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ANALYTICAL CLASSIFICATION OF TRADE IN SERVICES\*

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\*The views expressed in this paper are those of the author and do not necessarily reflect those of the OECD or its Member Governments.

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## Introduction

1. Work is under way to improve trade-in-services statistics, both at the national and the international level (particularly in the United Nations, the International Monetary Fund, OECD and the European Communities). A major component of these efforts is the elaboration of an analytically useful classification. This is all the more important as the only international standard for trade-in-services - the Balance of Payments Manual (BPM) of the International Monetary Fund (IMF) - recommends a classification that has become wholly insufficient. In fact, the BPM classification identifies travel, transportation and government services, but lumps all other services (which have strongly expanded and diversified) into one item "Other private services". Some countries have initiated more detailed classifications, but in the absence of an appropriate international standard these efforts have produced data whose cross-country comparability is very limited.

2. This paper analyses the problems involved in the overhaul of the BPM trade-in-services classification, and presents suggestions for an analytical classification. It is organised into two parts:

- Part I examines the bases of an analytical classification: it discusses the problems of defining services and trade-in-services and of the choice of basic classifications.
- Part II assesses alternative services classifications and considers the building blocks of an analytical classification.

As conclusion, a proposal for an analytical classification is set out.

## Part I: Bases of an analytical classification

### 1. Definition of services

3. The formulation of a unique and comprehensive definition of services encounters great difficulties which are due to the complex and heterogeneous nature of services and to the diversity of analytical purposes. Three approaches to defining services have evolved over time. The first is best characterized as general, overall or positive, the second is of a residual or negative nature, and the third contents itself with establishing lists of service industries and products.

4. The first group of definitions focuses on characteristics that all services have in common, and which distinguish them from other economic categories, such as goods and factor income. The most widespread (and most convincing) definition of this kind is T.P. Hill's (1) (2): for him the producer of a service works to bring about some improvement (or prevent a deterioration) in the situation of the consuming unit, including any goods belonging to that unit, in close contact with this unit: the amount of service provided usually has to be measured by the extent of the change realised. The distinguishing feature of services production is that the producer adds value, not to his own goods, but to the goods or person of some other economic unit. (3) The improvement may take the form of a physical transformation of some good owned by the consumer unit, or may relate to the physical, financial or mental (such as the level of knowledge) condition of some individual or group of individuals. In most cases, services cannot be stocked and transferred and have to be consumed at the place and time of production. However, technological progress procures increasing possibility of both temporal and geographical separation of production and consumption.

5. Residual or negative definitions consider services both from an industrial or commodity viewpoint. The industrial (or institutional) approach groups industries into primary (or extractive), secondary (or transformative) and tertiary sectors: according to this logic the service industries constitute the tertiary sector which comprises all industries other than extractive and transformative sectors. From the angle of commodities, services have been defined as economic output that is not tangible and visible (4); they are contrasted with goods which are tangible and visible. Since certain services may result in tangible end-products (e.g. computer tapes) and goods may be embodied in services (e.g. food consumed in restaurants) the tangible/non-tangible criterion has to be complemented by two more criteria (5): (i) whether the input of a given activity has typically service input characteristics and (ii) whether the end result of the activity has more goods or more services features.

6. The third approach defines service industries in terms of categories of the United Nations (UN) International Standard Industrial Classification (ISIC) or of a national industrial classification. Service products can be defined in relation to the UN Central Product Classification (CPC) or a national commodity classification.

7. As trade-in-services data refer to products, the appropriate starting point is the CPC. The following list of CPC (6) categories appears to correspond, by and large, to the definitions of services set out in paras. 4 and 5 of this paper:

- a. Section 6: Trade services; hotel and restaurant services;
- b. Section 7: Transport, storage and communication services;
- c. Section 8: Business services; agricultural, mining and manufacturing services;
- d. Section 9: Community, social and personal services.

This list has, however, to be complemented by conventions on individual borderline cases (7), which reflect the difficulties to distinguish services from goods and factor income.

8. The main categories that are situated at the borders of services, are construction, repairs, processing and leasing. Construction could be treated as goods transactions, because the end products are tangible, but the production process has many services features (4) (the products are normally customised), and the products are immovable. Repairs and processing can be considered as services, because they lead to improvements in the condition of goods that belong to other economic units; repairers and processors receive a fee for adding value to the goods concerned. On the other hand, processing and repairing on a fee or contract basis may be subject to the same technical procedures as manufacturing for own account. Leasing of tangible assets may constitute a particular form of financing sales (purchases) of goods (financial leasing). It may also reflect the temporary use of a good (operational leasing); the leasing fee may be treated as property income because it relates to the tangible asset, but it can also be considered to represent a payment for a service, as the enterprise engaged in leasing provides a range of services, of which the hire of the good itself is only one component.

9. No definitive solutions of these borderline cases have been arrived at in the process of revising international standards. There is, however, a tendency to consider construction - at least in the international field - and operational leasing as service transactions, and to split repairs and processing into a goods and a service component: repairs of investment goods and processing implying a substantial physical change of the goods processed (entailing moves from one place in the CPC to another) would be treated as goods transactions, and the remaining ones as services.

## 2. Trade in services

10. After the delineation of the services universe the meaning of "trade-in-services" has to be clarified. In fact, it has been used in three different senses, depending on what is understood by tradeable and non-tradeable services (8) and by national and international transactions.

11. One approach is to define trade in services in analogy to trade in goods: on this basis the trade in services of a given country covers all services provided by producers in this country across the country's borders to customers in foreign countries, and all services received in the same way from producers in foreign countries (9). These services are embodied in material substances (10). They include services which are handled by electronic means through telecommunications (such as value-added or enhanced services which are

transmitted over telephone lines, certain banking and insurance transactions, travel reservation services, etc.): this kind of services has strongly expanded as a consequence of technological progress. The category includes also services embodied in goods (magnetic tapes, floppy disks), and international transport of goods and passengers. This category has been characterised as "long-distance services" (11) but also as "separated services" (12) and "splintered services" (13), as they are separated and splintered from their original production.

12. The second version of trade in services encompasses all service transactions between residents of the reporting country and non-residents. In addition to the cross-border trade indicated above, it includes two categories:

- i) Services provided by the producer within the national boundaries to non-residents: this is the case of the user being mobile, while the provider is immobile, because key elements of the production process are not transferable to the user's location, such as accommodation for tourists and hospital care of medical services;
- ii) Services provided by the producer outside his own country within the boundaries of the non-resident customer's country: the producer moves to the user because of physical constraints, which applies to construction work and consultancy services.

13. The two categories described in para. 12 have in common that physical proximity between provider and user of the service is essential (11), they are location-specific (14) or contact services (15). These two categories of service transactions have been characterised as indirect trade in services and as international production and consumption of services (2). The broader definition of trade in services has been adopted as the basis for the negotiations on trade in services in the framework of the Uruguay Round: it covers "... trade in services involving cross-border movement of services, cross-border movement of consumers, and cross-border movement of factors of production where such movement is essential to suppliers". (16)

14. As the sales of services often require close contact between producer and consumer delivery of services abroad must often be through foreign affiliates rather than directly from parents in the reporting country. This "establishment trade" is sometimes added to the forms of trade-in-services indicated above, in order to obtain a more complete picture (17): since sales channelled through foreign affiliates present transactions between non-residents they are not included in the balance-of-payments data of the country of residence of the parent company.

15. The concept of trade-in-services which appears to be the most significant for economic analysis is the second definition reflecting all transactions between residents and non-residents (which comprise cross-border trade and indirect trade): it is also operational for the negotiations on liberalisation measures. The question arises as to whether the distinction between the three components of trade could serve as a basis for an analytical classification. This breakdown is, however, geared to the different ways in which services are delivered. A classification based on the modes of delivery would not produce mutually exclusive classes (i.e. classes that are defined in

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a way that ensures that individual transactions can be fitted into one and only one class). because the same kind of categories can be delivered in more than one way.

### 3. Basic classifications of services

16. The basic classification from which an analytical classification of trade in services is to be derived should be universal, applicable to all possible statistical systems, so that linkages between them become feasible. It is particularly important that the classification underlying trade in services should be the same as the ones used for statistics on production and consumption of services. If this is the case, the shares of exports and imports in total production, the ratio of direct to indirect service exports, the service intensity of traded goods (18) (the extent to which indirectly traded goods are employed in the production of output) can be measured.

17. Trade in services data relate to products. The Central Product Classification (CPC) developed by the United Nations Statistical Office (UNSO) "is intended as a standard central product classification. This means that it was not developed for a specific purpose but that it is meant to be used for all kinds of statistics which need product detail. Such statistics may be for data on production or consumption, on prices, on foreign trade, commodity flows, stocks or balances, capital formation, etc., and also for use in input/output tables or in the balance of payments. It was developed primarily to enhance the harmonization between various sub-fields of economic and related statistics and to strengthen the role of the national accounts and balances as an instrument for co-ordination of economic statistics". (6) It is, hence, the appropriate basis for conceiving a trade-in-services classification.

18. The main CPC service components are the following:

#### 6 TRADE SERVICES: HOTEL AND RESTAURANT SERVICES

- 61 Sale, maintenance and repair services of motor vehicles and motor cycles
- 62 Commission agents' and wholesale trade services, except of motor vehicles and motor cycles
- 63 Retail trade services: repair services of personal and household goods
- 64 Hotel and restaurant services

#### 7 TRANSPORT, STORAGE AND COMMUNICATION SERVICES

- 71 Land transport services
- 72 Water transport services
- 73 Air transport services
- 74 Supporting and auxiliary transport services
- 75 Post and telecommunication services

#### 8 BUSINESS SERVICES: AGRICULTURAL, MINING AND MANUFACTURING SERVICES

- 81 Financial intermediation services and auxiliary services therefor
- 82 Real estate services

- 83 Leasing or rental services without operators
- 84 Computer and related services
- 85 Research and development services
- 86 Legal, accounting, auditing and book-keeping services; taxation services; market research and public opinion polling services; management and consulting services; architectural, engineering and other technical services
- 87 Business services n.e.c.
- 88 Agricultural, mining and manufacturing services
- 89 Intangible assets

#### 9 COMMUNITY, SOCIAL AND PERSONAL SERVICES

- 91 Public administration and other services to the community as a whole; compulsory social security services
- 92 Education services
- 93 Health and social services
- 94 Sewage and refuse disposal, sanitation and similar services
- 95 Services of membership organisations
- 96 Recreational, cultural and sporting services
- 97 Other services
- 98 Domestic services
- 99 Services provided by extraterritorial organisations and bodies

19. A trade-in-services classification being confined to tradeable services (whereas CPC covers all products) it has to be decided which CPC categories represent such services - in contrast to purely domestic services. One approach would be to treat all non-market services as non-tradeable. But certain non-market services (education, health, etc.), though domestically-produced, can be consumed by non-residents travelling to the country of production. So a distinction has to be made between (i) pure public services which can be characterised as "unsolicited" services (19), and (ii) other collective services which reflect transactions between the producer and the user, even if they are distributed free or almost free of charge. The exclusion of pure public services is justified, because there is no explicit transaction, but other non-market services can be considered as forming a part of indirect trade.

20. A second consideration is that a new trade-in-services classification should ensure continuity with the items of the actual edition of the BPM. This relates particularly to the item "travel" which cuts across the CPC classification, as it is defined as reflecting all products (goods and services) consumed by travellers.



## Part II: Components of an analytical classification

### 4. Alternative analytical classifications

21. Existing analytical classifications can be grouped into four main categories (20):

- i) production-based classifications: they focus on the methods and conditions of production and on characteristics of producers;
- ii) consumption-based classifications: they consider services from the point of view of consumption and consumers;
- iii) function-based classifications: they emphasise the economic and societal function of services;
- iv) object-based classifications: since a service-producing activity is designed to bring about an improvement in the condition of some other economic unit, the classification of services can be linked to the objects whose condition is to be improved.

22. Trade-in-services focuses on products. Hence, production-based classifications are of less relevance for an analytical classification of trade. The three other types of classifications highlighting various aspects of the use of services are susceptible of providing elements for the analytical classification of trade in services.

### 5. Consumer and producer services

23. An important feature of many consumption and function-based classifications is that they provide for a distinction between (i) consumer services, which are services provided largely in final markets to private persons, and (ii) producer services which are intermediate services delivered to enterprises which use them for the production of final goods and services (21). This distinction is fundamental, because the two categories are governed by different factors: demand for consumer services is largely determined by prices and personal income, while demand for producer services depends on output or investment decisions of enterprises.

24. Some classifications include, in addition to consumer and producer services, supplementary categories. One classification (22) adds social services (including health care and education) and distributive services (freight, transport and wholesale and retail trade). Another one (20) proposes infrastructure services (public utilities, construction, transport, storage and communication) and trade services (wholesale and retail trade, restaurants and hotels). These four additional categories can be divided into consumer services (transport of persons, retail trade, health and education, personal travel) and producer services (transport of merchandise, wholesale trade, business travel), so that the distinction between consumer and producer services remains the basic dichotomy for an analytical classification.

6. Consumer services: provided to persons and to goods

25. Services provided to households can be differentiated on the basis of the object (1) of service activities. On the one hand, service activities are directed to persons; they aim at improving the physical or mental condition of some individual person, or group of persons; examples are education, health care, cultural services and transport of persons.

26. On the other hand, service activities relate to the physical transformation of goods owned by the customers. They can be grouped into services (23) relating to: (i) movable goods (household appliances), (ii) buildings and other fixed assets (maintenance and repair of private dwellings), (iii) natural resources (land, water) and (iv) living things (propagation and care of plants and animals).

27. The first category represents contact services which require the physical presence of the users of the services, which is not the case of the second one. This distinction is analytically useful.

7. Producer services: upstream, onstream and downstream

28. Producer service inputs are required at various stages in the production process. This is the basic idea underlying the classification of producer services elaborated by UNCTAD (24).

29. This classification distinguishes:

- a) Upstream services: they are service inputs prior to the production process. Such services include feasibility studies, product conception and design, market research;
- b) Onstream production services: they represent services inputs integral to the production process itself such as quality control, equipment leasing, logistics of supply, maintenance and repair;
- c) Onstream parallel services: they are service inputs necessary for the operation of any type of firm such as accounting, personnel management, personnel search, training, software, telecommunications, legal, insurance, finance, cleaning, security, catering, real estate;
- d) Downstream services: they represent post-production service inputs necessary to the final sale such as advertising, transportations, distribution and subsequent provision of services associated with the product, i.e. repairs, maintenance, client training, etc.; often such services must be provided in order for the good to be competitive.

30. This classification provides insight into the role played by services in the production process, and represents a useful basis for a general classification of producer services.

Conclusion: A possible analytical classification of trade in services

31. The attached classification represents, in a way, the conclusion of the preceding considerations. It is derived from Section 6 to 9 of the final draft of the UN Central Product Classification. Its structure reflects the distinction between consumer and producer services, as main criterion. Consumer services are organised on the basis of the objects of service activities. Producer services are classified in line with their function in the production process of goods and services, with a distinction between upstream, onstream and downstream services.

32. The derivation of the trade-in-services classification faces a number of difficulties. Several categories of services can be delivered both to households and to enterprises, although one domain is normally preponderant: education and health care are normally provided to households, but can also be consumed by enterprises (e.g. in the form of professional training) and services (such as legal and taxation services) mainly delivered to enterprises are also directed to households. The place of certain services in the production process may vary from producer to producer, e.g. maintenance and repair of investment goods used are upstream services, but after-sale repairing is a downstream services; telecommunication services are normally onstream services, but can be downstream if data are electronically transmitted to customers. In these cases of conflict, the classification has been based on the main destination of the services under consideration; for this purpose the distinction between intermediate and final demand in input-output accounts has served as guidance (25). This approach is necessarily approximative: a higher degree of accuracy would require a finer CPC detail (e.g. the breakdown of motor vehicles into passenger cars and lorries, and the separation of retail banking).

## APPENDIX

Analytical Classification of Trade in Services

Items	CPC (14 Oct 1988)
A. Consumer services	
1. Services provided to persons	
a) Retail trade services	631 + 632
b) Hotel and restaurant services	64
c) Passenger transportation	7111 + 7121 + 7211 + 7221 + 731
d) Financial intermediation services:	
i) Mortgage loan services	81131
ii) Personal instalment loan services	81132
e) Insurance services:	
i) Life, accident and health insurance services	8121
ii) Motor vehicle insurance services	81291
f) Real estate services:	
residential property	82101 + 82103 + 82104 + 82201 + 82203 + 82204
g) Leasing or rental services without operator: private cars, personal and household goods	83101 + 832
h) Education services	92
i) Human health and social services	931 + 933
j) Services of membership organisations: furnished by trade unions and other membership organisations	952 + 959
k) Recreational, cultural and sporting services	96
l) Other services	9702 + 9703
2. Services provided to goods	
a) Sale, maintenance and repair of motor vehicles and motorcycles	61
b) Repair services of personal and household goods	633
c) Veterinary services for pet animals	93201
d) Washing, cleaning and dyeing	9701 + 9709
B. Producer services	
1. Upstream services	
a) Real estate services: non-residential buildings	82102 + 82105 + 82106 + 82202 + 82205 + 82206

b) Leasing or rental services without operators: machinery and equipment (except private cars)	831 - 83101
c) Research and development services	85
d) Market research	86401
e) Management consulting services	865 + 866
f) Architectural, engineering and other technical services	867
g) Placement and supply services of personnel	872
h) Investigation and security services	873
i) Services of membership organisations furnished by business employers and professional organisations	951
2. Onstream services	
a) Post and telecommunication services	75
b) Financial intermediation and auxiliary services (except financial intermediation and insurance services provided to persons)	81 - 8121 - 81291 - 81131 - 81132
c) Computer and related services	84
d) Legal services	861
e) Accounting, auditing and bookkeeping services	862
f) Taxation services	863
g) Building-cleaning services	874
h) Photographic services	875
3. Downstream services	
a) Freight transportation	7112 + 7123 + 713 + 7212 + 7222 + 732 + 74
b) Commission agents' and wholesale trade services (except of motor vehicles and motorcycles)	62
c) Advertising services	871
d) Repair services incidental to metal products, machinery and equipment	886

### Notes and References

1. Hill, T.P. (1987). "On Goods and Services". Review of Income and Wealth, December, p. 318.
2. Hill, T.P. (1987). The Economic Significance of the Distinction Between Goods and Services, presented at the 20th General Conference of the International Association for Research in Income and Wealth, pp. 5-6.
3. This can be illustrated by the difference between customised software produced to the particular specifications of the individual customers (which is treated as a service) and packaged standardised software that can be used by a great number of anonymous customers and is bought in the same way (and often the same shops) as a book, which is classified as a good.
4. Whitchard, O.G. (1984). US International Trade and Investment in Services: Data Needs and Availability, p. 9.
5. United Nations Statistical Office (1988). Service Statistics within the United Nations Statistical Activities, p. 37.
6. United Nations (1988). Final Draft of the Central Product Classification, 14 October, pp. 3-16.
7. Drechsler, L. and Hoffmann, H. (1988). Conjectures on services in the world economy with scanty data, pp. 18-23.
8. UNCTAD (1985). Services and the development process, p. 41-42.
9. Hindley, B. (1988). "Service Sector Protection: Considerations for Developing Countries". The World Bank Economic Review, May, p. 208.
10. Grubel, H.G. (1987). "All Traded Services are Embodied in Materials or People". The World Economy September, p. 325.
11. Bhagwati, J.N. (1987). "Trade in Services and the Multilateral Trade Negotiations". The World Bank Economic Review, September, pp. 552-554.
12. Calfat, G. (1988). "Belgium's International Service Transactions: A Balance of Payments Approach". Economisch en Sociaal Tijdschrift, October, p. 573.
13. Bhagwati, J.N. (1984). "Splintering and Disembodiment of Services and Developing Nations". The World Economy, June, p. 136-138.
14. Stern, R. (1985). "Global dimensions and determinants of international trade and investment in services". Trade and Investment in Services: Canada/US Perspectives, p. 132.
15. Jones, R.W. and Ruane, F. (1988). Appraising the Options for International Trade in Services, p. 2.

16. GATT (1989), "Mid-Term Review: Final Agreement at Geneva - Part II: Negotiations on Trade in Services", Newsletter, 61-May, p. 15.
17. Ascher, B. and Whichard, O.C. (1986), "Improving Services Trade Data", O. Gianini (ed), The Emerging Service Economy, pp. 261-265.
18. Tucker, K. and Sundberg, M. (1988), International Trade in Services, pp. 29-38.
19. Stern, R. and Hoekman, B.M. (1988), "Conceptual Issues Relating to Services in the International Economy", C.H. Lee and S. Naya, Trade and Investment in the Asia-Pacific Region, p. 8.
20. Riddle, D.J. (1986), Service-led Growth: The Role of the Service Sector in World Development, pp. 13-21.
21. Congress of the United States, Office of Technology Assessment (1987), International Competition in Services, p. 36.
22. Key, T.S.T. (1985), "Services in the UK Economy", Bank of England Quarterly Bulletin (September), p. 405.
23. McKellar, N.L. (1982), A Classification of Services for International Trade, pp. 1-7.
24. UNCTAD (1988), Trade and Development Report 1988, p. 177.
25. Central Statistical Office (1988), Input-output tables for the United Kingdom 1984 and Statistisches Bundesamt (1989), Ergebnisse der Input-Output-Rechnung 1970 bis 1986.