	1.7	-1.1	-0.2	0.5
Norway (3)	-4.6	10.3	-0.2	1.0	0.1	1.5	0.1	-1.6
Spain (4)	-1.4	9.8	-2.2	-1.7	3.0	3.4	0.8	0.5
Sweden (5)	-5.3	-1.7	-1.6	0.8	0.2	-0.6	1.1	0
Australia (6)	0.4	10.5	-1.6	-0.7	0.3	0.3	1.0	0.1

Note: Pre-OPEC 1 = 1960-73; Post-OPEC 1 = 1973-81.

1. Sectoral value added deflator divided by deflator for private business sector.
2. 1964-73; 1973-77.
3. 1962-73; 1973-77.
4. 1964-73; 1973-77.
5. 1963-73; 1973-81.
6. 1966-73; 1973-80.

Source: OECD National Accounts.

Table 11 (continued)

RELATIVE CONSUMER PRICES (1)
(average percentage change at annual ratio)

	Food(2)		Goods (3)		Private Services(4)		Rent, Fuel and Power	
	Pre-OPEC 1	Post-OPEC 1	Pre-OPEC 1	Post-OPEC 1	Pre-OPEC 1	Post-OPEC 1	Pre-OPEC 1	Post-OPEC 1
United States	0.6	-0.5	-0.6	-0.3	0.5	0.3	-0.5	0.4
Japan	-0.8	-0.1	1.0	-0.3	-0.3	0	0.1	-0.5
Germany	-0.4	-1.0	-0.7	0	0.8	0	1.9	0.9
France	-0.1	-0.4	-0.8	0.5	0.5	-0.5	1.8	0.7
United Kingdom	-0.5	-0.8	-1.0	-0.5	0.2	0.2	2.0	1.8
Italy	-0.2	-1.2	-0.8	1.5	0.3	0.5	1.2	-0.1
Canada	0.3	0.7	-0.8	-0.7	1.1	-0.1	-0.3	0.5
Austria	-0.5	-1.5	-0.7	-0.3	1.3	0.6	1.8	2.8
Belgium	0	-1.4	-0.1	-1.3	0.8	1.5	-0.7	2.8
Denmark	-0.3	-1.3	-1.0	-0.5	0.2	-0.8	2.7	2.4
Finland	-0.4	0.3	-0.6	0.5	0.7	0.4	0.6	-1.3
Netherlands	-2.2	-2.0	-0.2	-0.7	1.5	0.8	2.2	2.5
Norway	0	0.2	-0.2	1.6	0.6	-2.5	-0.4	0.5
Sweden	0.1	-0.7	-0.9	-0.6	0.3	0	0.9	1.2
Australia	-0.6	-0.5	-1.2	-0.6	...	...	0.4	1.1

Note: Pre-OPEC 1 = 1960-73; Post-OPEC 1 = 1973-81.

1. Good- or service- specific consumer prices divided by private consumption deflator.
2. Food, tobacco, and beverages.
3. Clothing, footwear, furniture, furnishings, household equipment and operation, transport and communication (including transport equipment).
4. Medical care, health expenses, recreation, entertainment, education, cultural services and miscellaneous goods and services.

Source: OECD National Accounts.

Japan and Finland). In some countries the fall was exacerbated by rises in relative output prices (Canada, Belgium, and Sweden). Furthermore, there is some evidence that keener international competition and historically low levels of profitability have further decreased the output share of manufacturing (12). Regarding services, the shift of output to private services after 1973 has generally been the outcome of cyclical influences (low cyclical sensitivity) combined with a high output elasticity with respect to trend real GDP (Germany, Belgium, and Finland) and decreases in relative service prices (United States, Germany and Canada).

D. Sectoral Productivity Functions

The empirical findings discussed above provide some guidance for assessing changes in the structure of output flowing from a given rise in real GDP. The employment implications of such a rise can be evaluated with the help of sectoral productivity functions. Here two simple specifications have been used: one where changes in sectoral output per employed person are regressed on a constant term and changes in sectoral output (first difference equation), another where the level of sectoral productivity is made a function of trend real GDP and deviation of real GDP from trend in analogy with the sectoral output functions (level equations). In the first equation, the constant term proxies trend factors such as technological progress and catching up developments (13), while the output coefficient captures influences circumscribed by Verdoorn's law (14). In the second equation, trend real GDP and deviations of real GDP from trend are employed as explanatory variables. This specification using aggregate instead of sectoral output is obviously crude but offers some assistance for interpreting the empirical results derived from the first equation.

The empirical results suggest the following: in accordance with Verdoorn's law sectoral output is a powerful determinant of sectoral productivity in both manufacturing and the private service sector. With few exceptions the sectoral output coefficients are similar for each country (Table 12). This implies that differences between sectoral employment trends in a given country derive from differences in the elasticity of sectoral output with respect to trend real GDP and/or cyclical fluctuations rather than from differences between the sectoral output coefficients ("Verdoorn coefficients") in sectoral productivity functions. The United States stands out as the country with the lowest measured elasticities of sectoral productivity with respect to sectoral output, implying a comparatively rapid rise in sectoral employment when sectoral output increases. Estimates from pooled data calculations (Table 13) indicate a fall in the output elasticity for both manufacturing and, notably, for private services in the post-OPEC 1 period. Interfactor substitution induced by the two oil price shocks could have played a part in these developments (15).

Turning to the empirical results based on sectoral productivity functions in level form (Table 14), manufacturing productivity in the major OECD countries and some of the smaller ones is shown to be more responsive to cyclical variations than in the private service sector -- a result reflecting the greater cyclical sensitivity of manufacturing output. Productivity in U.S. manufacturing and, especially, in the private service sector is shown to

Table 12
 SECTORAL PRODUCTIVITY FUNCTIONS (1)
 (First difference form)

	Constant	Sectoral Output	Pure Profit Rate (2)	Dummy Variable (First-1973)	R ²	DM
<u>UNITED STATES</u>						
Manufacturing (1968-81)	0.011 0.007 0.012	0.33* 0.39* 0.38*	-0.012		0.53 0.60 0.53	1.86 2.07 1.83
Private Services (1968-81)	-0.01 -0.01	0.39* 0.41*		0.02 0.017*	0.64 0.41	2.21 1.48
<u>JAPAN</u>						
Manufacturing (1971-81)	0.008 0.023* 0.022*	0.80* 0.65* 0.64*	-0.06		0.93 0.86 0.86	2.12 1.95 1.88
Private Services (1971-81)	-0.019 -0.007	1.02* 0.75*		0.003 0.045*	0.93 0.97	2.03 1.80
<u>GERMANY</u>						
Manufacturing (1971-80)	0.016 0.016	0.76* 0.75*		-0.007	0.75 0.75	1.49 1.50
Private Services (1971-80)	0.008	0.71*			0.76	1.02
<u>FRANCE</u>						
Manufacturing (1971-81)	0.015* 0.020*	0.78* 0.55*	-0.024		0.84 0.76	2.26 1.42
<u>UNITED KINGDOM</u>						
Manufacturing (1962-81)	0.018* 0.020*	0.58* 0.55*	-0.021*		0.72 0.58	1.96 1.70
<u>BELGIUM</u>						
Manufacturing (1971-81)	0.011* 0.014	0.50* 0.61*		0.029	0.87 0.81	2.48 2.20
Private Services (1971-81)	-0.010 -0.012	0.76* 0.83*		0.001	0.94 0.91	2.12 2.13
<u>DENMARK</u>						
Manufacturing (1967-81)	0.036* 0.039*	0.17 0.18		0.004	0.15 0.08	1.85 1.43
Private Services	-0.005 0.003	1.02* 0.84*		-0.01	0.99 0.92	1.67 1.01
<u>FINLAND</u>						
Manufacturing (1961-81)	0.010 0.011	0.50* 0.51*		0.001	0.55 0.55	1.40 1.40
Private Services (1961-81)	0.007 0.007	0.53* 0.53*		-0.002	0.68 0.68	2.25 2.30
<u>NORWAY</u>						
Manufacturing (1963-77)	0.002	0.73*			0.87	2.14
Private Services	-0.008	0.84*			0.82	1.80
<u>SWEDEN</u>						
Manufacturing (1964-81)	0.009	0.68*			0.82	1.36
Private Services (1964-81)	-0.004	0.87*			0.76	2.13

Asterisk denotes t-statistics over 2.

1. Cochrane-Orcutt adjustment.

2. Rate of return on capital minus real long-term interest rate.

Table 13

SECTORAL PRODUCTIVITY FUNCTIONS (1)
(Pooled time-series and cross country data; first difference form)

	Constant	Real GDP	R ²	DW	Constant	Sectoral Output	R ²
<u>Manufacturing</u>							
1969-73	-0.005	1.26* 1.15*	0.85 0.90	1.60 1.62	0.02*	0.41* 0.58*	0.81 0.72
1973-80	-0.008*	0.86* 0.72*	0.68 0.66	2.20 2.21	0.007*	0.34* 0.38*	0.66 0.62
<u>Private Services</u>							
1969-73	-0.003	0.56* 0.49*	0.75 0.76	1.80 1.69	-0.02*	0.69* 0.38*	0.70 0.70
1973-80	-0.003	0.31* 0.25*	0.63 0.47	1.70 1.76	-0.006*	0.29* 0.18*	0.46 0.35

1. Including United States, Germany, Denmark, Finland, and Sweden (weighted percentage changes).

Note: Asterisk denotes t-statistics above 2.

Table 14
 SECTORAL PRODUCTIVITY FUNCTIONS
 (Log level form)

	Constant	Trend RGDP	RGDP Deviation from Trend	Pure Profit Rate (1)	Dummy Variable (Post-1973)	R ²	BN
UNITED STATES							
Manufacturing (2) (1968-81)	-6.38	0.58*	0.94*	-0.01		0.94	1.63
	-8.86	0.60*	0.84*		-0.02	0.94	1.52
	-7.32	0.61*	0.90*			0.96	1.59
Private Services (2) (1968-81)	5.86	0.14	0.35*		-0.002	0.88	1.59
	6.03	0.14	0.36*			0.90	1.60
JAPAN							
Manufacturing (2) (1970-81)	-45.79	1.86*	1.19*	0.03		0.99	2.23
	-39.06	1.66*	1.60*		0.06*	0.99	2.85
	-42.67	1.77*	1.27*			0.99	2.77
Private Services (2) (1970-81)	-5.70	0.64*	1.02*		0.03	0.97	2.11
	-7.27	0.68*	0.87*			0.97	0.85
GERMANY							
Manufacturing (2) (1960-80)	-25.72*	1.31*	0.77*	0.07		0.99	1.28
	-23.27*	1.22*	0.85*		-0.01	0.99	1.34
	-23.97*	1.25*	0.89*			0.99	1.27
Private Services (2) (1960-80)	-18.68*	1.07*	0.58*		0.008	0.99	1.03
	-18.14*	1.05*	0.56*			0.99	1.06
FRANCE							
Manufacturing (2) (1970-81) (2)	-29.09*	1.44*	1.50*	-0.03*		0.99	1.49
	-29.87*	1.47*	1.31*		0.01	0.99	2.20
	-35.27*	1.66*	1.27*			0.99	1.44
UNITED KINGDOM							
Manufacturing (2) (1961-81) (2)	-20.62*	1.14*	1.13*	-0.02*		0.99	1.70
	-22.38*	1.20*	1.13*		0.01	0.98	1.58
	-21.81*	1.18*	1.10*			0.96	1.61
BELGIUM							
Manufacturing (2) (1970-81)	-49.21*	2.20*	1.82*		0.07*	0.96	2.15
	-47.54*	2.14*	1.46*			0.96	1.99
Private Services (2) (1970-81)	3.41*	0.35*	1.38*		0.002	0.97	2.60
	2.54*	0.38*	1.22*			0.97	1.82
DENMARK							
Manufacturing (2) (1966-81)	-32.44*	1.67*	-0.18		-0.01	0.99	1.60
	-34.25*	1.74*	-0.12			0.99	1.49
Private Services (2) (1966-81)	-56.48*	2.59*	1.39*		-0.06	0.97	1.29
	-12.95*	0.94*	1.12*			0.96	1.68
FINLAND							
Manufacturing (2) (1960-81)	-12.47*	0.92*	0.79*		0.03	0.99	1.43
	-10.76*	0.85*	0.68*			0.99	1.58
Private Services (2) (1960-81)	-9.98*	0.82*	0.36*		-0.02	0.99	2.13
	-10.93*	0.86*	0.41*			0.99	1.82
NORWAY							
Manufacturing (2) (1962-77)	15.99*	-0.17	0.71		-0.04*	0.98	1.80
	11.14	-0.004	0.60			0.98	1.61
Private Services (2) (1962-1977)	1.69*	0.39*	1.26*		-0.06*	0.99	2.65
	-2.18	0.54*	1.34*			0.98	1.90
SWEDEN							
Manufacturing (2) (1963-81)	8.72*	0.76*	0.51		-0.02	0.98	1.88
	-11.78*	0.87*	0.59*			0.98	1.90
Private Services (2) (1963-81) (2)	-3.90	0.58*	0.57*		-0.03	0.97	2.27
	-7.56*	0.71*	0.69*			0.97	1.83

1. Rate of return on capital minus real long-term interest rate.

2. Cochrane-Orcutt adjustment.

Note: Asterisk denotes t-statistics above 2.

display inertia in the face of increases in trend real GDP -- a finding which supports the low "Verdoorn coefficients" in sectoral productivity equations in the first difference form (Table 12).

The dichotomy between the productivity behaviour in the United States and elsewhere merits closer examination. The empirical results suggest that at given rates of growth in trend real GDP or sectoral output growth, a significantly larger number of jobs is created in the United States than in Europe and, especially, Japan. Indeed, as noted in recent editions of the OECD Economic Outlook (16) employment trends diverged sharply among major OECD regions over the ten years to 1983, with the United States recording a rise in total employment of 15.8 million compared with 5 million in Japan and a small loss of jobs in Europe of 1.5 million. The disparity of employment performance in Europe and the United States arose despite similar rates of real GDP growth.

A crude sectoral breakdown reveals that the private service sector accounted for the bulk of the divergence between aggregate employment trends in Europe and the United States (Table 15). This divergence may owe much to a sharp disparity between trends in real labour costs, an increase by nearly 19 per cent in Europe in the 1973-81 period contrasting with a decline of nearly 3 per cent in the United States (Table 16) (17). Real wage moderation in the United States (manifest in a fall in real labour costs relative to depressed productivity in the private service sector) mirrored a set of inter-related factors including a strong influx of new entrants into the labour force (largely young persons and women) and a corresponding limited access to unemployment insurance benefits (low reservation wage); strong demand for low-skilled labour in small and medium-sized firms; and a low degree of unionisation, making for weak wage bargaining power.

In manufacturing, the employment disparity, albeit significantly smaller than in the private service sector, was nonetheless important: the four major European countries lost 3.3 million jobs between 1973 and 1981 (Table 15), while the United States showed a small gain. This divergence is in large measure attributable to differential changes in relative and real factor prices. In U.S. manufacturing the price of labour rose little relative to the price of capital (Table 17), while it increased sharply in Europe. Moreover, real labour costs in the major European countries rose more than twice as fast as in the United States generating stronger incentives to substitute capital for labour. Furthermore, in the United States industrial energy prices to final users rose more rapidly relative to the price of labour, partly as a consequence of the decontrol of oil prices. Hence, the inducement to replace energy by labour was more marked in the United States than in Europe. Both substitution effects contributed to maintaining the demand for labour in U.S. manufacturing at a comparatively high level in relation to output.

While real labour costs in U.S. manufacturing increased relative to productivity, the gap was smaller than for major European countries. It is hard to ascertain to what extent this difference has accentuated differential developments of employment growth. Because of an unfavourable performance of capital productivity, the rate of return on capital in the United States fell by similar proportions between 1973 and 1981 as in Europe (18). It is conceivable though that a significantly larger number of industrial firms in Europe were exposed to realised or expected rates of return on capital close

Table 15

TOTAL EMPLOYMENT
(in millions)

	Agriculture	Manufacturing	Government (a)	Private Services (b)
<u>UNITED STATES</u>				
1973	4.1	20.4	16.1	42.8
1981	4.0	20.7	17.9	55.1
Change	-0.1	0.3	1.8	12.3
<u>JAPAN</u>				
1973	8.9	15.3	3.5	22.1
1981	7.4	14.8	4.0	26.4
Change	-1.5	-0.5	0.5	4.3
<u>EUROPE</u> (four major countries) (c)				
1973	8.2	29.0	14.5	30.6
1981	6.6	25.7	16.4	33.8
Change	-1.6	-3.3	1.9	3.2

a) Producers of Government Services.

b) Including wholesale and retail trade, transport, storage, and communication, finance, insurance, real estate, community, social, and personal services.

c) Germany, France, United Kingdom, and Italy.

Source: OECD Labour Force Statistics and National Accounts.

Table 16
OUTPUT, LABOUR COSTS, AND EMPLOYMENT
 (Cumulative Percentage Change between 1973 and 1981)

	Manufacturing	Private Services (a)
<u>Production</u>		
United States	10.3	28.7
Japan	59.5	36.3
Europe (b)	8.5	29.1
<u>Real Labour Costs (c)</u>		
United States	15.9	-2.8 (e)
Japan	84.1	44.5 (e)
Europe (d)	35.4	18.6 (e)
<u>Employment</u>		
United States	1.5	28.4
Japan	-3.3	19.5
Europe (b)	-11.4	10.5
<u>Productivity</u>		
United States	8.7	0.2
Japan	65.3	14.1
Europe (b)	22.5	16.8

- a) Including wholesale and retail trade, transport, storage, and communication, finance, insurance, real estate, community, social and personal services.
- b) Germany, France, United Kingdom, and Italy.
- c) Compensation of employees per head of employment divided by output price deflator.
- d) Germany, France and the United Kingdom.
- e) Total economy (excluding manufacturing).

Sources: OECD National Accounts and U.S. Department of Labor, Bureau of Labor Statistics, May 1983.

Table 17
 COSTS AND RELATIVE PRICES IN MANUFACTURING 1981
 (1973 = 100)

	Nominal Price of :			Relative price of labour	
	Labour (a)	Capital (b)	Energy (c)	IV = I:II	V = I:III
	I	II	III		
United States	207.2	199.0	524.3	104.1	39.5
Japan	224.8	187.7	460.6	119.8	48.8
Germany	190.6	162.0	292.3	117.7	65.2
France	290.7	234.6	474.9	123.9	61.2
United Kingdom	382.3	230.2	638.3	166.1	59.9

- a. Compensation of employees per employed person.
- b. User cost of capital.
- c. Energy prices to final industrial users (unweighted average of price of oil, natural gas, electricity and coal).

Source: U.S. Department of Labor, Bureau of Labor Statistics, May 1983.

to, or below, minimum required levels than in the United States. The unexpectedly strong labour market shake-out in Europe during the last recession (linked to efforts at re-establishing profit margins through cost reductions) may be in part a reflection of such a threshold effect.

Summing up, behind the comparatively low "Verdoorn coefficients" in the sectoral productivity functions for the United States (Table 12) lie complex sector-specific forces largely relating to real wage moderation in the private service sector and movements in relative and real factor prices in manufacturing which were strikingly different from those in Europe.

E. Implications for Foreign Trade

Changes in the pattern of international trade are sometimes viewed as having exacerbated employment problems in industrial countries. The empirical evidence, however, lends only tenuous support to this hypothesis. For intra-OECD trade of goods, changes in the composition of exports and imports in the 1970s were on the whole small (except for Japan) making for a weak impact on employment. But country positions differ in this respect, with the United States and Italy deriving some employment gains and Japan, France, and the United Kingdom suffering from employment losses (19).

In contrast with intra-OECD trade, the 1970s saw significant modification of the commodity pattern of imports from developing countries (largely a falling share for ores, metal, and food and a rising share of textiles and consumer durables). Prevailing throughout the last recession (notwithstanding the high cyclical sensitivity of purchases of consumer goods) this tendency may have contributed to the deceleration of the rise in manufacturing output after 1973 which was moderately stronger than that for real consumer outlays on goods (excluding food) (Table 1). The compositional change implied a marked rise in the employment content for imports from developing countries, contrasting with broadly stable labour contents on the export side (19). The implied direct employment losses in the OECD area were largely concentrated on female and unskilled labour, contributing to the unexpected strength of productivity gains in the early 1980s, i.e. labour-shedding in traditional industries. Since trade with developing countries accounts for only a small proportion of total trade in industrial goods the immediate adverse effects on aggregate employment have been relatively limited.

As regards services, both recorded exports and especially imports fell relative to total trade flows during the 1970s. In view of the fact that the employment content for imports of services has been larger than that for exports these developments yielded a positive contribution to employment in OECD countries.

III. Possible implications for the future

The empirical results summarised above demonstrate the importance of cyclical positions in altering the pace of output and employment shifts. Looking at the future it is convenient to distinguish between two hypothetical cases, one where projected increases in real GDP may exceed those for trend real GDP, another where projected output developments remain sluggish relative to trend.

Judging from the empirical findings, manufacturing output in the first case would resume a rise relative to total private sector production even though a low elasticity with respect to trend real GDP will mitigate the rise in the output share. Further relative output gains may result from stronger prospective declines in relative output prices than those observed after the first oil shock. Two factors are likely to operate in this direction: cyclical gains in productivity and decreases in real energy prices to final users.

An oil price-induced fall in real energy prices (likely to be magnified in countries whose currencies appreciate against the US dollar) is bound to create greater scope for price reductions in manufacturing than in the services sector given differences in the energy intensity of production. Furthermore, if a continuous fall in real oil prices led to lower real gasoline prices, previous shifts to smaller fuel-efficient cars might weaken or even be reversed.

Along with a rising share of manufacturing output, countries which fell in the first group would also be likely to see further output shifts to the service sector. However, this tendency might turn out to be markedly weaker than during the past decade, and in some cases might even stop (20) as the impact of the positive trend rise could be nullified by the low cyclical output sensitivity and the likely sharper increase in relative prices (21).

The sectoral output developments discussed above would be associated with divergent trends of sectoral productivity, with gains in manufacturing increasingly exceeding those in the private service sector. This divergence would be accentuated if the tendency toward increased part-time work in the service sector became more pronounced than hitherto. Consequently, the rise in employment in service industries might well accelerate over the projection period in countries belonging to the first group, while manufacturing employment might at best resume some modest growth (22).

In contrast, a different structure of output and employment shifts would be likely to emerge if real GDP gains stayed below those for trend real GDP. In this case manufacturing output might keep on falling relative to total private sector output, this fall being associated with a combination of a high cyclical sensitivity and a low elasticity of output with respect to trend real GDP. Demand-raising effects coming from an accelerated fall in relative output prices could mitigate such a relative decline. For private services, output prospects would be more favourable due to a low cyclical sensitivity and positive trend factors pushing up the share of service output in total private sector production. Increases in relative output prices could, however, be expected to limit the extent of this rise. On the above considerations sectoral productivity gains might not differ much between the

private service sector and manufacturing. This could imply employment gains in the private service sector and employment losses in manufacturing in continuation of trends which emerged after the first oil price shock.

In conclusion, in the first hypothetical case changes in the structure of output and employment might emerge similar to those prevailing in the pre-OPEC 1 period, while in the second case sectoral trends typical of the post-OPEC 1 period might continue.

Appendix Table 1

REAL PRIVATE CONSUMPTION
(Average Percentage Change at Annual Rate)

	Pre-OPEC 1	Post-OPEC 1	Difference
	I	II	I-II
<u>USA (1960-73; 1973-81)</u>			
Food	1.9	2.1	-0.2
Other Goods	4.7	1.8	2.9
Services	5.1	3.2	1.9
Gross Rent	4.6	3.6	1.0
Total	4.2	2.6	1.6
<u>JAPAN (1970-73; 1973-81)</u>			
Food	5.5	1.6	3.9
Other Goods	10.3	1.2	8.1
Services	9.6	3.7	5.9
Gross Rent	7.6	5.7	1.9
Total	8.2	2.9	5.3
<u>GERMANY (1960-73; 1973-81)</u>			
Food	3.0	1.7	1.3
Other Goods	6.1	2.3	3.8
Services	4.5	3.2	1.1
Gross Rent	4.9	2.5	2.4
Total	4.8	2.3	2.5
<u>FRANCE (1960-73; 1973-81)</u>			
Food	3.1	1.6	1.5
Other Goods	6.5	2.3	4.2
Services	6.4	5.3	1.1
Gross Rent	7.2	4.3	2.9
Total	5.6	3.4	1.2
<u>UK (1960-73; 1973-81)</u>			
Food	1.1	0.3	0.7
Other Goods	4.1	1.0	3.1
Services	3.8	0.9	2.9
Gross Rent	2.8	1.4	1.4
Total	2.9	1.0	1.9
<u>ITALY (1960-73; 1973-81)</u>			
Food	4.6	1.7	2.9
Other Goods	8.1	2.4	5.7
Services	6.4	3.7	2.7
Gross Rent	4.7	2.5	2.2
Total	5.9	2.3	3.6

Note: For definitions see Table 1.

Source: OECD National Accounts.

Appendix Table 1 (Continued)

REAL PRIVATE CONSUMPTION
(Average Percentage Change at Annual Rate)

	Pre-OPEC 1	Post-OPEC 1	Difference
	I	II	I-II
<u>CANADA (1960-73; 1973-81)</u>			
Food	3.5	1.9	1.6
Other Goods	6.2	3.5	2.7
Services	5.2	4.2	1.0
Gross Rent	5.4	3.7	1.7
Total	5.1	3.4	1.7
<u>BELGIUM (1960-73; 1973-81)</u>			
Food	2.8	1.0	1.8
Other Goods	5.4	2.9	2.5
Services	5.4	2.5	2.9
Gross Rent	3.6	2.7	0.9
Total	4.4	2.3	2.1
<u>DENMARK (1966-73; 1973-81)</u>			
Food	1.5	0.5	1.0
Other Goods	2.6	-0.4	3.0
Services	3.6	1.9	1.7
Gross Rent	5.3	2.4	2.9
Total	3.0	1.0	2.0
<u>FINLAND (1960-73; 1973-81)</u>			
Food	3.9	1.0	2.9
Other Goods	6.4	0.9	5.5
Services	6.3	3.4	2.9
Gross Rent	4.4	4.1	0.3
Total	5.0	2.2	2.8
<u>NETHERLANDS (1969-73; 1973-79)</u>			
Food	3.6	2.4	1.2
Other Goods	4.6	3.6	1.0
Services	6.4	4.1	2.3
Gross Rent	3.0	3.4	-0.4
Total	4.4	3.7	0.7

Note: For definitions see Table 1.

Source: OECD National Accounts.

Appendix Table 1 (Continued)
REAL PRIVATE CONSUMPTION
(Average Percentage Change at Annual Rate)

	Pre-OPEC 1	Post-OPEC 1	Difference
	I	II	I-II
<u>NORWAY (1962-73; 1973-77)</u>			
Food	2.6	2.8	-0.2
Other Goods	4.1	5.8	-1.7
Services	4.3	8.8	-4.5
Gross Rent	3.5	5.0	-1.5
Total	3.5	5.9	-2.4
<u>SWEDEN (1963-73; 1973-81)</u>			
Food	1.6	0.8	0.8
Other Goods	3.4	1.9	1.5
Services	3.7	1.4	2.3
Gross Rent	3.5	2.1	1.4
Total	3.1	1.5	1.6
<u>AUSTRALIA (1960-73; 1973-81)</u>			
Food	3.4	2.5	0.9
Other Goods	6.2	2.5	3.7
Services	...	...	...
Gross Rent	6.2	4.3	1.9
Total	4.8	2.8	2.0
<u>Weighted AVERAGE (1)</u>			
	2.8	1.9	0.9
	6.0	2.0	4.0
	5.7	3.4	2.3
	5.2	3.7	1.5
	4.9	2.7	2.2

Note: For definitions see Table 1.

Source: OECD National Accounts.

1. 1973 real GDP weights.

Appendix Table 2

 SECTORAL OUTPUT TRENDS
 (Average percentage change at annual rate)

	Pre-OPEC 1	Post-OPEC 1	Deceleration
	I	II	I-II
UNITED STATES (1960-73; 1973-81)			
Agriculture	0.9	1.9	-1.0
Mining and Quarrying	2.8	2.0	0.8
Manufacturing	5.0	1.2	3.8
Construction	2.1	-1.7	3.8
Private Services (1)	4.7	3.2	1.5
Total	4.3	2.2	1.1
JAPAN (1960-73; 1973-81)			
Agriculture	2.6	-2.0	4.6
Mining and Quarrying	4.8	0.9	3.9
Manufacturing	13.3	6.0	7.3
Construction	12.6	1.1	11.5
Private Services (1)	10.7	4.5	6.2
Total	10.7	4.1	6.6
GERMANY (1960-73; 1973-81)			
Agriculture	1.2	0.6	0.6
Mining and Quarrying	-2.0	-2.3	0.3
Manufacturing	5.2	1.6	3.6
Construction	3.6	0	3.6
Private Services (1)	4.7	3.4	1.3
Total	4.5	2.3	2.3
FRANCE (1960-73; 1973-81)			
Agriculture	1.6	-0.2	1.8
Mining and Quarrying	-1.0	-2.8	1.8
Manufacturing	7.7	1.8	5.9
Construction	5.1	-0.7	4.4
Private Services (1)	6.2	3.7	2.5
Total	5.8	2.5	3.3
UNITED KINGDOM (1960-73; 1973-81)			
Agriculture	2.6	1.6	1.0
Mining and Quarrying	-2.8	16.2	-19.0
Manufacturing	3.0	-2.5	5.5
Construction	2.6	-3.9	6.5
Private Services (1)	3.3	1.0	2.3
Total	3.0	0.5	2.5

Source: OECD National Accounts.

1. Including wholesale and retail trade, transport storage, communication, finance, insurance, real estate, community, social and personal services.

Appendix Table 2 (Continued)

SECTORAL OUTPUT TRENDS
(Average percentage change at annual rate)

	Pre-OPEC 1 I	Post-OPEC 1 II	Deceleration I-II
ITALY (1960-73; 1973-81)			
Agriculture	1.6	1.5	0.1
Mining and Quarrying	7.3	3.0	4.3
Manufacturing	7.3	2.7	...
Construction	2.9	0.3	2.6
Private Services (1)	5.7	3.1	2.6
Total	5.5	2.5	3.0
CANADA (1961-73; 1973-81)			
Agriculture	3.2	2.2	1.0
Mining and Quarrying	6.8	-2.2	9.0
Manufacturing	6.8	1.9	4.9
Construction	4.3	2.2	2.1
Private Services (1)	6.3	4.3	2.0
Total	6.2	3.2	3.0
BELGIUM (1960-73; 1973-81)			
Agriculture	0.6	0.5	0.1
Mining and Quarrying	-3.1	-4.5	1.4
Manufacturing	6.7	0.9	5.8
Construction	3.7	-0.7	4.4
Private Services (1)	5.0	2.0	3.0
Total	5.1	1.6	3.5
DENMARK (1966-73; 1973-81)			
Agriculture	-1.1	3.6	-4.7
Mining and Quarrying	4.0	7.5	-3.5
Manufacturing	5.0	1.5	3.5
Construction	1.8	-6.9	8.7
Private Services (1)	4.8	1.7	3.1
Total	3.6	1.1	2.5
FINLAND (1960-73; 1973-81)			
Agriculture	0.4	0.9	-0.5
Mining and Quarrying	3.6	4.3	-0.7
Manufacturing	6.7	3.4	3.3
Construction	3.6	-0.1	3.7
Private Services (1)	5.7	3.1	2.6
Total	4.7	2.6	2.1

1. Including wholesale and retail trade, transport storage, communication, finance, insurance, real estate, community, social and personal services.

Source: OECD National Accounts.

Appendix Table 2 (Continued)

SECTORAL OUTPUT TRENDS
(Average percentage change at annual rate)

	Pre-OPEC 1 I	Post-OPEC 1 II	Deceleration I-II
NETHERLANDS (1969-73; 1973-79)			
Agriculture	4.9	2.7	2.2
Mining and Quarrying	7.3	1.7	5.6
Manufacturing	...	...	...
Construction	1.5	-2.5	4.0
Private Services (1)	5.3	3.8	1.5
Total	5.5	2.4	3.1
NORWAY (1962-73; 1973-77)			
Agriculture	0.7	2.8	-2.1
Mining and Quarrying	12.0	40.5	-28.5
Manufacturing	5.1	0.7	4.4
Construction	3.9	4.9	-1.0
Private Services (1)	3.4	4.4	-1.0
Total	3.8	4.4	-0.6
SWEDEN (1963-73; 1973-81)			
Agriculture	1.4	-0.5	1.9
Mining and Quarrying	6.0	-5.1	11.1
Manufacturing	4.8	-0.2	5.0
Construction	2.5	0.7	1.8
Private Services (1)	3.4	2.3	1.1
Total	3.7	1.2	2.5
AUSTRALIA (1966-73; 1973-80)			
Agriculture	-0.2	2.0	-2.2
Mining and Quarrying	-0.1	1.0	-1.1
Manufacturing	6.3	2.8	3.5
Construction	5.6	0.6	5.0
Private Services (1)	5.6	4.4	1.2
Total	5.1	2.9	2.2
Weighted average (2)			
Agriculture	1.4	1.1	0.3
Mining and Quarrying	2.4	1.9	0.5
Manufacturing	6.2	1.7	4.5
Construction	3.9	-0.9	4.8
Private Services (1)	5.5	3.3	2.2
Total	5.2	2.5	2.7

1. Including wholesale and retail trade, transport storage, communication, finance, insurance, real estate, community, social and personal services.
2. 1973 real GDP weights.

Source: OECD National Accounts.

NOTES AND REFERENCES

1. If not otherwise stated consumer goods exclude food, tobacco, and beverages.
2. U.S. Council of Economic Advisors, Economic Report to the President, February 1984, p.89
3. OECD Economic Outlook No.34, December 1983, p.140.
4. Recorded structural shifts reflect changes in the sectoral location of occupations rather than genuine changes in the nature of jobs (e.g. contracting out of jobs to the service sector which were formerly executed within the manufacturing sector, leasing etc.). See: Deutsches Institut für Wirtschaftsforschung Wochenbericht 9th February, 1984; OECD Employment Outlook No. 2, September 1984.
5. W. Fellner, Trends and Cycles in Economic Activity, New York, 1956, p.369. See also U.K. Trade Union Congress, "Where are the New Jobs coming from?" (Internal Memorandum, 24th November, 1983).
6. For a theoretical discussion of main influences behind consumer choice see: J.S. Duesenberry, Income, Savings, and the Theory of Consumer Behaviour, Cambridge (Mass.) 1949.
7. Recent calculations of income elasticities for eight commodity groups in 30 countries shows comparatively high values for transport, communications, house furnishings, operations, gross rent and fuel, recreation, and medical care. However, no distinction is drawn between cyclical and more permanent forces. R. Finke, M.C. Rosalsky, and H. Theil, "A New Cross-Country Tabulation of Income Elasticities of Demand", Economic Letters 12 (1983), p.391-396. See also: J.A.S. Robertson, J.M. Briggs, and A. Goodchild, "Structure and Employment Prospects of the Service Industries", Research Paper No.30, U.K. Department of Employment, July 1982.
8. The specification for sectoral output prices (chosen for reasons of simplicity and lack of adequate data) has obvious shortcomings. Ideally, gross sectoral output prices instead of value added deflators should have been used as demand reacts to gross output rather than net output prices. Given the low level of disaggregation, however, it was thought defensible to maintain the above specification, in particular as empirical results derived from disaggregated private consumption functions accord well with the estimates based on sectoral output functions.

9. See OECD Economic Outlook, No.31, July 1982, p.16-17.
10. A comparison of empirical results for sectoral output functions and private consumption functions is seriously hindered by problems concerning the definition of private services on the production and consumption side.
11. D.M. Nilsen, "Employment in durable goods, anything but durable in 1972-82". Monthly Labour Review (U.S. Department of Labor, February 1984).
12. This point is highlighted by the fact that output growth in manufacturing after 1973 has generally weakened more strongly than real private consumption for goods (other than food, tobacco and beverages). On profitability see: OECD Economic Outlook No.33, July 1983, p.57.
13. Differences between productivity levels across countries for a given sector normally lead to a catching up process where countries suffering from a productivity level gap witness comparatively strong productivity gains.
14. The Verdoorn Law insists upon a strong connection between technical progress and output growth, i.e. output growth generates disembodied progress. "One could have expected a priori to find a correlation between labour productivity and output given that the division of labour only comes about through increases in the volume of production; therefore the expansion of production creates the possibility of further rationalisation which has the same effects as mechanisation": quoted from: "Fattori che regolano lo sviluppo della produttività del lavoro" L'Industria 1949.
15. According to econometric evidence, labour is the main substitute for energy, suggesting a lower trend rise in productivity when relative energy prices increase. See: OECD Economics and Statistics Department Working Papers No.1., March 1983, A. Mittelstädt, "Use of Demand Elasticities in Estimating Energy Demand.
16. OECD Economic Outlook No.32 and No.33, December 1982 and July 1983.
17. Note that the employment disparity in the private service sector arose despite:
 - i) similar rates of output growth (Table 16);
 - ii) a faster rise in part-time work in Europe (see OECD Employment Outlook, No.1 September 1983); and
 - iii) small differences between productivity levels in private services ruling out a catching up process in Europe to levels prevailing in the United States.
18. See OECD Economic Outlook No.33, July 1983.

19. A. Sapir, and D. Schumacher, "The Employment Impact of Shifts in the Composition of Commodity and Services Trade", Intergovernmental Conference on Employment Growth in the Context of Structural Change", Paris, February 1984 See also : OECD, The Impact of the Newly Industrialising Countries on Production and Trade in Manufactures (Report by the Secretary General) Paris 1979.
20. Three scenarios for US economic growth in the 1982-90 period imply broadly unchanged shares of service in total private consumption expenditure. Spending on consumer durables is projected to rise relative to total private consumption. (See U.S. Department of Labour, Bureau of Labor Statistics, November 1983.)
21. It is possible though that due to process innovation induced by the micro-electronic revolution productivity gains in the private service sector may turn out to be larger than expected. This would slow the traditional rise in relative output prices, but reduce the demand for labour per unit of service sector output.
22. Between November 1982 (the cyclical trough month) and December 1983, employment in U.S. manufacturing increased by 1.1 million persons and in the private service sector by 1.6 million persons.