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Towards a Set of Competitiveness Indicators for Services

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Abstract:
There is a tension between the need for competitiveness indicators that cover services and the paucity of data on the sector. The implementation of the European Structural Business Statistics Regulation and of the IMF 5th edition of Balance of Payments Reporting Manual standards, together with other improvements to services statistics offer the prospect of considerable improvements to data availability and quality over the next two years or so. Proposals for developing a competitiveness indicators database for services to profit from these improvements are set out with selected measures of the performance of UK services that are already available.

Towards a Set of Competitiveness Indicators for Services

Keywords : Competitiveness, services, indicators, database

Introduction

1. This paper addresses the need for competitiveness indicators that cover the service sector and sets out initial proposals for developing a set of such indicators.

What is competitiveness?

2. Competitiveness has become a rather fashionable word in our fast globalising economy, but what does it mean for a nation and regional groupings such as the EU or NAFTA? The following which is based on an OECD formulation is a working definition: " Competitiveness is the ability of nations and supra-national regions to generate, while being and remaining exposed to international competition, relatively high income and employment levels"

Measuring performance and competitiveness -the outputs

3. DTI statisticians are using or seeking to develop three main measures of economic performance:

– first a whole economy measure of prosperity such as national income per head;
– second estimates of productivity of labour and capital, which show how efficiently producers are at organising their people and equipment;
– third measures of trade performance to show how national industries and products are competing in world markets and meeting foreign competition at home. (Annex 1 illustrates the availability of selected measures of services performance)

Input factors which affect competitiveness

4. There are very many factors which can influence competitiveness but some are seen to be more important than others at particular times. The key ones at present include the following:

- macro-economic stability
- education, skills & training
- investment
- innovation
- commercial framework
- science and technology
- information society
- finance
- people at work and labour market flexibility

- management

The importance of services and the paucity of data

5. Services contributed 67% of UK GDP in 1996 and 23% of exports of goods and services. These proportions are broadly similar to those in several other industrialised nations. There is a growing interest in international trade in services, which is fuelled by improved communications, globalisation, and trade liberalisation agreements such as the General Agreement on Trade in Services and the European Single Market.

6. While Eurostat, OECD and other statistical institutes have produced a wealth of data on performance in manufacturing and trade in goods and corresponding competitiveness indicators, the paucity of data on the competitiveness of services still stands out. However, a number of important improvements are in train, which within the space of 2-3 years will allow some new performance measures to be derived for service industries. Even so it will not in the medium term be possible to derive most of the measures that are available for manufacturing. Where services data are available, in many cases, quality, detail and international comparability may be less than we are used to for manufacturing. We should be candid about such problems but careful not to reject useful data out of hand for relative deficiencies.

7. Important developments include a wide-ranging programme of improvements in service sector statistics at the ONS, the implementation of the European Structural Business Statistics Regulation, the IMF's 5th edition of the Balance of Payments Manual, increased recording of trade in services by partner country to monitor GATS and increased development of services price information. Outstanding problems include the lack of internationally comparable short term indicators of services output and the need for further harmonisation in measuring the level of international trade in services. A further difficulty is the inability to match output and trade data for services in many areas.

8. It is proposed to identify a limited set of competitiveness measures for services that are timely, of reasonable quality and of known comparability. These measures should be integrated as far as possible with other measures of performance of the economy including those for manufacturing.

Possible variables for a set of competitiveness indicators for services

<u>Basic variables for services</u>

Turnover, labour costs, value-added, indices of services output, employment (persons and hours worked), international trade in services (exports & imports), foreign direct investment (FDI) - inward and outward, capital expenditure by industry, physical indicators, price indices.

<u>Derived measures of performance</u>:

Productivity growth and levels by industry,
Share of GDP by industry,
unit costs,

International trade in services performance - exports, imports, cover ratio, total goods & services cover ratio,
share of world, EU, OECD service exports overall and by product,
share of and individual country's (and groups of countries') service imports overall and by product, FDI inward and outward.

<u>other possible derived measures from the Eurostat Competitiveness Database</u>

trade balance as share of value-added,
type of service cover ratio relative to services cover ratio,
incremental contribution of an industry (increase in value-added by industry in latest 3 years)/(increase in GDP in latest three years),
gross operating rate (Value added - labour cost)/turnover index of unit labour costs relative to weighted average of competitors.

9. These variables might be supplemented by satellite variables, which are particular to certain services or on factors judged as affecting competitiveness such as the development of the information society e.g. sales of services by internet, infrastructure, education, skills, labour market flexibility, innovation, R&D etc.

Conclusion and proposals for future development

10. Eurostat have developed a wide ranging competitiveness database for the whole economy and particularly manufacturing. OECD produce their annual GDP per head table and publish quarterly indicators of trade competitiveness. It would be a significant and useful development if regular and reasonably timely indicators for services could be produced. This might initially be for a limited set of variables and for a group of countries with sufficient data. It could then be used as an encouragement for others to improve their data. It would be desirable to integrate services data with that for other sectors to provide a broad view of economic performance. DTI would be interested in assisting and cooperating in any such development.

11. Members of the Voorburg Group are invited to comment on these initial proposals from the point of view of need, suitability and practicability.

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September 1997

Annex 1

Selected service performance indicators

1. This annex illustrates the availability of selected services indicators in the UK or elsewhere relating to the performance of UK services.

% Contribution to GDP

2. Since 1992 annual estimates of contribution to GDP for 35 service industries have been produced from the ONS's input-output tables. The industry classification is at the level of legal unit (see table A1 below). The industries are made up of those firms whose principal activity is in that industry and do not relate to total production of products associated with that industry. Thus the advertising industry does not include media firms who sell advertising.

Turnover & value-added

3. ONS publishes quarterly turnover data for a wide range of private sector services at about the three digit level of SIC(92)[1]. Annual estimates of turnover, current and capital expenditure, labour costs and value-added are soon to be published at aslightly more detailed industry level.

Detailed industry breakdown of services by employees in employment

4. Employees in employment by industry are currently available from ONS, quarterly at between the 2 and 4 digit level of SIC , and at the 5 digit level for selected years. This industry classification is at a local unit level and work is going on to produce industry estimates on the same basis as output data.

[1] SIC(92) is the UK's Standard Industrial Classification and is equivalent to NACE Rev 1 to the first four digits.

table A1

% Contribution of Services to UK GDP 1992-1996 (at factor cost)

Industry	NACE Rev 1	1992	1993	1994	1995	1996
Motor vehicle distribution and repair	50	2.01	2.01	2.01	2.03	n/a
Wholesale distribution	51	4.68	4.66	4.58	4.53	n/a
Retail distribution	52	4.92	4.94	4.91	4.89	n/a
Hotels, catering, pubs etc	55	2.81	2.78	2.85	2.97	n/a
Distribution & Hotels	**50-55**	**14.43**	**14.39**	**14.34**	**14.41**	**14.48**
Railways	60.1	0.60	0.58	0.61	0.62	n/a
Other land transport	60.2,3	2.13	2.11	2.11	2.07	n/a
Water transport	61	0.17	0.17	0.18	0.19	n/a
Air transport	62	0.56	0.63	0.65	0.71	n/a
Other Transport services	63	1.81	1.81	1.84	1.86	n/a
Postal services	64.1	0.95	0.94	0.95	0.93	n/a
Telecommunications	64.2	2.22	2.21	2.11	1.98	n/a
Transport & Communications	**60-64**	**8.45**	**8.46**	**8.45**	**8.36**	**8.41**
Banking and finance	65	4.95	4.33	4.94	4.29	n/a
Insurance and pension funds	66	1.29	2.06	2.02	1.87	n/a
Auxiliary financ'l & insur'ce services	67	0.60	0.57	0.60	0.62	n/a
Owning and dealing in real estate	70.1,2pt	1.47	1.49	1.75	1.68	n/a
Letting of dwellings	70.2pt	7.33	7.50	7.46	7.52	n/a
Estate agent activities	70.3	0.47	0.47	0.43	0.40	n/a
Renting of machinery	71	0.82	0.83	0.85	0.88	n/a
Computing services	72	1.18	1.19	1.23	1.29	n/a
Research and development	73	0.54	0.53	0.54	0.55	n/a
Legal activities	74.11	0.97	0.99	1.01	1.02	n/a
Accountancy services	74.12	0.82	0.83	0.84	0.87	n/a
Market research	74.13-15	0.56	0.58	0.63	0.67	n/a
Architectural etc activities	74.2-3	1.64	1.59	1.56	1.57	n/a
Advertising	74.4	0.36	0.37	0.37	0.39	n/a
Other business services	74.5-8	1.92	1.95	2.03	2.07	n/a
less financial services adjustment	-	-4.47	-4.16	-5.05	-4.74	-4.19
Financial, real estate & business services	**65-74**	**20.47**	**21.11**	**21.22**	**20.94**	**21.36**
Public administration	**75**	**7.10**	**6.92**	**6.42**	**6.10**	**5.95**
Education	80	5.46	5.44	5.62	5.72	n/a
Health and veterinary services	85.1-2	5.11	5.09	5.06	5.16	n/a
Social work	85.3	1.59	1.63	1.75	1.81	n/a
Education, health & social work	**80-85**	**12.16**	**12.16**	**12.43**	**12.70**	**12.74**
Sewage and refuse disposal	90	0.52	0.55	0.55	0.55	n/a
Membership organisations	91	0.53	0.53	0.51	0.51	n/a
Recreational & cultural services	92	1.76	1.75	1.78	1.82	n/a
Personal service activities	93	0.48	0.47	0.48	0.47	n/a
Domestic services	95	0.42	0.44	0.47	0.48	n/a
Other services	**90-95**	**3.71**	**3.74**	**3.79**	**3.84**	**3.84**
Total services	**50-95**	**66.31**	**66.78**	**66.65**	**66.36**	**66.78**

Source : ONS input-output tables and Blue Book

Studies on international comparisons of service sector productivity levels

5. A paper by the National Institute of Economic and Social Research (NIESR)[2] provides a recent and quite comprehensive study examining relative labour productivity across countries, using National Accounts data and value added per hour. 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 33-38 percent higher than in the UK (Table A2).

6. 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 the UK's relative position improved in all cases.

7. At a more disaggregated level, the UK's productivity is higher relative to the other countries in a few sectors. One of the UK's areas of strength is its airline industry. Although the study is a good attempt at examining relative labour productivity in the countries concerned, results must be regarded as subject to a degree of uncertainty. Furthermore, service quality is not adequately captured in this measure of productivity.

Table A2
Comparative Labour Productivity by Service Sector in 1993: Value added per hour worked, UK=100

	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

[2] Oulton, O'Mahony and Vass (1996)

8. A paper by Dirk Pilat[3] has also estimated labour productivity level in OECD countries for manufacturing and selected service sectors. Amongst service sectors he examined distribution, airlines, telecommunications sector, postal services and railways.

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

ONS Output Indicators

9. The ONS compiles constant price GDP output indicators for services using a mixture of deflated turnov

Table A3 ONS Output Indicators, Breakdown by Industry, 1986-96

Industry	GDP	Manufacturing	Services	Motor Distn	wholesale	Retail	Hotels catering	& Transport	Land transport	Water transport
SIC		D	G-Q	50	51	52	55	60-63	60	61
1986	88.3	85.6	88.6	85.4	84.3	86.4	85.9	85.6	85.1	111.9
1987	92.4	89.6	92.7	93.5	92.3	90.8	91.3	92.6	91.1	108.4
1988	97	95.9	97.2	101.5	98.4	96.4	96.1	96.7	96.2	113.1
1989	99.3	100.2	99.2	102.8	103.6	99.4	99.1	100.8	99.9	110.4
1990	100	100	100	100	100	100	100	100	100	100
1991	97.8	94.6	99.1	89.9	96.9	99.7	93.5	97	95.9	98.7
1992	97.4	94	98.8	87.5	98	99.4	89.3	99.2	94.1	104
1993	99.6	95.3	101.6	90.1	107.5	101.4	91.7	103.5	95.8	105.1
1994	103.5	99.3	105.3	90.9	113.4	104.6	94.2	110.1	102.8	116.8
1995	106.1	101.5	108.6	98.6	115.3	106.1	94.3	115	107.5	116.9
1996	108.6	102	112.4	102.5	117.7	110	94.1	115.3	107.3	118.2

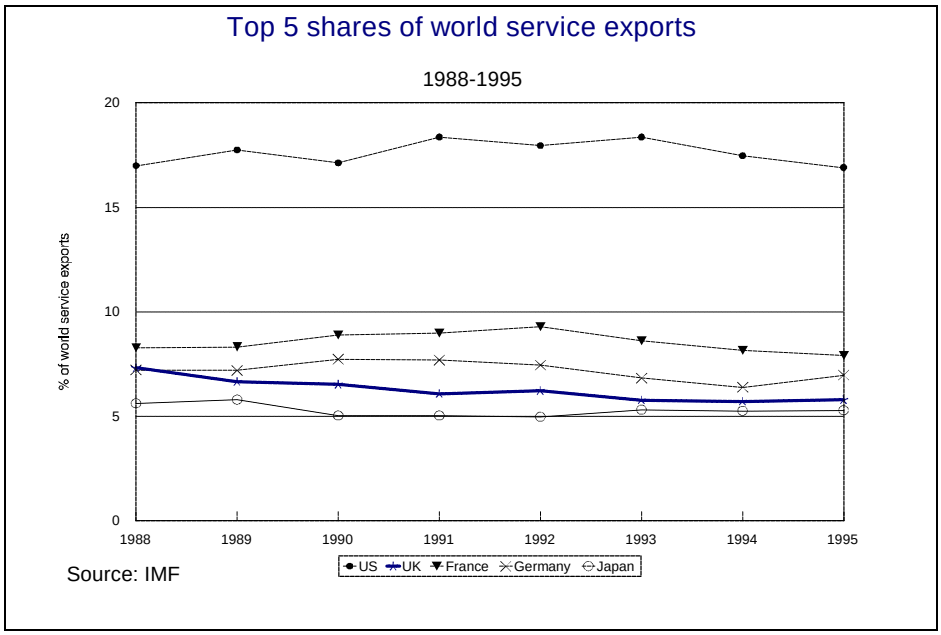
Industry	Financial Interm	Insurance & pension funds	Financial auxiliries	Real estate activities	Hiring machin ery	Computer services	R&D	Other Business services	public admin defence	&	Education	Healt Vet s
SIC	65	66	67	70	71	72	73	74	75		80	
1986	79.6	64.8	65.8	100	81.7	71.6	118.6	80.4	100.2		96	
1987	87.9	71.6	82.7	104.5	88.1	72.9	120.1	84.7	98.8		98.7	
1988	94.6	84.5	78	111.7	90.6	81.2	122	93.9	98.3		101.3	
1989	97.4	88.3	93.9	101.6	95.7	91.8	112.7	97.1	98.5		101.3	
1990	100	100	100	100	100	100	100	100	100		100	
1991	98.2	105	105.1	100.7	95.1	105.2	88.8	97	100.9		100	
1992	93.6	96	99.8	96	91	115.4	95.6	94	100.5		100.4	
1993	94.8	101.1	110.4	98	96.1	120.1	96.8	96.3	98.9		97.6	
1994	98.6	94.4	104.5	99.4	103.1	138.3	106.6	104.7	97.4		99.1	
1995	105	94	103.9	97	112	157.3	109.4	113.6	95.5		100.1	
1996	110.8	97	110.2	98.7	123	180.7	91.9	125.4	93		101.9	

International Trade in Services

10. The IMF provides aggregate data on national service exports and imports. The UK share of total world service exports declined from 7.3 per cent in 1988 to 5.8 per cent in 1995, although the share has stabilised since 1993 and increased marginally in 1995 (Chart A1).

11. These IMF data may understate the UK level of trade in services relative to countries such as France, Japan and Germany due to differences in the methods of data collection particularly for financial services.

Chart A1



12. The available data from IMF can be disaggregated into three broad types of market service, namely transport, travel and other private services (which includes financial and business services).

<u>UK share of particular countries service imports</u>

13. The UK's position, as a service exporter, may also be tracked from the import data of our most important markets. We have been able to identify eight other countries which publish or make available country breakdowns of their services trade i.e. US, Germany, Japan, France, Canada, Australia, Finland and Sweden. These national sources in four of our largest markets show the UK to be the second largest supplier of cross-border services after the US to France, Germany and Japan, and the largest supplier to the US (charts A2-5). These sources provide a consistent basis for looking at trends in market share, although they probably overstate the level of trade emanating from the UK. For example, these countries may obtain services through London brokers which have a provenance from another country.

14. The true level of UK trade in services exports probably lies between the two extremes of the picture portrayed by national sources and the IMF.

15. The US data can be disaggregated by about 25 types of service and the UK and others' shares identified for each. Table A6 identifies for the main services UK, other EU and Japanese shares of US service imports for 1995.

Chart A2

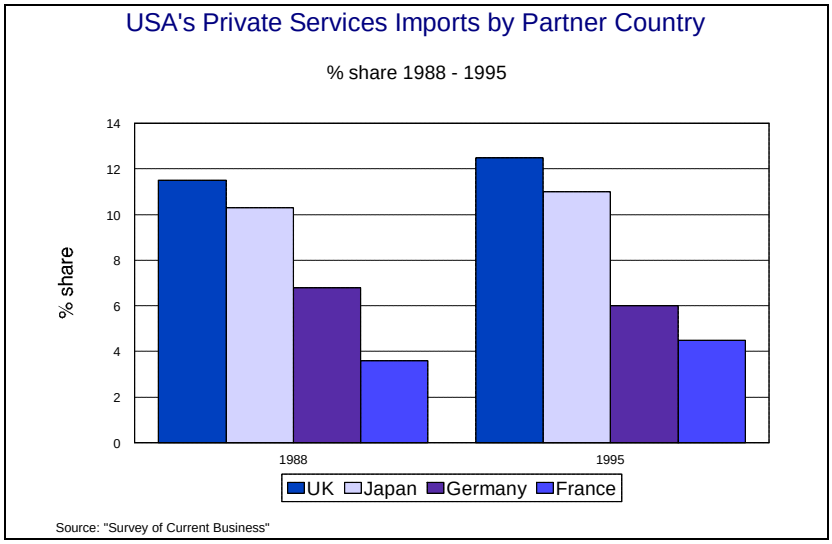


Chart A3

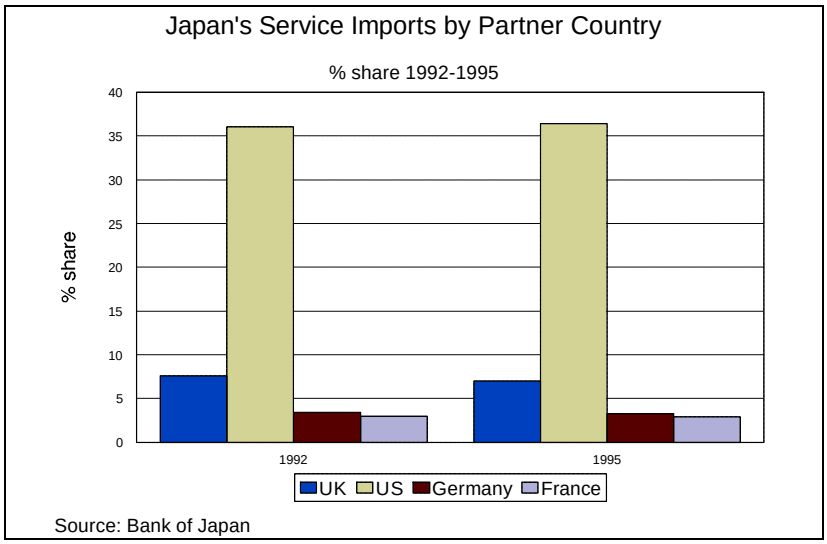


Chart A4

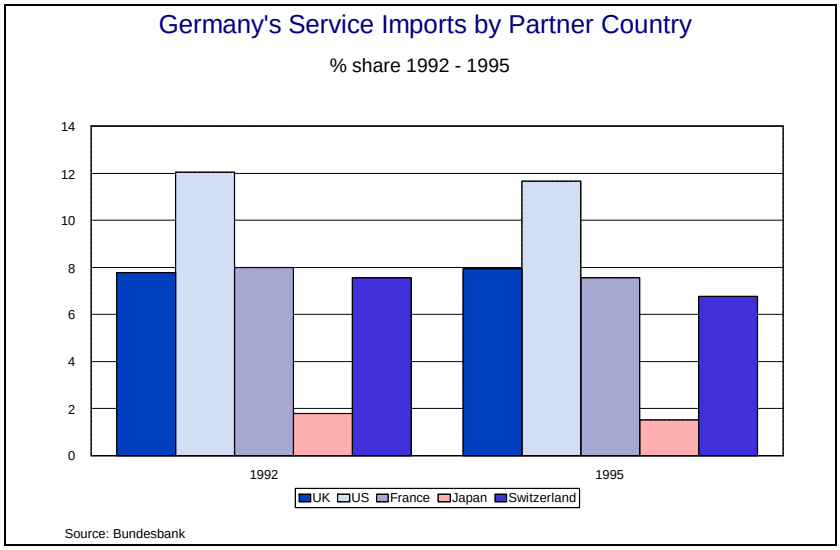


Chart A5

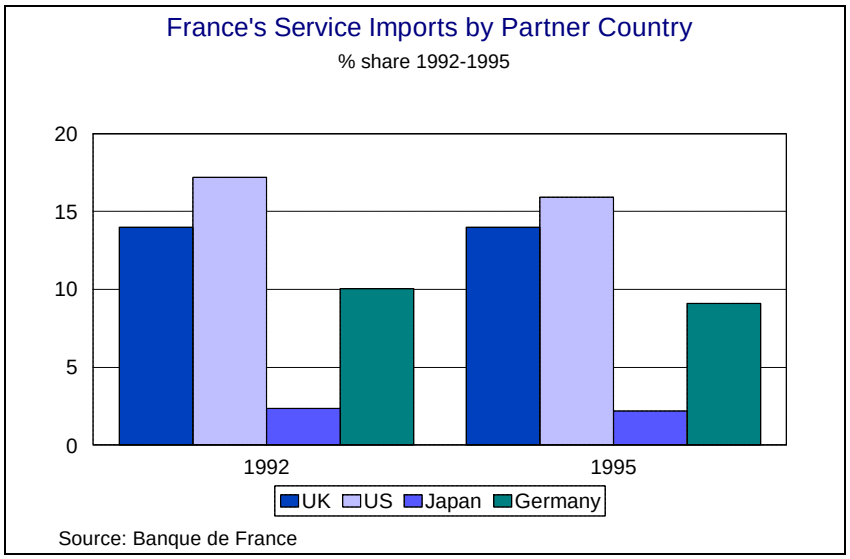


Table A6

Shares of US service imports by product and country, 1995

Type of service	US imports of services by product and country						
	1995 $mn				1995 %share		
	UK	Other EU	Japan	Total	UK	Other EU	Japan
Travel	4601	10543	2974	45855	**10**	**23**	**6**
Transport (passenger fares)	2605	3780	626	14313	**18**	**26**	**4**
Transport (freight)	1508	5669	5458	29205	**5**	**19**	**19**
Transport (port services)	977	2273	3058	11215	**9**	**20**	**27**
Royalties & License Fees	1751	1804	1467	6312	**28**	**29**	**23**
of which:							
between affiliates	1483	1450	1180	5148	**29**	**28**	**23**
unaffiliated industrial processes	95	306	280	819	**12**	**37**	**34**
unaffil books, records, tapes	65	18	2	119	**55**	**15**	**2**
Other private services	5698	6902	3714	33970	**17**	**20**	**11**
of which:							
between affiliates	2551	2781	2410	13723	**19**	**20**	**18**
unaffil: education	194	315	28	877	**22**	**36**	**3**
financial services	556	209	197	1707	**33**	**12**	**12**
insurance premiums	3326	2368	Disclosive	13710	**24**	**17**	**Disclosive**
telecoms	252	837	250	6773	**4**	**12**	**4**
film & tape rentals	51	27	6	167	**31**	**16**	**4**
unaffil business, tech and prof services	779	1122	610	4502	**17**	**25**	**14**
of which:							
advertising	64	176	248	686	**9**	**26**	**36**
computer services	32	237	59	462	**7**	**51**	**13**
database & information services	68	39	20	155	**44**	**25**	**13**
R&D services	53	73	16	277	**19**	**26**	**6**
Management consulting & PR	75	61	28	351	**21**	**17**	**8**
Legal services	99	93	49	406	**24**	**23**	**12**
construction, engineering & mining	31	25	6	305	**10**	**8**	**2**
industrial engineering	9	27	Disclosive	153	**6**	**18**	**D**
installation & repair of equipment	161	237	41	754	**21**	**31**	**5**
other business, tech and prof services	191	150	Disclosive	953	**20**	**16**	**D**

Source: Survey of Current Business