

Service Industries and Competitiveness: Some International Comparisons of Performance (A progress report)

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Abstract

There is an increasing demand from economic policy makers for analysis of the performance of service industries. This paper is a progress report on the preliminary development of an analytical database of competitiveness indicators to cover services. The implementation of the European Structural Business Statistics Regulation and of the IMF's 5th edition of the Balance of Payments Manual and other developments have already started to improve data quality and availability. The selected indicators of performance are GDP per head, productivity and trade performance and some comparative analysis of comparative is made. Bilateral comparisons are used to validate reported trends in national trade performance. The proposed variables of the database are listed.

Keywords: Services, database, competitiveness, productivity, trade

This paper is a personal contribution to the work of the Voorburg Group based on the author's experience of the data needs on services of the Department of Trade and Industry. Any views expressed herein are the author's responsibility.

1. Introduction

The growing importance of the service sector in most developed economies is well documented. It presents economic policy makers with new problems of understanding, not only because it is less well measured than manufacturing, but it also has a different set of dynamics. There is an increasing need for analysis.

In response to this perceived need, at the 12th meeting of the Voorburg Group in Copenhagen, DTI and Eurostat presented papers proposing the development of an international database of competitiveness indicators to cover service sector activities, which would complement existing databases that cover manufacturing industry. This would allow a more integrated view of economic activity as well as permitting comparative analysis of particular service activities e.g. the fast changing business services area. The feasibility of the database depended heavily on two developments:

i) the implementation of the European Structural Business Statistics Regulation, which would on the European scale provide much more comparable annual output and employment data by industry;

ii) improvements in international trade in services data stemming from the implementation of the standards set out in the 5th edition IMF's Balance of Payments Manual (BPM5) for international trade in services and the increasing focus on geographical trade in services data encouraged by international trade agreements such as the General Agreement on Trade in Services (GATS);

Data relating to i) are as yet unpublished but first results are expected this autumn. Following a reorganisation of Eurostat's Business Statistics Directorate earlier this year its short term priorities are being reviewed.

Data relating to ii) are becoming increasingly available and these are investigated to provide some initial analyses related to comparative national performance.

This paper is a progress report on work to realise the database. It reflects some work done in DTI to try to assess the comparative performance of national service industries, the quality of available data and draws some tentative conclusions. It also describes some useful developments in ONS and lists the core variables for the proposed database.

2. The main measures of performance

A simple and fundamental measure of economic performance is comparative GDP per head, which shows the wealth generated within each economy adjusted for its population and price levels. While this refers to the whole economy it provides a reference point and context for service sector comparisons.

A second and rather more complex measure is productivity, which provides an indication of the efficiency with which inputs are used to create wealth. Ideally this should be total factor productivity, but because of considerable data problems a simpler partial measure, that of labour productivity, is more commonly relied upon.

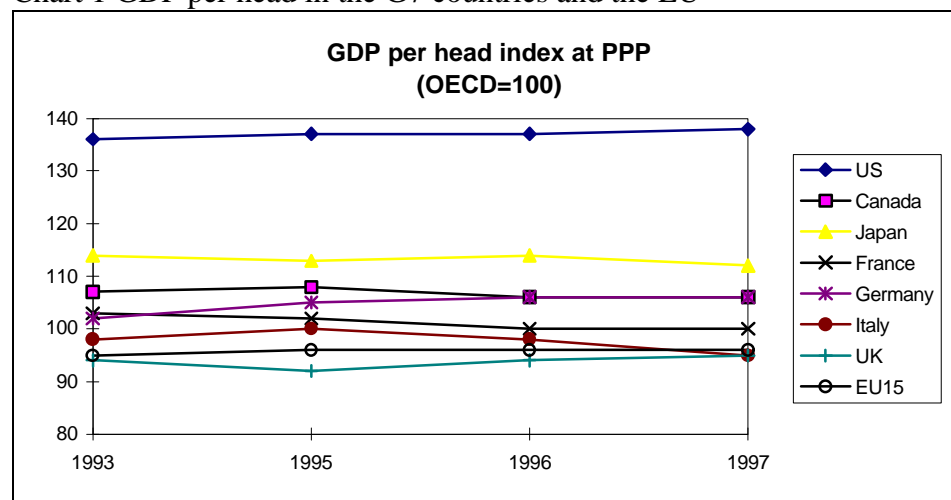
Labour productivity is essentially a ratio of output against labour input, which can in principle be broken down by industry.

The third main measure of economic performance relates to international trade performance either in the form of relative share of world service exports, the relative share of particular countries' imports or cover ratios i.e. exports divided by imports.

3. GDP per head

GDP per head comparisons are calculated and published annually by the OECD. They show the UK's GDP per head at about 5% or so below the OECD average but close to the EU average. Comparisons must be viewed as approximate, because of the difficulty in producing Purchasing Power Parities (PPPs). Indeed the 1997 estimates are founded on extrapolated PPPs benchmarked in earlier years, see chart 1 and tables in Annex A.

Chart 1 GDP per head in the G7 countries and the EU



4. Services productivity

In the service sector productivity measurement and comparisons are problematic for a variety of practical and conceptual reasons. Measurements of labour and output are not always well matched. Comparisons in real terms and between countries depend on the existence of appropriate price data. Countries have historically collected data on service industries in a much less standard way than is the case for manufacturing. Coverage of service industries has been idiosyncratic and the classifications used for data collection more varied than is the case in manufacturing. The measurement of prices of services to make comparisons over time and between countries is complicated when the services are of a non-standard nature and there is the difficulty of assessing quality. Furthermore interpretation of labour productivity measures can be controversial as they provide only a partial picture, giving no indication of capital intensity. However they do provide a useful indicator of wealth produced for a given

labour input. Trends overtime can also indicate the developing capacity for wealth creation.

Currently neither the UK or any international organisation produces any official service productivity series. The Office for National Statistics is developing measures of productivity levels by industry and a broadly based index of productivity per head and per hour for market services. The potential for international comparisons of productivity levels will be much improved when new Eurostat data reported under the Structural Business Statistics Regulation are published. At the time of writing this is not the case and consequently only limited comparisons have been made. Most of these stem from special studies some of which have been carried out by academics, consultants and OECD analysts.

In the UK, ONS have merged the short-term output and employment inquiries and plan to do the same for annual structural output and employment inquiries, including services, beginning with the 1998 inquiry. These developments should provide a major boost to the provision of good quality productivity data for both UK manufacturing and services.

A wide range of productivity indicators for the UK will eventually become feasible including distributions by industry, by region and by size of enterprise. This is a complex area and depends on robust matching output and employment measures and, in order to compare movements over time or levels between countries, appropriate service sector price and hours worked data.

ONS are aiming to publish in the first instance value added per head by industry and constant price productivity per head for market services as a whole. Later on hours worked data should become available thus permitting productivity per hour estimates.

4.1 *International Comparisons of Service Sector Productivity Levels*

Given the shortcomings of official services data, a number of special service sector productivity studies have been carried out in recent years (using differing methodologies, measures of productivity and definitions of the service sector). As such, it is difficult to compare their results directly. Two such studies are summarised here.

The National Institute of Economic and Social Research (NIESR)¹ provided a fairly recent and wide ranging study examining relative labour productivity in services across countries, using National Accounts data, value added per hour and in certain sectors such as transport physical measures. It showed that in market services (defined as Distribution, Hotels and Catering, Transport and Communications and Finance, Insurance and Real Estate) as a whole, productivity in France, Germany and the US was 30-40 percent higher than in the UK (Table 1).

¹ Oulton, O'Mahony and Vass "Productivity in Market Services: International Comparisons" (1996) & "Labour Productivity in Transport and Communications" (1997)

The UK's productivity gap for market services was larger than for manufacturing compared to France and Germany, but smaller compared to the US in 1993. Since 1979 the UK's position in market services has improved relative to France and the US but deteriorated relative to Germany. In manufacturing our relative position improved in all cases.

At a disaggregated level, the UK's productivity is higher relative to the other countries in very few sectors. One of the UK's area of strength is its airline industry. The labour productivity of the UK airline industry is 25-40 per cent higher than in Germany, France and the US.

Although the study is a good attempt at examining relative labour productivity in the countries concerned, data available in this area are not very reliable historically. Furthermore, service quality is not adequately captured in this measure of productivity. Some questions remain about the international comparability of employment data.

Table 1

Comparative Labour Productivity by Service Sector in 1993: Value added per hour worked, UK=100 adjusted by PPP

	US/UK	Germany/UK	France/UK
Distribution, Hotels and Catering	151.6	113.2	149.4
Wholesale and Retail Trade	140.9	113.6	139.7
Hotels and Catering	197.1	98.4	187.6
Transport and Communications	165.7	102.4	133.4
Transport	125.2	112.1	139.4
Communications	244.3	84.3	114.5
Finance, Insurance and Real Estate	121.7	153.6	126.3
Banking and Finance	108.8	108.3	118.9
Insurance	89.9	116.4	57.1
Real Estate and Business Services	130.8	184.8	143.9
All Market Services (avg. of above)	137.8	133.5	136.0
Manufacturing	168.3	119.2	116.5
All Industries and Services	122.7	124.3	122.5

Source: National Institute of Economic and Social Research 1996

A paper by Dirk Pilat² has estimated labour productivity levels in OECD countries for manufacturing and selected service sectors. Amongst service sectors he examined distribution, airlines, telecommunications sector, postal services and railways. The study finds that:

- While it is roughly on par with the Japan, the UK has low productivity levels relative to the G7 in distribution. Productivity is measured as Distribution GDP per person and retail sales per employee.
- The UK airline industry is the most cost efficient compared to the G7. Cost efficiency is measured in terms of operating expense per available tonne kilometre.

² Dirk Pilat (1996) - Labour productivity levels in OECD countries: estimates for manufacturing and selected service sectors; OECD

- Productivity in the telecommunications industry is measured in revenue per employee and mainlines per inhabitant. The UK does badly when compared to US, Japan, Italy and Canada. However, it is on par with France and performs better than Germany.

Physical measures of output have been used for the postal services and railways. Average technical efficiency³ is measured for the 1975-88 and 1986-88 respectively. The UK compares favourably with respect to the G7 countries for which statistics are available.

The broad conclusion emerging from these studies is that the UK lags behind the US, Germany and France in service sector productivity. Air transport stands out as one of the UK's strengths. The work by National Institute of Economic and Social Research found that the UK's productivity gap for market services was larger than for manufacturing in 1993 compared to France and Germany, but smaller compared to the US. Outstanding questions of data quality will require further investigation.

5. Trade performance

5.1 Data availability and quality

International trade in services data are compiled by the IMF and world estimates for service credits (exports) go back to 1975. Balance of payments transactions for services are less easy to link to actual service provision than is the case for goods.

The intangible nature of the transactions has not helped the statisticians cause, neither has the often fine distinction between some goods and services e.g. with merchandising, software, training or freight insurance. In the case of some financial services they may be difficult to disentangle from capital transactions. Countries have developed unique national methods for assembling the data. To be very simplistic, the English speaking countries have tended to rely more on statistical surveys and the others have relied more on central banks' administrative systems. Even so within both parts of this dichotomy there has been and remains considerable variation in data collection methods. To compound the picture methods of collection have changed considerably over time.

The IMF have since the fourth edition of their Balance of Payments Manual in 1977 requested a six category breakdown of services transactions:

- freight shipment
- passenger services
- other transportation
- travel

³ Average technical efficiency is defined as outputs relative to inputs. For postal services, output is the sum of the number of letters delivered and the financial operations performed. Inputs include employees, number of motor vehicles and number of postal offices used. For railways output is the combination of gross hauled tonne-kilometres by freight trains and gross hauled tonne-kilometres by passenger trains.

other private services
other official services

The wide variety of national collection methods have meant that the quality, coverage and comparability of countries' returns have been uncertain.

Policymakers' need for better quality and more detailed data has increased with the advent of international agreements on trade in services such as GATS and, within Europe, the Single Market in services together with globalisation of service provision and rapidly developing information and communications technology.

The IMF published a fifth edition of the Balance of Payments Manual in 1993. This brought international trade in services measurement in line with the UN's SNA and at the same time requested data broken down in more detail by type of service. It also explained the concepts behind the categories more precisely.

Member states of the IMF are now in the process of implementing changes to data collection and reporting to meet the BPM5 requirements. The categories of service required by the BPM5 are now:

- sea transport split by passenger, freight and other;
- air transport ditto;
- other transport ditto;
- travel split by business and personal;
- communications services;
- construction services;
- insurance;
- financial;
- computer & information;
- royalties & licence fees;
- other business services;
- personal, cultural & recreational;
- government services not elsewhere included.

This makes 20 categories in all and the list has been extended by OECD and Eurostat to over 50 categories (see annex C).

While the harmonisation process is far from complete, important progress has already been made.

Independently Eurostat have been seeking greater harmonisation of balance of payments reporting to inform the monetary policy of the planned The European Central Bank following EMU on 1 January 1999.

Geographical breakdowns of trade in services data are published by at least seven countries at various levels of detail. These include the US, Canada, Japan, Australia, France, Germany and the UK. Sweden and Finland provide a breakdown on request. Eurostat also publishes a limited geographical breakdown of the EU's trade in services. Bilateral comparisons of trade, where they are possible, are a powerful validation tool and indicate considerable asymmetries in many cases. For example if

country A reports to IMF a strong increase in its service exports, one might hope to find a reflection of this in other countries' reported service imports from country A. The quality improvements outlined above have reduced some of the worst asymmetries. It is to be hoped that as the number of countries reporting according to BPM5 and reporting geographical breakdowns increases, further work to look at the reasons for the asymmetries will be undertaken.

5.2 Trends in Market Share in Overseas Trade in Services

This section looks at various IMF and national sources to try to uncover the relative performance of G7 countries in market share of world service exports and major countries' service imports, where available. Due to changes in the measurement of services overtime and national reporting differences, all conclusions must be taken as tentative, however I have tried to validate conclusions as far as possible by checking nations' reported performances against how other NSI's perceive them.

5.2.1 Summary of results

5.2.1.1 Cover ratios

Among the G7 countries three nations have an international trade in services cover ratio well in excess of 1, i.e. they are net exporters of services. In 1996 the cover ratios were US 1.54, France 1.23 and UK 1.16. Three countries Canada (0.8), Germany (0.66) and Japan (0.52) are net importers of services. Italy is close to balance in its international services trade with a ratio of 1.04. Of these countries the US cover ratio appears to have strongly increased since 1986 and Canada's has slightly increased. Those of the other G7 countries have all declined.

5.2.1.2 Long run trends in market share 1975 -1996

The only two relevant sources of long run data, of which I am aware, are the IMF's Balance of Payments Statistics Yearbook, which goes back to 1975 and Statistics Canada who have some geographic detail on trade in services going back to the sixties. Both sources agree that the UK and the rest of the EU have lost market share in services since 1975, while the US has gained.

The IMF data show all of the G7, except the US, losing world market share in services exports, which has gained an extra 4% to get over 17.6% of the world market in 1996. The UK's world share in the period declined from 9.7% to 6.0%, although there has been a small recovery since 1993. During the period 1975-1996, the UK had the worst decline in world share of service exports in the G7, but only marginally worse than Germany. It is believed that the decline in the once dominant UK merchant fleet and Germany's loss of the services income from hosting large numbers of NATO forces were contributory factors.

The UK's share of Canada's service imports declined from 11.7% to 6.8% over the period with a small recovery since 1992. Again the US increased market share from 55% to 62% over the period. Japan's share has fallen from 3 to 2.5%.

5.2.1.3 Medium term trends 1986-1996

In looking at the last ten years an extra data source is available namely the US's 'Survey of Current Business'.

The IMF data indicate a decline in the UK, French and German share of world service exports and in the UK and rest of EU share of Canada's service imports in the period 1986-1996. All the non-European G7 countries increased world share over the period with the US and Japan increasing their share of Canadian imports.

In contrast, the US identify the UK as their largest supplier of service imports over the period and with a slightly increased market share. France also increased their share of US service imports. However Japan and Italy lost share.

5.2.1.4 Recent trends 1993-1996

For the latest available three year period 1993-1996 another 4 national data sources are available in addition to those already cited. The percentage changes in service import shares by reporting country and partner country are summarised in table 2 below. According to the IMF, the UK share of world service exports rose from 5.8% to 6.0% between 1993 and 1996, the only G7 country to register a rise in share. There is little to indicate that this is more than a cyclical recovery rather than a reversal of the long term trend. National data from Canada, Germany, Sweden and Australia show a corroborating rise in the UK shares of their service imports, while the US and Japanese data indicate a slight fall in UK share. France appears to have done worst of the G7 over the period with declines in France's share being reported by the IMF and all the other NSIs except Canada, which does not publish separately identified service imports from France. However the other NSI data suggest that the fall described by the IMF for the French share is too sharp and it may just be the result of methodological changes/improvements by the Bank of France. Short-term trends in trade performance may also be distorted by currency fluctuations and the stage of the business cycle.

5.2.1.5 Current Levels of service exports

The IMF puts the UK as the fourth largest service exporter since 1989 after the US, France and Germany, but every one of the countries reporting geographical data has the UK as a more important supplier of services than France and Germany. There is a theory that the UK as an important financial, insurance and commodity and ship broking centre is credited with payments for services provided by residents of other nations. This inflates the UK's position in shares of countries' service imports. I find this at least a plausible working hypothesis. It is one that is hard to test given a lack of information on the UK's financial and associated service imports. For the moment then we might reserve judgement on the relative size of UK, France and Germany's service exports and say that they are approximately the same value.

table 2 Change in international trade in services market share by country and reporting institution 1993-1996

Reporting institutions and countries									
G7 Nations	Change in % share of world service exports IMF	Change in % share of selected countries' service imports						Actual % shares in 1996	
		US	Japan	Canada	Germany	UK	Australia*	World service exports	Weighted average % share of six countries service imports
US	-0.7	-	-2.5	-0.9	-0.4	+0.6	-1.5	17.6	17.8
UK	+0.2	-0.2	-0.9	+0.5	+0.7	-	+0.4	6.0	8.5
Canada	-0.1	+0.5	NA	-	0.0	-0.3	+0.5	2.1	
Japan	-0.2	-1.3	-	+0.2	-0.2	+0.4	+0.6	5.1	3.5
France	-1.9	0.0	-0.3	NA	-0.4	-0.5	-0.0	6.7	4.8
Germany	0.0	-0.1	+0.2	NA	-	+1.0	0.0	6.4	4.9
Italy	-0.1	-0.2	NA	NA	+0.6	+0.3	0.0	5.3	
+ indicates gain in % share									
- indicates decline in % share									
* Australia reports on financial years									

More details of market shares of services trade are attached at annex B.

5.2.1.6 Shares in international services trade by component

In principle and increasingly in practice one can analyse the performance of countries in detailed components according to the IMF and OECD/Eurostat lists in Annex C. I have chosen royalty and licence fee payments to illustrate the way in which the geographical breakdowns that some countries are providing can confirm or raise questions about the quality of the IMF data.

Not every country reports royalty and licence fee payments to the IMF. I have selected 21 of the more important countries that do report. They show world cross-border royalty & licence fee payments exceeding \$50 billion in 1996. It is clear that the US received about half of these. Japan and the UK are second and third with about 10% each. Germany, Netherlands and France take the next 3 places - see table 3.

Four countries publish a geographical breakdown of these payments i.e. the US, Japan, France and the UK. A weighted average of percentage shares of royalty debits is calculated as follows. The percentage of royalty debits allocated by each of these to each partner country is weighted by the IMF debits reported by each of the four. These weighted average import shares largely corroborate the IMF rankings. Only the

UK and Japan swap places in the top six. This could be due to bias in the self-selection of reporting countries or due to different coverage of reporting to the IMF. It is now believed, for example, that the UK underestimated its royalty earnings by about 20% when it reported to the IMF the 1996 data. The discrepancy in figures (56.6 v 35.2) for the United States is mainly due to the US being a large proportion of the four countries but a much smaller proportion of the 21 countries.

table 3 Reported shares of international payments for royalties and licence fees

	US\$m	1996			
	IMF royalty & licence fee credits	IMF royalty & licence fee credits	% of total reported royalty & licence fee credits	% of total reported royalty & licence fee debits	Weighted average* % share of royalty & licence fee debits in 4 'geographical' reporting countries wa_{ji}
US	29970	7320	56.6	15.6	35.2
Japan	6680	9830	12.6	20.9	6.0
UK	4730	3630	8.9	7.7	11.1
Germany	3320	5870	6.3	12.5	5.4
Netherlands	2361	2852	4.5	6.1	4.5
France	1860	2627	3.5	5.6	3.6
Sweden	997	1006	1.9	2.1	
Norway	729	942	1.4	2.0	
Belg-Lux	683	1197	1.3	2.5	
Italy	381	1027	0.7	2.2	
Australia	251	1089	0.5	2.3	
Spain	238	1424	0.4	3.0	
Korea	185	2431	0.3	5.2	
Austria	181	691	0.3	1.5	
Mexico	122	360	0.2	0.8	
Ireland	94	3434**	0.2	7.3**	
S Africa	67	250	0.1	0.5	
Finland	66	465	0.1	1.0	
Czech R	43	98	0.1	0.2	
Portugal	26	262	0.0	0.6	
Argentina	6	221	0.0	0.5	
'World' total	52,990	47,026	100.0	100.0	

Source: IMF, ONS, Banque de France, Bank of Japan, US BEA, DTI

* Weighted average $wa_j = \sum_{i=1}^n ((D_i s_{ij}) / D_i)$ where $n=4$ (US, F, J, UK) D_i are royalty debits declared to the IMF by country i and s_{ij} = % share of royalty debits in country i credited to country j

**The reported Irish royalty debits appear unusually large.

5.3 Foreign Affiliate Trade in Services (FATS)

As many services cannot be easily traded across borders and need to be delivered locally, the General Agreement on Trade in Services regards trade in services in the wide sense including cross-border trade, local consumption by foreign residents and local delivery of services by foreign owned companies. This last component usually described as foreign affiliate trade in services is less well measured than the first two and attempts to do so run into problems of the complexity of organisation of some multi-national enterprises. As part of a Eurostat initiative on the effects of globalisation, nine Member States took part in a pilot study of the activity of foreign affiliated enterprises. Initial results were published in June 1998.

This indicated that the foreign influence in service sector employment is already significant but more so in business services (NACE 71-74) than retail & motor trades (NACE 52) and hotels & restaurants (NACE 55).

In NACE 74.11 to 74.14, legal and accounting activities, tax consultancy, market research and management consultancy - the employment share of foreign enterprises was over 20% in the Member States surveyed see table 4. Because of the variable response to the survey results must be viewed with suitable caution.

Further statistical development is needed in this area to inform trade policy, the monitoring of GATS agreements and to inform competitiveness analysis.

Table 4 EU service economy - employment by foreign owned enterprises (%)

Sector	Countries covered	%
Legal & accounting activities, tax consultancy, market research, management consultancy NACE 74.11-14	DK, NL, S, FIN, UK	21
Labour recruitment activities NACE 74.5	NL, FIN, UK	20
Computer & related activities NACE 72	DK, E, NL, FIN, S, UK	18
Renting NACE 71	DK, NL, S, UK	17
Wholesale trade NACE 51	DK, FIN, F, IRE, I, NL, S, UK	16
Advertising NACE 74.4	DK, NL, FIN, S, UK	15
Research & development NACE 73	S, UK	13
Auxiliary transport activities, travel agencies NACE 63	NL, FIN, S, UK	12
Security services & industrial cleaning NACE 74.6-7	NL, S, UK	11
Architectural activities & technical testing NACE 74.2-3	DK, NL, S, UK	9
Water transport NACE 61	DK, NL, S	9
Retail & motor trade NACE 50 & 52	E, F, IRE, I, NL, S, UK	6
Road freight transport NACE 60.24	NL, S, UK	5
Hotels & restaurants NACE 55	DK, E, NL, S, UK	5
Miscellaneous business activities NACE 74.8	DK, NL, S, UK	4

Source Eurostat, *International ownership in trade in service activities, First findings of a study on foreign affiliates.*

Notes: Due to use of different reference years and country groupings and the combining of various concepts etc, these percentages should be taken only as a rough indication.

Foreign owned enterprises are those where ownership or control is outside the country where the enterprise's activity takes place.

6. Future Work

The construction of the competitiveness indicators database remains to be done and this could follow on the publication of the European structural data. DTI would support and, if appropriate, assist such a development whether by Eurostat or OECD.

The construction of a fairly small scale data base in DTI along these lines will be investigated. The database would need to be in two parts i) for trade and ii) industry since data structures and classifications for industry and balance of payments sit badly together. The variables would include the following:

6.1 *trade variables*

1i)International trade in services by country

Variables: type of service (IMF/OECD/Eurostat list); exports, imports, balance, cover ratio, % of world total;

other variables to include FDI activity - outward and inward, by industry and by partner country

1ii)Bilateral trade in services data by reporting country

Variables : partner country; type of service from IMF/OECD/Eurostat list; exports, imports, % share of service imports

6.2 *Industry variables*

The industry database would draw mainly on structural data but with supplements from the short term indicators. The basic variables should include:

country; industryISIC;turnover (annual and quarterly); value-added at basic prices; value-added at market prices; % contribution to GDP, numbers employed (annual and quarterly); employees; hours worked per year; personnel costs; gross investment; foreign ownership.

Derived variables might include:

Value-added at basic prices: number employed

Value-added at basic prices: employees

Value-added at basic prices: hours worked

turnover: number employed;

personnel costs: turnover;

gross investment in tangible goods: turnover;

gross operating rate;

% of industry by turnover, value-added and employment under foreign ownership;

Supplementary variables might include education level of work force; working patterns e.g. part-time/temporary; earnings; capital expenditure by type; available data on intangible assets and investment etc.

There would also be an interest in some sector specific variables given the heterogeneity of services e.g. insurance (cost ratios, claims ratios, investment, liquidity ratios); transport (physical measures). There is also an interest in input-output analysis to investigate the connection between different types of services and manufacturing, but that is beyond the scope of this project.

It is anticipated that the database would start with a relatively few countries, who have data, but would aim eventually to have the widest possible coverage.

7. Conclusions

The growth in the service sector including international trade in services presents economic policy makers with new problems of understanding. There is an increasing need for analysis.

This need and the increase in available data, with corresponding improvements in quality, make the work to extend competitiveness databases to include services timely.

For the DTI the fundamental competitiveness indicators are GDP per head, productivity and trade performance with selected explanatory variables.

The currently available data appear to show the UK lagging 30% behind the US, and slightly behind France and Germany in the first measure; but 25-30% behind all three in value-added per hour worked in market services. The UK is very close to France and Germany in world share of services exports but well behind the US. Geographical trade data, where they exist, provide a powerful validation tool for changes in countries' own estimates of their services trade. We have then a starting point for probing the data to look at quality and, where this appears sufficient, trends and detail.

It is proposed that after the publication of the first Eurostat structural business statistics data collected under the Regulation, work should move ahead to try to realise an initially limited database including the variables listed above and to undertake some further analysis, which would be published.

Comments on the approach described above are welcome.

Annex A

GDP per head data

Table A1 G7 and EU GDP

	GDP at current prices and exchange rates			
	\$bn	\$bn	\$bn	\$bn
	1993	1995	1996	1997
US	6,337	7,030	7,388	7,819
Canada	547	560	579	599
Japan	4,275	5,137	4,595	4,223
France	1,250	1,535	1,537	1,394
Germany	1,914	2,414	2,354	2,115
Italy	985	1,087	1,214	1,146
UK	943	1,107	1,153	1,278
EU15	6,925	8,435	8,601	8,093

Source:OECD

Table A2 G7 and EU Comparative GDP per head

GDP per head indices at purchasing power parity (OECD =100)				
	1993	1995	1996	1997
US	136	137	137	138
Canada	107	108	106	106
Japan	114	113	114	112
France	103	102	100	100
Germany	102	105	106	106
Italy	98	100	98	95
UK	94	92	94	95
EU15	95	96	96	96

Source:OECD

Annex B

Trade in Services data

table B1 World and G7 service exports

	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
	World	US	Canada	Japan	France	Germany	Italy	UK	G7 total
1975	174,448	23,361	4,212	9,969	14,419	18,067	9,392	16,988	96,407
1976	190,608	27,604	4,808	11,106	14,888	19,846	9,543	17,891	105,688
1977	221,900	31,266	4,826	12,726	18,372	22,533	12,272	20,220	122,214
1978	268,137	35,682	5,303	13,659	24,767	28,683	15,435	23,613	147,143
1979	318,941	37,778	6,353	16,163	28,434	32,946	20,057	29,689	171,420
1980	412,885	45,709	7,394	20,384	44,368	39,340	22,904	36,493	216,592
1981	421,655	53,111	8,356	24,063	42,750	37,686	19,860	33,916	219,742
1982	410,089	54,778	7,835	22,777	37,863	38,351	20,670	30,576	212,850
1983	404,866	61,090	8,239	21,990	36,299	34,428	20,809	30,076	212,931
1984	410,983	66,500	8,639	23,380	35,991	33,524	20,904	29,382	218,320
1985	424,649	67,940	9,138	23,400	37,728	35,082	22,150	32,262	227,700
1986	497,359	79,630	10,394	24,611	45,900	45,654	26,749	37,894	270,832
1987	555,357	87,787	11,651	28,850	50,886	51,506	28,278	42,964	301,922
1988	616,838	98,039	14,101	35,030	54,371	51,934	29,030	45,807	328,312
1989	672,830	112,896	15,466	39,700	60,227	55,530	31,020	45,797	360,636
1990	866,000	147,352	19,209	41,384	76,457	66,574	49,799	56,234	457,009
1991	898,400	163,669	20,368	44,837	80,100	68,564	48,125	54,318	479,981
1992	989,000	177,152	20,785	49,069	91,765	68,960	59,606	62,168	529,505
1993	1,008,300	184,680	22,078	53,219	86,377	64,637	54,721	58,614	524,326
1994	1,103,500	195,046	23,838	58,297	90,390	65,999	56,841	64,302	554,713
1995	1,257,200	216,712	26,212	65,274	97,770	81,498	65,736	73,520	626,722
1996	1,330,700	234,687	28,512	67,724	88,891	84,639	69,910	79,389	653,752
Average annual % growth rate 1975-1996	10.16	11.61	9.53	9.55	9.05	7.63	10.03	7.62	9.54
Average annual % growth rate 1986-1996	10.34	11.41	10.62	10.65	6.83	6.37	10.08	7.68	9.21
Average annual % growth rate 1993-1996	9.69	8.32	8.90	8.37	0.96	9.40	8.51	10.64	7.63
Source IMF									

table B2 G7 countries' % share of world service exports

	US	Canada	Japan	France	Germany	Italy	UK	total G7
1975	13.4	2.4	5.7	8.3	10.4	5.4	9.7	55.3
1976	14.5	2.5	5.8	7.8	10.4	5.0	9.4	55.4
1977	14.1	2.2	5.7	8.3	10.2	5.5	9.1	55.1
1978	13.3	2.0	5.1	9.2	10.7	5.8	8.8	54.9
1979	11.8	2.0	5.1	8.9	10.3	6.3	9.3	53.7
1980	11.1	1.8	4.9	10.7	9.5	5.5	8.8	52.5
1981	12.6	2.0	5.7	10.1	8.9	4.7	8.0	52.1
1982	13.4	1.9	5.6	9.2	9.4	5.0	7.5	51.9
1983	15.1	2.0	5.4	9.0	8.5	5.1	7.4	52.6
1984	16.2	2.1	5.7	8.8	8.2	5.1	7.1	53.1
1985	16.0	2.2	5.5	8.9	8.3	5.2	7.6	53.6
1986	16.0	2.1	4.9	9.2	9.2	5.4	7.6	54.5
1987	15.8	2.1	5.2	9.2	9.3	5.1	7.7	54.4
1988	17.0	2.2	5.6	8.3	7.2	4.7	7.3	52.3
1989	17.7	2.1	5.8	8.3	7.2	4.4	6.7	52.3
1990	17.0	2.2	4.8	8.8	7.7	5.8	6.5	52.8
1991	18.2	2.3	5.0	8.9	7.6	5.4	6.0	53.4
1992	17.9	2.1	5.0	9.3	7.0	6.0	6.3	53.5
1993	18.3	2.2	5.3	8.6	6.4	5.4	5.8	52.0
1994	17.7	2.2	5.3	8.2	6.0	5.2	5.8	50.3
1995	17.2	2.1	5.2	7.8	6.5	5.2	5.8	49.9
1996	17.6	2.1	5.1	6.7	6.4	5.3	6.0	49.1
1997*	17.8	2.3	5.3	6.3	5.6	5.5	6.5	49.3

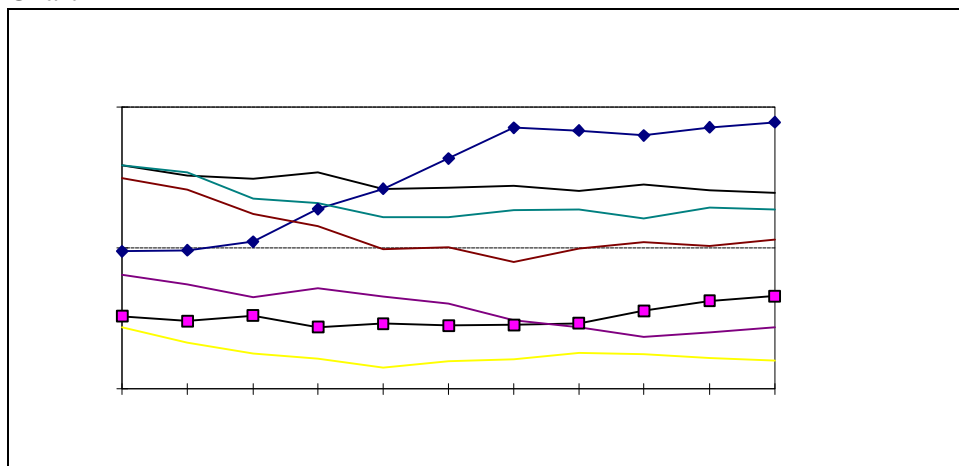
Source 1975-1996 IMF, 1997 WTO preliminary estimates

table B3 G7 cover ratios i.e. service exports/service imports 1986-1996

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
US	0.99	0.99	1.03	1.17	1.25	1.38	1.51	1.50	1.48	1.51	1.54
Canada	0.71	0.69	0.71	0.66	0.68	0.67	0.67	0.68	0.73	0.78	0.80
Japan	0.66	0.60	0.55	0.53	0.49	0.52	0.53	0.55	0.55	0.53	0.52
France	1.35	1.31	1.30	1.32	1.25	1.26	1.26	1.24	1.27	1.25	1.23
Germany	0.89	0.84	0.79	0.83	0.79	0.76	0.69	0.66	0.62	0.64	0.66
Italy	1.30	1.25	1.15	1.09	0.99	1.00	0.94	1.00	1.03	1.01	1.04
UK	1.35	1.32	1.21	1.19	1.13	1.13	1.16	1.16	1.13	1.17	1.16

Source:
IMF

Chart B1



1979	57.2	9.6	10.4	2.7	5.6	14.6	33.2	100.0
1980	56.9	8.9	11.5	2.4	5.1	15.1	34.2	100.0
1981	58.0	9.0	12.0	2.6	4.4	14.0	33.0	100.0
1982	60.3	8.4	11.2	2.5	4.2	13.4	31.3	100.0
1983	61.2	9.1	10.8	2.6	4.1	12.2	29.7	100.0
1984	61.0	9.1	10.9	2.9	4.1	12.0	30.0	100.0
1985	59.7	10.5	11.6	2.5	4.4	11.4	29.9	100.0
1986	62.0	8.4	10.8	2.6	4.2	12.0	29.6	100.0
1987	61.2	7.7	11.2	2.5	4.3	13.1	31.1	100.0
1988	61.4	7.5	11.2	2.5	4.2	13.2	31.2	100.0
1989	62.5	6.6	10.9	2.3	3.9	13.7	30.8	100.0
1990	63.4	6.3	10.9	2.0	4.0	13.4	30.3	100.0
1991	66.0	6.4	9.2	1.9	3.3	13.2	27.6	100.0
1992	65.2	5.9	9.7	2.4	3.3	13.5	28.9	100.0
1993	63.1	6.3	9.4	2.3	3.3	15.6	30.6	100.0
1994	60.9	6.8	9.7	2.7	3.9	15.9	32.3	100.0
1995	61.4	6.4	10.1	2.8	4.2	15.0	32.2	100.0
1996	62.2	6.8	9.4	2.5	4.4	14.8	31.0	100.0

Source: Statistics Canada

table B6

UK imports of services 1993-1996				
	£mn	£mn	£mn	£mn
Partner country	1993	1994	1995	1996
US	6911	7193	8253	9246
Canada	691	814	767	779
Japan	712	823	920	1087
France	3201	3533	3802	3909
Germany	2888	3159	3239	4188
Italy	916	1119	1150	1304
EU 15	15018	16929	18374	19929
Rest of World	10218	11403	11407	12624
World	33550	37162	39721	43665
% share of UK imports of services 1993-1996				
	£mn	£mn	£mn	£mn
Partner country	1993	1994	1995	1996
US	20.6	19.4	20.8	21.2
Canada	2.1	2.2	1.9	1.8
Japan	2.1	2.2	2.3	2.5
France	9.5	9.5	9.6	9
Germany	8.6	8.5	8.2	9.6
Italy	2.7	3	2.9	3
EU 15	44.8	45.6	46.3	45.6
Rest of World	30.5	30.7	28.7	28.9
World	100	100	100	100

Source: ONS

table B7

G7 countries % share of Germany's service imports							
	EU 15	US	UK	France	Italy	Japan	Canada
1991	57.7	12.3	7.9	8	8.3	1.8	0.9
1992	56.8	12.1	7.8	8	7.6	1.8	0.9
1993	56.4	11.9	7.7	8.2	7.2	1.7	0.8
1994	55.9	11.7	7.6	7.7	7.4	1.7	0.8
1995	56.7	10.6	8.6	7.8	7.6	1.4	0.8

1996	55.7	11.5	8.4	7.8	7.8	1.5	0.8
1997 Q1-3	55.4	12	9	7.4	7.7	1.5	0.8
Source: Bundesbank							

table B8 G7 countries' % shares of France's service imports in 1996

	US	UK	Germany	Japan	Canada	Italy
1996	16.1	10.8	9.7	1.7	1.1	5.8
Source: Banque de France						

table B9 G7 countries % share of Australia's service imports

	US	UK	Japan	Germany	Italy	France	Canada
1991-92	14.9	15.9	7.6	3.3	2.2		1.6
1992-93	15.7	15.9	6.4	2.2	1.6	1.2	1.4
1993-94	14.3	16.5	7	2.2	1.5	1.3	1.8
1994-95	13.4	16	8.4	2.3	1.5	1.3	1.7
1995-96	14.2	16.3	7	2.2	1.6	1.2	1.9
Source: Australian Bureau of Statistics							

Annex C

IMF/BPM5 and OECD-Eurostat International Trade in Services Classifications and Codes

1. Transportation
 - 1.1. Sea Transport
 - 1.1.1. Passenger
 - 1.1.2. Freight
 - 1.1.3. Other
 - 1.2. Air transport
 - 1.2.1. Passenger
 - 1.2.2. Freight
 - 1.2.3. Other
 - 1.3. Other transport
 - 1.3.1. Passenger
 - 1.3.2. Freight
 - 1.3.3. other

Extended classification of other transport (1.3)
 - 1.4. *Space transport*
 - 1.5. *Rail transport*
 - 1.5.1. *Passenger*
 - 1.5.2. *Freight*
 - 1.5.3. *Supporting auxiliary and other services*
 - 1.6. *Road transport*
 - 1.6.1. *Passenger*
 - 1.6.2. *Freight*
 - 1.6.3. *Supporting auxiliary and other services*
 - 1.7. *Inland waterway transport*
 - 1.7.1. *Passenger*
 - 1.7.2. *Freight*
 - 1.7.3. *Supporting auxiliary and other services*
 - 1.8. *Pipeline transport*
 - 1.9. *Other supporting and auxiliary transport services*
- Memorandum items**
- Freight transportation on the basis of ex-works valuation of merchandise*
- Sea freight*

4. Construction services
 - 4.1. *Construction abroad*
 - 4.2. *Construction in the compiling economy*
5. Insurance services
 - 5.1. *Life insurance and pension funding*
 - 5.2. *Freight insurance*
 - 5.3. *Other direct insurance*
 - 5.4. *Reinsurance*
 - 5.5. *Auxiliary services*

Memorandum items

Gross insurance premiums

Gross insurance claims

6. Financial services
7. Computer and information services
 - 7.1. *Computer services*
 - 7.2. *Information services*
8. Royalties and license fees
9. Other business services
 - 9.1. Merchanting and other trade-related services
 - 9.1.1. Merchanting
 - 9.1.2. Other
 - 9.2. Operational leasing services
 - 9.3. Miscellaneous business, professional, and technical services
 - 9.3.1. Legal, accounting, management consulting and public relations
 - 9.3.1.1. Legal services
 - 9.3.1.2. Accounting, auditing, bookkeeping and tax consulting services
 - 9.3.1.3. Business and management consultancy and public relations services
 - 9.3.2. Advertising, market research, and public opinion polling
 - 9.3.3. Research and development
 - 9.3.4. Architectural, engineering, and other technical
 - 9.3.5. Agricultural, mining, and on-site processing
 - 9.3.5.1. Waste treatment and depollution
 - 9.3.5.2. Other
 - 9.3.6. Other
 - 9.3.7. Services between affiliated enterprises, n.i.e.

Memorandum items

Merchanting gross flows

Agricultural services

Mining services

10. Personal, cultural, and recreational services
 - 10.1. Audiovisual and related services
 - 10.2. Other personal, cultural, and recreational services
11. Government services, n.i.e.
 - 11.1. Embassies and consulates
 - 11.2. Military units and agencies
 - 11.3. Other

Entries written in italic are items that are not standard services components or supplementary sub-items in the BPM5 but are included in the OECD-EUROSTAT classification.