

# GOODS AND SERVICES IN OECD COUNTRIES

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## INTRODUCTION

Media commentators frequently assert that OECD countries are becoming service economies. The vision that this conjures up – steel mills and car factories being replaced by fast-food stands and video arcades – is a disquieting one for policy-makers and the general public alike. The purpose of this article is to give some perspective to the place of services in OECD economies. To do this, use is made of OECD's national accounts data bank which contains comparable statistics for Member countries covering a period – for most of them – of more than 20 years.

The first section of the paper examines the relative importance of goods and service activities in terms of their contribution to GDP. Section II reviews the growth of constant price value added in these various activities since the early 1960s; because of the special problems involved, this section begins with a review of the methods commonly used for measuring the value added of service activities at constant prices. Sections III and IV repeat the same kind of analysis for employment, and Section V draws some tentative conclusions about labour productivity. Finally there is a summary of the main results.

All the tables below are based on the OECD's file of national accounts statistics compiled according to the UN-OECD System of National Accounts. These data are published in the OECD annual publication *National Accounts: Volume 2. Detailed Tables*. Where appropriate the last two rows of each table give means and standard deviations of the country statistics. The means are "unweighted" (i.e. equal-weighted) arithmetic averages; neither means nor standard deviations are shown when there are fewer than five observations.

### I. SHARES OF GOODS AND SERVICES ACTIVITIES IN GDP

Tables 1 and 2 give the information available for OECD countries on the proportionate breakdown of GDP according to kind of activity, averaged over the

period **1980** to **1984**. Table 1 shows the composition of value added according to activities defined at the 1-digit level of the International Standard Industrial Classification (ISIC), while Table 2 gives more detailed information on the contribution of various "market services," i.e. those produced by business enterprises. Both tables show each activity's value added as a proportion of "total value added at factor cost." This differs from GDP because it includes imputed bank services and excludes net indirect taxes; the former are deducted and the latter are added to obtain GDP at market prices. By using total value added as the denominator, the percentages for all goods and services add to **100** per cent. If GDP were used there would be (usually small) discrepancies for most countries.

Table 1 shows that **manufacturing** is the most important activity in all countries except Norway where **mining** activities – mainly North Sea oil – contributed slightly more to total value added. After this, three service activities – **trade, hotels and restaurants, financial and business services** and **government services** – each provide on average about **14** or **15** per cent of the total, and together with manufacturing account for two-thirds of total value added. **Transport and communications, community, social and personal services, agriculture** and **construction** each contribute around 7 per cent to the total, while **mining and quarrying** and **utilities** provide only about 3 per cent each.

At first sight, Table 1 confirms that OECD countries are "service economies", in the sense that most value added originates in service activities as defined in this table. The unweighted averages for the 22 countries are **57** per cent for "services" against **43** per cent for "goods," and Turkey is the only country where goods production accounts for more than half of total value added. In an important sense, however, these figures may be considered to be misleading. In Table 1, "services" are defined very broadly to cover all activities in divisions 6 through 9 of the ISIC, so that government and non-profit institutions are combined with private service producers. An alternative split, and one which probably corresponds more closely to common parlance, would be a three-way breakdown into "goods", "services", and "government" or, using the terminology of Table 1, **goods, market services, and non-market services**.

Leaving aside the latter – government plus the quantitatively trivial non-profit institutions – Table 1 shows that on average goods and (market) services contribute about equal amounts to total value added – **43** per cent and **44** per cent respectively. In twelve countries goods actually contributed more than services, and in the Netherlands and the United Kingdom they contributed about equal amounts. Only eight countries can be unambiguously defined as service economies according to this narrower definition – Canada, the United States, Japan, Australia, New Zealand, Denmark, France and Luxembourg.

	GOODS							SERVICES								
	Total	Transportable goods					Construction	Total	Market services					Non-market services		
		Total	Agriculture, forestry and fishing	Mining and quarrying	Manufacturing	Electricity, gas and water			Total	Wholesale, retail etc.	Transport hotels and communications	Finance, real estate, business	Community, social, personal	Total	Government services	Private non-profit services
Canada	38	33	4	6	19	4	6	62	42	..	8	13	..	20	17	2
United States	35	31	2	4	22	3	4	65	53	17	6	21	8	13	13	..
Japan	43	35	3	•	28	3	8	57	47	..	6	14	..	10	8	2
Australia	39	33	5	6	16	3	6	..	58	..	7	21	..	..	..	..
New Zealand	41	36	9	1	23	3	5	59	46	21	8	14	3	13	12	1
Austria	44	36	4	1	29	3	8	56	41	17	6	14	3	15	14	1
Belgium	36	29	2	1	23	3	6	64	49	..	8	13	..	15	14	1
Denmark	34	27	6	1	19	1	6	66	43	14	8	16	5	24	23	1
Finland	46	38	9	•	26	3	8	54	37	11	8	14	4	17	15	2
France	41	34	4	1	27	2	7	59	45	13	6	18	9	14	13	1
Germany	45	39	2	1	33	3	6	55	41	11	6	..	..	14	12	2
Greece	48	40	18	2	19	2	7	52	42	13	8	..	..	10	10	..
Italy	46	38	6	..	28	..	8	54	40	15	6	..	..	14	13	1
Luxembourg	39	33	3	..	27	..	7	61	48	16	5	12	14	13	12	1
Netherlands	39	32	4	7	18	2	7	61	47	13	6	15	12	15	14	1
Norway	46	39	4	17	15	4	7	54	40	14	10	12	5	14	14	..
Portugal	48	40	10	1	28	2	7	53	41	21	5	8	..	12	11	1
Spain	47	39	9	2	26	2	8	53	43	17	7	9	10	10	9	1
Sweden	39	31	4	•	24	3	8	61	36	12	7	13	4	26	25	1
Turkey	53	49	20	2	24	2	4	47	39	16	10	7	6	8	8	..
United Kingdom	42	36	2	7	24	3	6	58	42	12	7	18	5	16	15	1
Mean	43	36	6	3	24	3	7	57	44	15	7	14	7	15	14	1
Standard deviation	5	5	5	4	4	1	1	5	5	3	1	4	4	4	4	*

Symbols: • less than 0.5.

Table 2. Share in total value added of detailed market service activities: 1980-84 average

Per cent

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	Wholesale and retail trade, hotels and restaurants		Transport, storage and communications		Finance, insurance, real estate and business services				Community, social and personal services								
	Wholesale and retail trade	Hotels and restaurants	Transport	Communications	Financial institutions	Insurance	Real estate and business services			Sanitary and similar services	Social and community services				Recreational and cultural services	Personal and household services	
							Total	Real estate except dwellings	Dwellings		Business services	Total	Education	Health			Other
Canada	11	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
United States	16	1	4	3	3	2	17	8	9	..	..	6	1	4	1	1	2
Japan	15	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Australia	15	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
New Zealand	..	..	5	3	..	3	..	..	..	..	..	..	..	..	..	..	..
Austria	14	4	4	2	5	1	8	..	5	2	..	2	..	..	..	1	1
Denmark	13	1	7	1	2	*	13	..	9	4	..	1	*	1	..	1	3
Finland	10	2	6	2	4	..	11	4	6	..	*	1	*	*	..	1	2
France	10	2	4	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Germany	10	1	4	2	4	1	6	..	..	..	..	..	..	2	..	..	..
Greece	13	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Iceland	10	1	6	1	4	*	9	..	..	..	..	1	..	..	..	1	3
Italy	13	3	5	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Luxembourg	14	2	3	2	..	..	..	..	..	..	..	..	..	..	..	..	..
Netherlands	12	2	5	2	4	1	10	..	..	..	..	6	..	..	..	1	5
Norway	13	1	7	2	4	*	8	1	4	4	*	2	4	1	4	1	2
Portugal	18	3	4	2	5	1	2	..	..	..	..	..	..	..	..	..	..
Spain	13	4	5	1	4	1	..	..	..	..	..	3	1	2	..	..	..
Sweden	11	1	5	2	..	1	13	1	9	3	1	1	..	*	..	1	1
Turkey	16	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mean	13	2	5	2	4	1	10	9	..	..	..	3	1	2	..	1	2
Standard deviation	2	1	1	1	1	1	4	4	..	..	..	2	4	1	..	0	1

Symbols: \* less than 0.5.  
 .. not available.

The most striking aspect of Table 2, which shows the greatest detail available on market services, is the number of missing observations. In defence of statisticians, however, it should be noted that the empty cells refer generally to activities that are relatively insignificant in quantitative terms. Missing observations do not, of course, mean that no estimate is made for the activity concerned, but rather that the statisticians consider their estimates to be too unreliable to be separately published, so that they give only figures at a higher level of aggregation – usually at the 1-digit ISIC levels used in Table 1.

The two most important market services are **wholesale and retail trade and real estate and business services**. Together these account, on average, for 23 per cent of total value added, or more than half of all value added in market services. **Transport** is the next most important activity, followed by **financial institutions** and **social and community services**. Other service activities – **hotels and restaurants, communications, insurance, recreational and cultural services**, and **personal and household services** are quantitatively trivial activities contributing only 1 or 2 per cent to total value added.

"Services" are a heterogeneous group of activities which have defied most attempts at classification. In what follows a simplistic, but it is hoped revealing, classification is proposed between services "directly linked to goods production" and "free-standing" services. "Directly linked" means service activities that are a **necessary adjunct** to the process of producing goods. Many of these were, and often still are, provided by the goods producers themselves. Indeed, it is only when they are provided by specialist producers that they are recorded as service activities. When they are produced within a goods-producing establishment their value added is included as part of goods production.

It has frequently been noted that part of the "decline" of manufacturing, as measured by its falling share in total value added or employment, is due to formerly "in-house services" – security, cleaning, recruitment, and data processing for example – being contracted out to specialist service producers. The value added of these activities, when they are provided by specialist producers, swells the recorded contribution of services to total value added and diminishes that of the manufacturers who previously provided these services for themselves. It is argued that the apparent decline in "goods" output and employment, and the concomitant increase in "services", is a statistical illusion which reflects merely greater specialisation rather than a fundamental change in the mix of output.

While this argument is valid, it would be a mistake to conclude that this is a new trend affecting the interpretation of national accounts statistics only in the recent past. Specialisation is a fundamental characteristic of economic development: a century ago farmers and manufacturers commonly transported their goods to

market, sold them to final consumers, and raised their own capital funds, as well as providing auxiliary services such as cleaning, security and data processing. These activities have been gradually taken over by specialist producers in retail and wholesale trade, transport, finance, real estate and business services.

Separating out services that are directly linked to goods production – i.e. those that are a necessary adjunct to goods production – leaves a group of what are here termed "free-standing services". These are services bought by households in their capacity as final consumers. Free-standing services may of course involve the consumption of goods; restaurant meals are based mainly on agricultural or fishery products and many recreational services need manufactured goods such as bats and balls to make them feasible. But their connection with the goods producing sector is clearly of a different nature from that of services "directly linked to production".

Classifying services into these two groups – "directly linked to goods production" and "free standing" services – can be done only approximately using the ISIC classification in Table 2 because, for example, the classification does not

**Table 3.** Average share of market services in total value added broken down by whether "directly linked to goods production" or "free-standing"

Per cent

Service activity	Directly linked to goods production	Freestanding	Total
Wholesale and retail trade	13	0	13
Hotels and restaurants <sup>a</sup>	½	1½	2
Transport <sup>b</sup>	2½	2½	5
Communications <sup>c</sup>	1	1	2
Financial institutions <sup>c</sup>	2	2	4
Insurance <sup>c</sup>	½	½	1
Real estate, except dwellings <sup>d</sup>	3	0	} 9
Dwellings <sup>d</sup>	0	6	
Business services	3	0	3
Social and community services	0	3	3
Recreational and cultural services	0	1	1
Personal and household services	0	2	2
<b>Total</b>	<b>25½</b>	<b>19½</b>	<b>45</b>

a) It is assumed that three-quarters of expenditure on restaurants and hotels is by households for leisure purposes, and the remaining quarter for business entertainment.

b) Information is not available on the relative proportions between goods and passenger transport. Road transport is assumed to be mainly freight, air transport mainly passengers, and other transport evenly divided between merchandise and passengers.

c) Arbitrarily divided 50/50 in the absence of other information.

d) The scattered observations in Table 2 suggest that dwellings (including 'ownership of dwellings') is generally the largest part of total real estate.

Source: The total column contains the (unweighted) averages given at the bottom of Table 2.

distinguish between financial services provided to goods producers on the one hand and those provided to households or free-standing service producers on the other. Nor does it break down transport into goods and people, and the latter into "work-related" and "recreational" transport. Arbitrary (usually fifty-fifty) decisions have been made in compiling Table 3, which shows the average proportionate contribution of service activities to total value added divided between services "directly linked to goods production" and "free standing" services. The footnotes specify the assumptions made in dividing mixed service activities that cannot be unambiguously divided into the two categories.

Table 3 suggests that the majority of service activities are directly linked to the production of goods. On average, they contribute 25 per cent to total value added, compared with 20 per cent for "free standing" services. In view of the arbitrary way in which several service activities had to be divided into the two categories, the safest conclusion would probably be that about half of market services are directly linked to goods production. Table 1 showed that goods producing industries account for about 43 per cent of total value added and if the value added of "directly linked" services is added to this, goods production appears to be currently generating – directly and indirectly – around two-thirds of GDP. Far from being "service economies", OECD economies remain firmly anchored in the production of goods.

## II. LONG-TERM GROWTH RATES OF REAL VALUE ADDED IN SERVICES

Measures of real value added in service activities are generally regarded as being less reliable than for goods producing industries. This is mainly because statistical offices have historically paid more attention to statistics on goods production, so that service statistics are relatively under-developed, but there are also conceptual difficulties in defining the output of certain types of services – most notably those provided by government agencies. The Economic Statistics and National Accounts Division of the OECD has recently carried out a survey of the methods used by Member countries for estimating constant price value added for service activities, and before looking at the long-term changes in service value added, it is useful to summarise the main findings and conclusions from this enquiry.

"Double-deflation" is generally accepted as the proper method of estimating value added at constant prices. This involves revaluing intermediate inputs and gross output at the prices of some base year, and constant price value added is then obtained as the difference between the two, i.e. in the same way as nominal value

added is calculated. However, while double deflation is the theoretically correct procedure, it should be noted that there may be legitimate doubts about the results obtained from double deflation as it is applied in practice.

The main problem with double deflation is that in many countries relatively little information is available on the composition of inputs. Often detailed statistics on inputs are collected only every five or ten years when input-output matrices or other bench-mark tables are compiled. In these circumstances it is usually necessary to assume that the composition of inputs does not alter in the years between bench-mark surveys, but this is a dangerous assumption because changes in relative prices will in general lead to substitution. When producers substitute cheaper for more expensive inputs, the assumption of an unchanged input mix will tend to overstate the value of inputs at constant prices, and hence to understate real value added.

Double-deflation is extensively used for market services by seven countries – Canada, Denmark, France, Germany, Japan, Netherlands and Norway. Other countries mainly use "single indicator" methods for estimating constant price value added for services. Two single-indicator methods that are widely used for market services are the deflation of current value added by a price index relating to gross output, and the extrapolation of base-year value added by a volume index of gross output. A large majority of the fifteen countries not using double deflation use one or other of these single indicator methods for the following services: *wholesale* and retail trade, hotels and restaurants, transport, communications, recreational, cultural, personal and household services.

There are at least two problems with single indicator methods. The first is that they assume, respectively, that prices and quantities of intermediate consumption change in the same way as those of gross output. This assumption is clearly questionable, although it should be noted that the errors arising from this source may be trivial in the case of services because for many of these activities intermediate consumption is small in relation to gross output. The second problem – which applies equally to double deflation – arises from the difficulties of measuring changes in the quality of service output. Quality improvements should be treated as increases in the volume of output and deteriorations in quality as decreases, but it is clear that many, perhaps most, of the indicators used to measure the volume of service output do not properly capture quality changes. Some examples will serve to demonstrate the problem. For retail and wholesale trade, most countries measure changes in the volume of output by reference to the quantity of goods traded. In the last two decades, however, there has been a marked trend for shops in most OECD countries to relocate in peri-urban commercial centres. The conveniences of free parking, longer shopping hours, and uncongested surroundings represent a genuine

improvement in the quality of the output of retail trade which is not reflected in an output measure based merely on the volume of merchandise sold. In the passenger transport industry, the introduction of computerised booking systems has greatly reduced the time and effort needed to reserve seats in trains and aeroplanes. This evident improvement in the quality of transport services will not be reflected in the measured volume of transport output if, as is almost universally the case, the real value added of these services is measured by reference to passenger-kilometres.

Of course, not all quality changes can be regarded as improvements. When the number of letters and parcels delivered is used to extrapolate the base-year value added of the postal services, the resulting volume measure will overstate real output if, as may be the case in several countries, reliability and delivery times are deteriorating. The most plausible hypothesis, however, is that service quality has, on balance, tended to improve over the last two decades, and that many of these quality improvements are not properly reflected as quantity increases in the volume measures recorded in the nation accounts.

Despite difficulties in their application, double-deflation and the single indicator methods described above may both be described as acceptable on theoretical grounds. Another, and much less acceptable, type of single indicator method is almost universally used for **government services**. It is also quite widely used for **financial services, real estate and business services**, and **social and community services**. This method consists of extrapolating base year value added by an index of the number of employees. The problem here is that the indices do not properly take account of changes in labour productivity. For **government services** all countries take account of one potential source of productivity changes, namely changes in the skill composition of the labour force, and four countries, Belgium, Germany, Italy and Luxembourg, make a further adjustment by assuming an additional productivity increase – usually about 0.5 per cent per year. On the assumption that labour productivity in government services has been rising during the last two decades from such influences as office automation, computerisation, or advances in management techniques, estimates of the growth of real value added in government services will be understated for most countries. The alternative assumption of declining labour productivity in government is also tenable, but on balance seems less reasonable.

For those **market services** for which constant price value added is estimated by employment indices, five countries make productivity adjustments of around 1 or 2 per cent per annum. The countries concerned are Austria, Germany, Netherlands, Sweden, and United Kingdom.

It will be clear from the above that there are special problems in the measurement of value added in service activities. To a large extent these stem from statisticians' traditional neglect of activities that do not involve the production of goods; in most **OECD** countries relatively few basic data are available on the inputs into service production or on the different types and qualities of services produced. Lacking adequate information in these areas, statisticians inevitably fall back on simplistic assumptions such as no change in input mix, no change in output quality, and no change in labour productivity. It can plausibly be argued that all three of these assumptions will tend to produce a downwards bias in estimates of the growth of value added at constant prices. This should be kept in mind, when considering the results in the remainder of this section.

In Tables 4 and 5 below, growth rates for real value added are divided by the growth rate of total **GDP**, i.e. they are expressed as "**GDP** elasticities". A value of unity means that real value added of a particular activity was growing at the same rate as **GDP** as a whole; values of less or more than unity indicate lower or higher growth rates respectively than that of **GDP**.

Relating the growth rates for value added in each kind of activity to the growth rate of **GDP** facilitates comparisons between countries which have had widely different growth rates throughout the period – Japan and the United Kingdom, for example. It also helps to correct for the fact that the data refer to different periods with different cyclical variations, and with different underlying growth tendencies – such as the high real growth **1960s** and the high inflation **1970s**. The exact periods covered for each country are given in Table 4; for fourteen countries the period covered exceeds twenty years, and more than thirteen years for a further five countries. For New Zealand, however, the data cover only five years. New Zealand is included in the tables below because it publishes estimates of current and constant price value added for detailed kinds of activities, but, given the limited length of the reporting period, the data cannot properly be compared with those shown for the other nineteen countries.

As regards the basic split between goods and services, Table 4 shows that the growth of real value added in goods-producing activities taken as a whole has been less than for total **GDP**, while the opposite is true for the total of service activities – the arithmetic averages of the respective elasticities for the 20 countries being **0.89** and **1.15**, respectively, and the true difference may well be greater in view of the measurement problem discussed above. These figures do, however, conceal some important differences not only between countries but also between the different kinds of activities within the two main sectors. Within the goods-producing industries the growth of real value added in **construction** has been particularly low, and when this activity is eliminated the rate of growth for the

Table 4. Annual growth rates of value added at constant prices compared to growth of GDP: goods and services

Per cent

	GOODS							SERVICES							Period covered		
	Total	Transportable goods					Construction	Total	Market services				Nonmarket services				
		Agriculture, forestry and fishing	Mining and quarrying	Manufacturing	Electricity, gas and water	Total			Wholesale, retail hotels etc.	Transport and communications	Finance, real estate, business	Community, social personal	Total	Government services		Private non-profit services	
Canada	0.81	0.93	0.62	0.61	0.96	1.55	0.62	1.06	1.17	..	1.29	1.29	..	0.79	0.79	0.80	1960-83
United States	0.81	0.90	0.22	0.65	1.01	1.27	0.13	1.13	1.26	1.16	1.29	1.49	1.06	..	0.68	..	1960-83
Japan	1.10	1.13	0.07	0.42	1.56	0.94	0.43	0.98	1.08	..	1.03	1.06	..	0.68	0.61	1.26	1960-83
Australia	0.65	0.74	1.04	1.41	0.25	1.89	0.07	..	1.23	..	1.74	1.35	..	..	..	..	1962-83
New Zealand	1.24	1.59	2.23	-1.11	1.32	2.44	-1.16	0.75	0.76	0.00	1.71	1.35	1.24	0.69	0.82	-0.96	1977-82
Austria	0.95	0.97	0.46	-0.02	1.07	1.40	0.94	1.06	1.48	1.11	1.32	1.55	0.97	0.73	0.79	-0.02	1960-83
Belgium	0.94	1.09	0.16	-0.93	1.19	1.49	1.00	1.06	1.06	..	0.74	1.20	1.11	1.05	1.23	-0.15	1960-83
Denmark	0.72	1.12	0.57	6.79	1.18	1.68	4.52	1.29	1.00	0.83	0.40	1.72	0.64	1.91	2.08	-0.96	1966-83
Finland	0.85	0.90	0.12	1.03	1.26	1.55	0.62	1.11	1.15	1.05	1.10	1.35	0.90	1.02	1.20	0.19	1960-83
France	0.98	1.02	0.35	-1.01	0.95	2.05	0.82	1.08	1.15	0.93	1.22	1.39	1.10	0.61	0.63	0.27	1960-83
Germany	0.88	0.94	0.51	-0.66	1.01	1.88	0.50	1.17	1.24	0.91	1.30	..	..	0.99	1.09	0.50	1960-83
Greece	0.94	1.00	0.53	1.08	1.27	2.08	0.54	1.09	1.09	..	1.36	1.09	..	..	0.92	..	1960-83
Italy	0.95	1.05	0.50	..	1.12	..	-0.09	1.01	1.13	1.24	1.24	..	..	0.67	0.68	0.32	1960-83
Luxembourg	0.35	0.27	0.24	..	0.48	..	0.78	2.63	3.04	2.15	1.88	6.12	1.69	1.21	1.19	1.29	1970-82
Norway	1.15	1.22	0.37	4.67	0.60	1.14	0.86	0.93	0.78	0.61	0.85	0.93	0.85	..	1.39	..	1962-83
Portugal	0.94	0.89	0.05	1.18	1.25	1.47	0.97	1.16	1.00	0.98	1.20	1.07	..	1.55	1.89	-0.82	1960-76
Spain	1.01	1.05	0.35	0.58	1.40	1.47	0.85	0.98	1.03	0.89	1.61	..	..	0.82	0.96	-0.08	1964-81
Sweden	0.65	0.76	0.27	-1.86	0.61	3.27	0.35	1.13	0.96	0.81	2.00	0.96	1.35	1.34	1.44	-0.44	1970-83
Turkey	0.91	0.89	0.50	1.04	1.48	1.73	1.02	1.19	1.21	..	1.25	0.98	..	..	1.11	..	1960-83
United Kingdom	1.04	1.77	1.17	7.81	-1.00	0.92	-1.23	0.96	1.16	-0.12	0.55	2.32	1.95	..	0.61	..	1960-83
Mean	0.89	1.01	0.52	1.20	0.95	1.68	0.38	1.15	1.20	0.90	1.25	1.60	1.17	1.00	1.06	0.09	
Standard deviation	0.20	0.30	0.50	2.63	0.57	0.56	0.67	0.38	0.46	0.54	0.41	1.21	0.38	0.38	0.42	0.73	

Symbols: .. not available

Table 5. Annual growth rates of value added at constant prices compared to growth of GDP: detailed service activities

	Wholesale and retail trade, hotels and restaurants		Transport, storage and communications		Finance, insurance, real estate and business services					Community, social and personal services							
	Wholesale and retail trade	Hotels and restaurants	Transport	Communications	Financial institutions	Insurance	Real estate and business services				Sanitary & similar services	Social and community services				Recreational & cultural services	Personal and household services
							Total	Real estate except dwellings	Dwellings	Business services		Total	Education	Health	Other		
Canada	1.05	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
United States	1.16	1.06	0.65	2.29	1.29	1.00	1.45	1.45	1.48	..	..	1.42	0.84	1.71	0.87	1.10	0.26
Japan	1.17	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Australia	0.84	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
New Zealand	..	..	0.65	3.53	1.76	1.06	..	..	..	..	..	..	..	..	..	..	..
Austria	1.19	0.58	1.26	2.16	2.39	1.77	1.23	1.45	..	0.79	..	0.94	..	..	..	1.06	0.90
Denmark	0.84	0.56	0.08	2.80	0.96	-1.36	2.00	..	2.12	2.24	..	0.96	-0.32	1.08	..	1.20	0.28
Finland	1.03	1.18	0.90	1.75	1.35	..	1.38	1.73	1.18	..	0.65	0.70	1.53	0.55	..	1.75	0.73
France	1.03	0.51	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Germany	0.97	0.26	0.82	1.94	1.97	2.03	1.06	..	..	..	..	..	..	1.24	..	..	..
Greece	1.09	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Italy	1.26	1.21	1.17	2.43	..	..	..	..	..	..	..	..	..	..	..	..	..
Norway	0.66	0.27	0.73	1.46	0.68	-1.22	1.07	1.49	0.93	1.23	1.51	0.59	0.34	0.61	0.75	1.51	0.88
Portugal	0.88	1.68	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Spain	0.76	0.90	1.50	2.86	..	..	..	..	0.88	..	..	1.47	0.71	1.98	..	..	0.82
Sweden	1.00	-1.00	2.18	1.53	..	1.47	1.35	3.59	0.88	2.10	1.88	2.24	..	1.00	..	3.12	-0.18
Turkey	1.40	..	..	..	..	..	..	..	0.85	..	..	..	..	..	..	..	..
United Kingdom	..	..	0.51	1.38	..	..	..	..	..	..	..	..	..	..	..	..	..
Mean	1.02	0.66	0.95	<b>2.19</b>	1.49	<b>0.68</b>	1.36	..	1.19	..	..	1.19	..	1.17	..	1.62	0.53
Standard deviation	0.19	0.70	0.56	<b>0.68</b>	0.59	<b>1.39</b>	0.32	..	0.47	..	..	0.57	..	0.53	..	0.78	0.41

Symbols: .. not available. The periods covered are same as shown in Table 4.

1  
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remaining "transportable" goods industries has been about the same, on average, as for GDP as a whole. In the services sector, real value added of *non-market services* has been growing at the same rate, on average, as for total GDP, while the growth rates for *wholesale and retail trade, hotels and restaurants* are generally lower.

The inter-country differences in Table 4 call for some comments. The growth elasticity for *agriculture* in the United Kingdom is substantially higher than those for other European countries because of the modest growth of the denominator (GDP); the absolute growth rate of real value added in agriculture in the United Kingdom is broadly in line with growth rates in other EEC countries. The high elasticities recorded for *mining and quarrying* are due to the exploitation of North Sea oil and gas, while the high elasticities for *utilities* shown for Sweden and France possibly reflect a switch from oil to electricity and gas for heating and industrial purposes. For *manufacturing*, the highest elasticities are, not surprisingly, recorded for Japan, Spain and Turkey, with both the latter two countries having started the period with a small manufacturing base, while the lowest elasticities are recorded for Australia and the United Kingdom, the negative elasticity for the latter indicating an absolute decline in real value added. In Luxembourg, the growth of the real value added in *finance, real estate and business services* has been more than six times as high as that for GDP. This is mainly due to the rapid growth – from a small initial base – of the banking sector.

Table 5 brings together the somewhat scattered information on the growth of real-value added in services at the 2-digit level of the ISIC. The growth rate for *wholesale and retail trade, hotels and restaurants* which, on average, is the lowest for any service activity, is accounted for by low growth rates for hotels and restaurants, the growth rate for the trade sector being about the same as for total GDP in most countries. This latter, somewhat surprising, result may in part be due to measurement errors: for hotels several countries use simple indices of hotel-nights to extrapolate base-year value added, and this may not capture improvements in the quality of hotel accommodation. The average elasticity of 1.25 given in Table 4 for *transport and communications* is shown, in Table 5, to be composed of below-average growth rates for transport and very high rates of growth for communications. In several countries, real value added in communications activities – which includes satellite and related telecommunications – has been growing more than twice as fast as the economy as a whole.

Table 4 shows that in almost all countries the growth of real value added in *finance, real estate and business services* has been faster than in any other major activity. Unfortunately, few countries publish estimates of real value added for all the detailed ISIC activities included in this group, but the data available in Table 5 suggest that the growth of real value added in *financial services, real estate (other*

*than home ownership*) and *business services*, such as legal, accounting, design and data processing services, has been particularly rapid. Real value added in *community, social and personal services* has also been growing more rapidly in most countries than for the economy as a whole. Although there are again few data on the six detailed activities included in this group, it appears from Table 5 that the growth of real value added in *education* and *personal and household service* has been below that for GDP, while real value added has been growing in the other four activities at above-average rates.

### III. SHARES OF GOODS AND SERVICES IN TOTAL EMPLOYMENT

The disaggregated employment data in this and the following section are consistent with the value added data considered above. They refer to the input of labour into production rather than the number of people with jobs: a person who works eight hours in a car factory and four hours as a cinema attendant is counted here as one unit of employment in manufacturing and half a unit in recreational and cultural services. These statistics are supplied by Member countries in their replies to the annual questionnaire on standardised national accounts.

Tables 6 and 7 show the proportionate breakdown of employment according to kind of activity, averaged over the period **1980-1984**. Table 6 shows the basic split between goods and services. For the sixteen countries covered, goods producing industries account, on average, for **41** per cent of employment compared with **59** per cent for "services" on the broadest definition. When only the market sector is considered, however, goods and services have virtually identical employment shares – **41** per cent and **40** per cent respectively. As is the case with value added, *manufacturing* is the most important sub-sector, accounting on average for nearly a quarter of total employment. *Trade, restaurants and hotels* and *government services* each employ about **17** per cent of the working population, and together with manufacturing account for about two-thirds of total employment. *Community, social and personal services* are the next most important source of employment, followed by *agriculture, forestry and fishing, construction, transport and communications*, and *finance, real estate and business services*. *Mining and quarrying* and *gas, water and electricity* account, on average, for only about **1** per cent of employment.

For most activities the employment shares are rather stable between countries. *Agriculture* is one exception, with employment shares varying from **3** per cent in the

Table 6. Share in total employment of activities defined at 1-digit level of ISIC: 1980-1984 average

Per cent

	GOODS							SERVICES								
	Total	Transportable goods					Construction	Total	Market services					Nonmarket services		
		Total	Agriculture, forestry and fishing	Mining and quarrying	Manufacturing	Electricity, gas and water			Total	Wholesale, retail, hotels etc.	Transport and communications	Finance, real estate, business	Community, social, personal	Total	Government services	Private non-profit services
United States	30	25	4	1	19	1	5	70	53	23	4	11	15	17	17	..
Japan	47	37	12	*	24	1	10	53	44	18	5	4	17	9	7	2
Australia	35	28	6	1	19	2	7	65	60	20	8	9	23	5	5	..
Belgium	35	28	3	1	23	1	7	65	43	19	7	..	..	22	19	3
Denmark	36	29	8	*	20	1	7	64	33	13	7	8	5	31	30	1
Finland	46	38	13	*	24	1	8	54	31	14	7	6	4	23	19	4
France	41	33	8	1	23	1	8	59	40	16	6	7	11	19	19	..
Germany	48	40	5	1	33	1	8	51	33	16	6	3	8	18	15	3
Iceland	47	37	12	0	24	1	10	53	33	13	7	6	7	20	17	3
Italy	47	39	12	*	26	1	8	52	35	20	6	..	..	17	15	2
Luxembourg	42	32	5	..	26	..	10	58	45	..	7	5	..	13	11	2
Netherlands	35	27	6	*	20	1	8	66	49	18	7	8	16	17	16	1
Norway	39	31	8	1	21	1	8	61	38	15	10	5	8	23	23	..
Portugal	54	44	23	..	20	..	10	45	33	12	4	2	15	12	9	3
Sweden	35	28	5	*	22	1	7	65	32	14	7	5	6	33	32	1
United Kingdom	37	31	3	..	..	3	6	64	42	..	6	..	..	22	22	..
Mean	41	33	8	1	23	1	8	59	40	17	7	6	11	19	17	2
Standard deviation	7	6	5	*	4	1	1	7	8	3	1	2	6	7	7	1

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Table 7. Share in total employment of detailed market service activities: 1980-1984 average

Per cent

	restaurants and hotels		Transport	Storage and communications	Finance, insurance, real estate and business services			Community, social and personal services						
	Wholesale & retail trade	Restaurants and hotels	Transport	Communi- cations	Financial institutions	Insurance	Real estate and business services	Sanitary and similar services	Social and community services				Recreational and cultural services	Personal & household services
									Total	Education	Health	other		
United States	21	1	3	1	3	2	7	..	10	1	6	3	1	4
Australia	..	..	6	2	..	..	..	..	..	..	..	..	..	..
Denmark	12	2	5	2	3	1	5	..	1	*	1	..	1	3
Finland	12	3	5	2	3	..	3	1	1	*	1	..	1	2
France	13	3	4	2	2	1	4	•	7	..	..	..	1	2
Germany	13	3	4	2	2	1	..	..	..	..	..	..	..	..
Iceland	11	2	6	1	3	1	2	..	1	..	..	..	1	5
Italy	16	3	5	1	..	..	..	..	..	..	..	..	..	..
Luxembourg	..	..	5	1	..	..	..	..	..	..	..	..	..	..
Netherlands	16	2	5	2	2	1	4	..	7	..	..	..	1	..
Norway	13	2	7	3	2	1	3	•	3	1	1	1	1	4
Portugal	9	2	3	1	1	*	1	..	..	..	..	..	..	..
Sweden	12	2	5	2	1	1	4	1	2	1	1	..	1	2
Mean	13	2	5	2	2	1	4	..	6	1	3	..	1	3
Standard deviation	3	1	2	1	1	1	2	..	4	*	3	..	0	1

Symbols: \* less than 0.5  
.. not available.

United Kingdom and Belgium to 23 per cent in Portugal. **Government services** also display considerable differences in employment shares. This is due partly to differences in the size of armed forces, but the main explanation lies in differences in the relative importance of government versus private health and education services. Table 6 shows that countries with low employment shares in government tend to have high employment shares in **community, social and personal services** where private health and education workers are recorded. Japan, Australia and Portugal are striking examples. The employment shares shown for Denmark and Sweden show that the converse is also true.

Table 7, which gives the most detailed information available on employment in market services, contains even fewer data than the corresponding table for value added, and can support only a few general conclusions. In all countries, **wholesale and retail trade** is by far the most important source of service employment; in most countries **transport** and **real estate and business services** are next in importance. It is interesting that several service activities that are commonly assumed to be growth points, either because they have high income elasticities of demand or because they are "information-based", are relatively unimportant in terms of current employment shares. These include **communications, financial institutions, insurance, hotels and restaurants** and **recreational and cultural services**; in most countries each employs no more than 1 or 2 per cent of the working population.

Table 8. Average share of market services in total employment, broken down by whether "directly linked to goods production" or "free-standing"

Per cent			
Service activity	Directly linked to goods production	Freestanding	Total
Wholesale and retail trade	13	0	13
Hotels and restaurants	$\frac{1}{2}$	$1\frac{1}{2}$	2
Transport	$2\frac{1}{2}$	$2\frac{1}{2}$	5
Communications	1	1	2
Financial institutions	1	1	2
Insurance	$\frac{1}{2}$	$\frac{1}{2}$	1
Real estate and business services	2	2	4
Sanitary and similar services	0	1	1
Social and community services	0	6	6
Recreational and cultural services	0	1	1
Personal and household services	0	3	3
Total	$20\frac{1}{2}$	$19\frac{1}{2}$	40

Note: See Table 3 for an explanation of the split between 'freestanding' services and those 'linked to goods production'

Table 8 shows the distribution of employment between "free standing" services and those "directly linked to goods production". As was the case in Table 3, which gives the same break-down for value added, "free standing" services account for slightly less employment than services "linked to goods production". In view of the arbitrary way in which some activities have had to be split between the two categories, the safest conclusion would be that employment is about equally divided between the two.

#### IV. LONG-TERM GROWTH RATES OF EMPLOYMENT IN SERVICES

Tables 9 and 10 show the growth of employment in various activities compared with the growth of total employment. The figures in these tables show the annual percentage growth of employment in a given activity that is associated with a one per cent increase in total employment. The standardized growth rates are averaged over the periods shown in the right-hand column of Table 9. The periods range from thirteen years for Luxembourg to 25 years for Finland and Italy, the average period being eighteen years. Although the periods are generally somewhat shorter than those available for value added, they are nevertheless long enough to capture underlying trends in employment.

Table 9 shows the basic split between goods-producing and service activities. In all countries employment in service activities has been growing more rapidly, and in goods-producing activities less rapidly, than total employment. The average of the sectoral employment elasticities for the fifteen countries in Table 9 are 1.27 and 0.75 for services and goods-producing activities respectively, and this difference in relative growth rates is remarkably consistent both across countries and across the activities distinguished in the table. **Electricity, gas and water** is almost the only goods-producing activity where employment has been growing faster than in the economy as a whole, and **private non-profit institutions** are almost the only service producers where employment has been growing more slowly than total employment.

Table 10 provides some scattered observations on sectoral employment elasticities in market services at the 2-digit level of the ISIC. Values of less than unity are common in two activities – **transport** and **personal and household services**. The highest elasticities are recorded for **financial institutions, health services, recreational and cultural services** and, especially, **real estate and business services**. Unfortunately no data are available on the rather different type of services included in this last category, but it seems probable that most of the employment growth is concentrated in business services.

Table 9. Annual growth rates of employment compared to growth of total employment: goods and services

Per cent

	GOODS						SERVICES						Period covered				
	Total	Transportable goods			Construction	Total	Market services			Non-market services							
		Agriculture, forestry and fishing	Mining and quarrying	Manufacturing			Electricity, gas and water	Wholesale, retail, hotels etc.	Transport and communications	Finance, real estate, business	Communi- nity, social, personal	Total		Government services	Private non-profit services		
United States	0.79	0.76	0.74	1.24	0.74	1.05	0.98	1.11	1.19	1.14	0.92	1.57	1.16	1.22	0.91	..	1968-83
Japan	0.77	0.82	0.58	0.51	0.91	1.12	1.15	1.22	1.22	..	0.97	1.41	..	1.22	1.14	1.55	1970-84
Australia	..	..	0.77	1.11	0.70	..	0.83	..	..	..	..	1.35	..	..	..	..	1969-84
Belgium	0.71	0.71	0.62	0.54	0.72	1.05	0.69	1.25	1.23	1.05	..	..	..	1.30	1.42	0.78	1970-84
Denmark	0.68	0.67	0.50	0.62	0.77	1.09	0.69	1.32	1.03	0.83	1.00	1.88	0.96	1.92	2.30	0.34	1965-84
Finland	0.70	0.68	0.35	1.22	1.20	1.70	0.83	1.43	1.26	1.27	1.17	2.51	1.55	1.69	2.57	0.64	1960-84
France	0.78	0.78	0.59	0.54	0.86	1.25	0.77	1.23	1.25	1.09	1.11	1.48	1.56	1.19	..	..	1970-84
Germany	0.77	0.74	0.40	0.43	0.87	1.44	0.92	1.38	1.23	1.09	1.02	..	..	1.76	1.98	1.15	1960-84
Iceland	0.87	0.85	0.63	..	1.01	1.35	0.95	1.15	1.01	1.03	0.82	1.46	0.96	1.47	1.37	2.44	1970-84
Ireland	0.69	0.57	0.37	..	..	..	0.88	1.56	1.53	1.45	1.51	..	..	1.63	1.82	0.96	1960-84
Italy	0.77	0.72	0.51	..	0.78	..	1.00	1.26	1.20	1.20	1.03	..	..	1.20	1.18	1.35	1970-82
Luxembourg	0.74	0.75	0.83	0.40	0.73	1.13	0.70	1.22	1.20	0.98	1.07	1.50	1.50	1.26	1.33	0.68	1969-84
Netherlands	0.70	0.66	0.40	1.66	0.81	1.18	0.96	1.32	1.13	1.11	0.84	2.28	1.24	..	1.84	..	1962-84
Norway	0.74	0.75	0.60	0.65	0.78	1.11	0.70	1.22	1.01	0.93	1.06	1.30	0.94	1.52	1.60	0.67	1970-84
Sweden	0.74	0.71	0.82	..	..	0.80	0.95	1.22	1.22	..	0.94	..	..	..	1.21	..	1970-84
United Kingdom	0.74	0.71	0.82	..	..	0.80	0.95	1.22	1.22	..	0.94	..	..	..	1.21	..	1970-84
Mean	0.75	0.73	0.58	0.81	0.84	1.19	0.87	1.28	1.19	1.09	1.04	1.67	1.23	1.47	1.59	1.06	
Standard deviation	0.05	0.07	0.16	0.42	0.14	0.23	0.14	0.12	0.13	0.17	0.17	0.41	0.27	0.25	0.49	0.61	

Source: not available

**Table 10. Annual growth rates of employment compared to total employment: detailed service activities**

Per cent

	Wholesale and retail trade.		Communication		Financial	Insurance, business services	Real estate and business services	Community, social and personal services						
	Wholesale and retail trade	Restaurants and hotels	Transport	Communications	Financial institutions	Insurance	Real estate and business services	Sanitary and similar services	Cultural and recreation		Community services		Recreational and cultural services	Personal and household services
									Total	Education	Health	Other		
United States	1.14	1.17	0.85	1.12	1.45	1.15	1.79	..	1.46	1.08	1.77	..	1.36	0.77
Denmark	0.81	0.98	0.95	1.18	2.05	1.11	1.95	..	1.28	0.58	1.34	..	1.46	0.82
Finland	1.19	1.83	1.09	1.47	2.42	..	2.57	1.64	2.28	2.40	2.26	..	2.34	1.27
France	1.04	1.12	1.03	1.19	1.16	1.18	1.37	1.49	1.51	..	..	..	0.80	1.05
Germany	1.04	1.41	0.90	1.33	2.16	1.82	..	..	..	..	..	..	..	..
Iceland	1.00	1.23	0.84	0.78	1.47	0.90	1.71	..	1.40	..	..	..	1.26	0.84
Italy	1.43	1.55	..	..	..	..	..	..	..	..	..	..	..	..
Luxembourg	..	..	0.99	1.22	..	..	..	..	..	..	..	..	..	..
Netherlands	0.97	1.06	1.00	1.32	..	..	1.59	..	1.71	..	..	..	1.70	1.32
Norway	1.09	1.23	0.72	1.40	1.95	1.37	2.93	..	1.44	1.32	1.23	..	1.81	1.03
Sweden	0.91	1.04	1.03	1.13	1.24	0.99	1.37	1.37	1.19	1.30	1.17	..	1.32	0.62
Mean	1.06	1.26	0.94	1.21	1.74	1.22	1.91	..	1.53	1.46	1.55	..	1.51	0.97
Standard deviation	0.17	0.26	0.11	0.19	0.47	0.30	0.56	..	0.34	0.47	0.46	..	0.45	0.25

Symbols: .. not available. The periods covered are the same as shown in Table 9

## V. LABOUR PRODUCTIVITY

The statistics given above on real value added and employment can be used to illustrate differences in labour productivity as between goods producing and service activities. Table 11 brings together data on the **shares** and **growth rates** in real value added and employment.

The first block in the table gives the shares in real value added and employment, and the ratio between them. The shares are averaged over the fourteen countries common to both Tables 1 and 6. Ratios of more or less than unity mean that the value added per employee is greater or less than value added per employee in the economy as a whole. Ratios greatly in excess of unity are recorded for **mining and quarrying, electricity, gas and water, and finance, real estate and business services**. This is because in these activities an exceptionally large part of value added is generated by factor inputs other than labour – subsoil deposit in the case of mining, capital equipment for electricity generation, and perhaps "human capital" (i.e. special skills) in the case of financial and business services. Conversely, ratios below unity indicate that labour generates by far the greater part of value added – as in **government services, trade, restaurants and hotels, and community, social and personal services**.

The lower panel of Table 11 gives the annual growth rates of real value added and employment averaged over the twelve countries common to Tables 4 and 9. The ratio of these growth rates differs in two ways from the more usual statistics describing the growth of labour productivity. First, both growth rates have been standardised by reference to the growth of total value added and employment, and, secondly, they are ratios of (standardized) growth rates rather than growth rates of ratios.

Labour productivity in goods producing activities has been growing slightly more rapidly (ratio 1.1) than in the economy as a whole, while productivity growth in services (ratio 0.9) has been slightly below average. The above average productivity growth in the goods sector is attributable to the very high rate of growth in **mining and quarrying**. The value added generated by this activity is of a peculiar nature in that it comes from using up exhaustible resources – North Sea oil, for example. Ignoring this activity, productivity growth for the goods sector would be at about the national average. The below average productivity growth in the service sector is attributable to relatively low growth recorded for government services. As noted above, the growth of real value added in government may well be understated because of measurement problems, and if value added in government was measured in the same way as in other activities, productivity growth in services as a whole might well be also around the national average.

Table 11. Relative labour productivity in goods-producing and service activities

	GOODS							SERVICES								
	Total	Transportable goods					Constructio	Total	Market services					Non-market services		
		Total	Agriculture, forestry and fishing	Mining and quarrying	Manufacturing	Electricity, gas and water			Total	Wholesale, retail, hotels etc.	Transport and communications	Finance, real estate business	Community, social, personal	Total	Government services	Private non-profit services
<b>Percentage share in:</b>																
Real value added	41	34	4	4	24	3	7	59	44	14	7	15	8	16	14	1
Employment	41	33	8	1	23	1	8	59	41	17	7	6	11	20	17	2
Ratio	1.0	1.0	0.5	4.0	1.0	3.0	0.9	1.0	1.1	0.8	1.0	25	0.7	0.8	0.8	0.5
<b>Annual relative growth rates of</b>																
Real value added	0.85	0.99	0.43	1.67	0.79	1.48	0.29	1.21	1.25	0.96	1.18	1.89	1.18	1.05	1.07	0.25
Employment	0.74	0.72	0.56	0.85	0.82	1.15	0.87	1.28	1.21	1.11	1.05	1.72	1.24	1.49	1.63	0.93
Ratio	1.1	1.4	0.8	2.0	1.0	1.3	0.3	0.9	1.0	0.9	1.1	1.1	1.0	0.7	0.7	0.3

Source: The data on per cent shares are de

## SUMMARY

With the exception of Turkey, in all countries for which data are available, "services" broadly defined to include government activities now account for a greater share of total value added than goods producing activities such as agriculture, mining, manufacturing, construction and utilities. However, when government activities are removed the remaining "market services" account for about the same proportion of total value added as goods production and, in sixteen out of 22 OECD countries, goods producers contribute at least as much to total value added as do market service producers. This narrower definition of services, i.e. excluding government activities, may more closely correspond to what most members of the general public mean when they talk about the "service sector".

Services can usefully be divided into two groups according to whether or not they are directly linked to the production of goods. "Directly-linked" services are those which goods producers have in the past provided for themselves within their own establishments, but which are increasingly being contracted out to specialist producers who are classified in the services sector. Data available to the OECD are not sufficiently detailed to distinguish accurately between services directly linked to goods production and the remainder which are here termed "free standing" services, but an approximate breakdown suggests that "directly linked" services account for 25 per cent of total value added, compared with about 20 per cent for "free-standing" services.

In the light of these observations, claims that what have hitherto been regarded as industrialised countries have now become "service economies" need to be treated with some scepticism. In the first place the definition of services used to support this claim seems unacceptably broad because it includes government activities which are qualitatively different from private business services. More important perhaps is the fact that many services such as trade and freight transport exist only because goods are being produced. Value added in goods production plus directly related services account on average for more than two thirds of GDP.

In appraising growth of real value added in service activities it is important to bear in mind that price and quantity measures are in general of lower quality than corresponding measures for the goods producing sector. Lack of detailed information on inputs makes it difficult to produce reliable estimates of real value added using double-deflation; changes in the quality of service output are not adequately reflected by many of the output indicators in common use; for services whose output is difficult to define – notably those produced by government – real output growth is usually equated to labour input growth with no attempt to measure changes in labour productivity. These various problems will all tend to lead to

understatement of the real value added of service activities, and of total GDP of which they form a large part.

Service activities where real growth has been particularly high during the last two decades include **communications, recreational and cultural services, financial institutions, real estate except dwellings, and business services**. On the other hand real growth rates have generally been below those for GDP in **personal and household services, insurance, and restaurants and hotels**. Growth rates for wholesale **and retail trade** and **transport** have mostly been in line with growth rates in the goods industries.

The service sector is the main source of employment, accounting for about 60 per cent of employment in the sixteen countries for which data are available. Employment in market services, however, is about equal to employment in the goods producing sector and about half of the employment in market services – equal to 20 per cent of total employment – is directly linked to the production of goods. Thus goods production directly and indirectly employs around 60 per cent of the working population in the OECD area.

Employment in almost all service activities – market and non-market alike – has been growing more rapidly than in the economy as a whole, while in all goods producing activities, except for **utilities**, employment growth has been below average. **Financial, health, recreational** and especially **business services**, have recorded particularly rapid growth in employment, although their share in total employment is still very low in most countries.

The ratios of the value added and employment shares provide a measure of labour productivity in a given activity relative to overall labour productivity. There is considerable variation between activities depending on the relative importance of non-labour inputs. Mining, utilities, and financial services have very high ratios of value added to employment, while the ratios for most services are close to the national average. There is somewhat less variation between activities in the **growth** of relative labour productivity, measured here as the ratio of the standardized growth of real value added to that of employment.

#### NOTE

1. The distinction between goods-related and free-standing services is similar to the Marxist's distinction between, respectively, material and non-material services. There is, however, an important difference in that material services exclude financial and most business services. In their book *The New Service Economy* (Frances Pinter, London, 1983) Gershuny and Miles classify services into producer and consumer services. This is again a similar distinction to the one made in this paper but they include all government activities in producer services.

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