

Paris, 6th September 1990

Department of Economics
and Statistics

ANALYTICAL CLASSIFICATION OF INTERNATIONAL TRADE IN SERVICES*
(Revised Version)

Contribution to the Fifth Meeting
of the Voorburg Group on Service Statistics

by

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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

International trade in services has expanded and diversified, reflecting the vigorous growth of service activities in the world economy. This trend has stimulated analytical work devoted to trade-in-services. As a result, a great number and variety of analytical classifications have been developed. They are a corollary of the heterogeneity of services, which range from very simple and traditional to highly sophisticated and newly-developed ones, and respond to diverse analytical requirements.

This study is designed to contribute to the ongoing discussion of analytical aspects of trade-in-services. To this effect, it is organized into four parts:

- Part I provides an overview of the most important analytical classifications
- Part II elaborates the elements of an alternative analytical classification that could be useful in the OECD framework
- Part III presents the proposed analytical classification
- Part IV tests this classification against available OECD data

I OVERVIEW OF ANALYTICAL CLASSIFICATIONS

A. Categories of analytical classifications

Existing classifications can be grouped into the following categories(1):

- a. The first focuses on the methods and conditions of production and the characteristics of producers
- b. The second considers services from the point of view of consumption patterns and economic and societal functions of services
- c. The third is geared to the characteristics of the objects to which services are applied
- d. The fourth is based on the relationships between producers and users of services
- e. The fifth emphasizes the relations between services and goods.

Trade in services relates to products: hence the first category of classifications - the production-based classifications - is less relevant in the context of this study. The most important classifications belonging to the four other categories are set out in what follows.

B. Consumption and function-based classifications

The basic distinction in this category (used by INSEE(2)) is between

- a. intermediate services which are used at some stage in the production process, and
- b. final services which are directly consumed by the individual consumer.

A similar classification proposed by F. Duchin(3) also focuses on the dichotomy between production and consumption, but provides a third group; it distinguishes:

- a. services used mainly in production and delivered primarily to businesses
- b. services primarily directed at final consumers
- c. services delivered about equally to production and for public and private consumption (insurance, financial services, communications).

An enlarged classification elaborated by T.S.T. Key(4) and P. Petit(5) provides for four categories:

- a. consumer services
- b. social services (health care and education)
- c. producer services
- d. distribution services (freight transport, wholesale and retail trade)

D. Riddle(6) proposes a five-pronged classification with the following breakdown:

- a. infrastructure services: they cover public utilities, construction and transport, storage and communication;
- b. trade services including wholesale and retail trade, restaurants and hotels;
- c. business services comprising financing, insurance, real estate and other business services;
- d. public administration and defence
- e. social and personal services

Key's, Petit's and Riddle's classifications are compatible with the basic distinction between intermediate and final services, as the four or five categories proposed by them can be attributed either to intermediate or final services.

A borderline case between function and production-based classifications is B. Hindley's(7) classification which distinguishes:

- a. locational services, whose essence is the conveyance of somebody or something from one geographical location to another (transport of persons, telecommunication of data);
- b. intermediation services, which provide a means of contact between pairs or groups of persons with off-setting excess demands (banking, trade, broking, employment agencies);
- c. knowledge or skill-based services (services of lawyers, architects, sportsmen);

This classification does not satisfy the criterion that categories should be mutually exclusive, because a great number of locational and intermediation services are also knowledge or skill-based.

A number of classifications start from the basic breakdown between intermediate markets (or producer services) and final markets (or consumer services) and disaggregate them.

One of these classifications(8) presents the following structure:

- a. Intermediate services
 - (i) Distributive services (wholesale and retail trade, transport and storage, communication)
 - (ii) Producer services (financial services, insurance, real state, legal services, accounting, data processing, engineering and other professional services, advertising, leasing etc.)
- b. Final services
 - (i) Social services (public services, sanitary and similar services, education, research, health, welfare etc.)
 - (ii) Personal services (hotels and restaurants, entertainment, cultural services, repair services, etc.)

A more developed classification of this type used by the US Office of Technology Assessment(9) is the following:

1. Intermediate markets

a. Financial services

- (i) Banking (including investment banking and brokerage)
- (ii) Insurance
- (iii) Leasing

b. Shipping and distribution

- (i) Ocean
- (ii) Rail
- (iii) Trucking
- (iv) Air freight
- (v) Warehousing, distribution, wholesale trade

c. Professional and technical

- (i) Technical licensing and sales
- (ii) Architecture, engineering, and construction (including engineering design services, architectural design, construction management, and contracting)
- (iii) Management services
- (iv) Legal services
- (v) Accounting

d. Other intermediate or business services

- (i) Information technology services (including software, telecommunications, data processing, and information services)
- (ii) Franchising
- (iii) Advertising
- (iv) Other (commercial real estate, business travel, security, postal and courier services, contract maintenance...)

2. Final markets

- a. Retail trade (including restaurants)
- b. Health care
- c. Travel, recreation, entertainment
- d. Education
- e. Other social services, including government
- f. Other personal services

UNCTAD(10) elaborated a detailed classification confined to producer services:

- a. Upstream services are inputs prior to the production process. Such services include feasibility studies, product conception and design, market research;
- b. Onstream production services are inputs integral to the goods-production process itself such as quality control, equipment leasing, logistics of supply, maintenance and repair;
- c. Onstream parallel services are 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 are post-production 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.

C. Object-based classifications

Two classifications differentiate services on the basis of the objects of service activities.

The first, proposed by T. P. Hill(11), distinguishes:

- a. service activities directed to persons: they aim at improving the physical or mental condition of some individual person, or group of persons (education, health care, transport of persons)

- b. service activities directed at goods (such as repairs or rentals)

The second, by McKellar(12), is based on the same distinction as T. P. Hill's classification, but disaggregates services applied to goods into the following categories:

- a. living things (propagation and care of plants and animals)
- b. movable goods (household appliances)
- c. buildings and other fixed assets
- d. natural resources.

D. Classifications based on the relationships between producers and users

Two very similar classifications of this type were developed by Bhagwati(13) and Stern-Hoekman(14). They can be synthesised as follows:

- a. The first category of services are those whose production does not require the physical proximity between producers and users. They represent "long distance", "separated", "disembodied" or "splintered" services. Such services are fundamentally similar to tangible goods with respect to opportunities for trade and gains from trade(15). The scope for such service transactions is a function of technology and shows a rising trend. Although not being indispensable, physical proximity between provider and user does lead to substantially greater efficiency.
- b. The second category comprises services for whose production the physical proximity of the users is essential. Three cases can be distinguished:
 - (i) The providers of services are mobile, but the user is immobile. For these "demander-located" services (such as construction services) the mobility of users is physically impossible so that the provider has to move capital or labour to the production site.
 - (ii) The providers of services are immobile, but the users are mobile (provider-located services). The user must move to the provider because some key elements of the production process are not transferable to the users' location (e.g. accommodation for tourists, hospital care for medical patients). Free trade in such services requires unrestricted international movement of potential demanders.

- (iii) Providers and users are mobile. For this range of "footloose" services mobility is symmetrically possible (e.g. repairs of household goods and lectures); the activity can occur in the importing country, the exporting country, or even in a third location.

E. Classifications based on the relations between services and goods

In this context, two classifications have been proposed.

R.M. Stern(16) classifies services from the point of view of trade in goods into three categories:

- a. Services which are complementary to trade in goods, such as transportation and associated transportation services, merchandise insurance, export financing and advertising; they are natural by-products to merchandise exports;
- b. Services that substitute for trade in services or for local goods production, such as franchising, rental, leasing and catering;
- c. Services without a direct relationship to goods, such as legal and medical services, life insurance, real estate, telecommunications, data processing and information services, and travel.

The classification proposed by the Canadian Institute for Research on Public Policy(17) covers the same three categories that have been proposed by R. M. Stern, but adds a fourth category which comprises services embodied in goods. Some services such as motion picture films, sound recordings, books and computer programmes are exported in a form embodied in goods. Sometimes this type of service is traded after the sale of the physical good. It is embodied with the physical good in the sense that both are "bundled" together at the time of sale, but the service dimension is drawn down (traded) over time. For example, sophisticated manufactured exports may require a continued service input to keep them in operation and continually useful as new innovations are introduced. This category of services is embodied in, or complementary to, the physical good, while services of Stern's first category are complementary to the transaction or exchange rather than the good itself.

II THE CONSTRUCTION OF AN ALTERNATIVE ANALYTICAL CLASSIFICATION OF TRADE IN SERVICES

A. The components of an alternative classification

The construction of a classification requires, as a first step, the provision of basic elements. In this context, the definitions of services and of trade in services underlying the classification have to be discussed, and the general classification from which the analytical one is derived, to be selected. The second step is the development of the structure of the classification and the choice of the individual building blocks.

B. Definition of services

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 characterised 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.

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(18); for him the producer of a service works to bring about some improvement (or to prevent a deterioration) in the situation of the consuming unit, including any goods belonging to this 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. 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.

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(19): 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(20): (i) whether the input of a given activity has typically service characteristics and (ii) whether the end result of the activity has more goods or more services features.

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.

For the purposes of this study, T.P. Hill's definition is used, but is complemented by the following list of CPC categories:

- 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.

C. International trade in services

After the delineation of the services universe the meaning of "international 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(21) and by national and international transactions.

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(22). This category of services represent the "long-distance" services representing the first category of classification D. These services are embodied in material substances(23). 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.

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.

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.

These two categories have in common that physical proximity between provider and user of the service is essential(24), they are location-specific(25) or contact services. These two categories of service transactions have been characterised as indirect trade in services and as international production and consumption of services(18).

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"(26)

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(27); 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.

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, because the same kind of categories can be delivered in more than one way.

D. Basic classifications of services

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(28) (the extent to which indirectly traded services are employed in the production of output) can be measured.

Trade-in-services data relate to products, so a product classification is required. 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"(29). It is, hence, the appropriate basis for conceiving a trade-in-services classification.

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 motorcycles
- 62 Commission agents' and wholesale trade services, except motor vehicles and motorcycles
- 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

Since a trade-in-services classification is 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⁽³⁰⁾, 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.

E. Consumer and producer services

The distinction between consumer (or final) services and producer (or intermediate) services is fundamental. The two categories are governed by different factors: demand for consumer services is largely determined by prices and personal income⁽³¹⁾, while demand for producer services depends on output or investment decisions of enterprises. The behaviour of the two categories has been quite different. Producer services have shown a particularly strong growth, as they have become more varied, more specialised and more available, thanks to the process of externalisation of services production⁽³²⁾ and the advent of the information revolution; examples of such trends are industrial design, management consultancy and marketing. By contrast, many consumer services have been shifted out of the market and are being carried out in the home. This internalisation or emergence of a self-service economy is relevant for many household and entertainment services⁽³³⁾.

For these reasons, the dichotomy of total services into consumer and producer services serves as the primary criterion for conceiving the analytical classification.

The application of this criterion faces practical problems, because many categories of services are provided to the individual as well as to businesses⁽³⁴⁾. But many of these categories have a focal point: they are mainly provided to consumers or to enterprises. Indications of these focal points are provided by input-output accounts. In this context, input-output accounts of the United States for 1985⁽³⁵⁾, of Germany for 1986⁽³⁶⁾ and of the United Kingdom for 1984⁽³⁷⁾ are used. The classification of the controversial categories is made on a case-by-case basis which is set out in what follows:

- a. Trade services: While wholesale trade clearly represents producer services, retail trade is problematical; it is construed as a service to consumers
- b. Hotel and restaurant services: These services are provided to both consumers and producers (in the form of business travel services), but the overwhelming part is rendered to private consumers (in the United States 75 per cent, in Germany 60 per cent and in the United Kingdom 81 per cent).
- c. Transportation: The main distinction is between passenger transportation (which is classified as consumer services, in line with hotel and restaurant services) and freight transportation which is considered as mainly representing producer services.
- d. Communications services: The share of personal consumption in total output is 45 per cent in the United States, 38 per cent in Germany and 26 per cent in the United Kingdom, so that this category is classified as producer services.
- e. Financial services (excluding insurance): These services are provided to consumers (retail or consumer banking) and to producers (wholesale or institutional banking). The CPC does not provide such a distinction, so that financial services are classified as a whole. They are considered as producer services because only a limited part is rendered to private consumers: 7 per cent in Germany and 1 per cent in the United Kingdom (in the US accounts, finance and insurance are grouped).
- f. Insurance services: The main distinction is between life and non-life insurance. Life insurance (including accident and health insurance) as well as motor vehicle insurance are treated as consumer services, and the other insurance categories as producer services.

F. Consumer services: provided to persons and to goods

For consumer services, the distinction between services provided to persons and to goods is regarded as the most significant one. In fact, services provided to persons mostly require proximity between provider and user of services while this is not the case for the other consumer services. Boundary cases between the two are real estate services associated with

residential property and leasing or rental services of private cars, personal and household goods: they are classified as services provided to persons because persons directly benefit from these services and no change in the condition of goods (as in the case of repairs) occurs.

G. Producer services: upstream, onstream and downstream

For the structure of the classification of producer services, the distinction between upstream, onstream and downstream services was chosen. It is based on the assumption that most services inputs have a specific role in the overall activities of an enterprise, although there exist borderline cases.

As upstream services are classified those which are required, at any rate, before production of goods or services can take place. If buildings, machinery and equipment are not owned by the producing unit, they have to be rented or leased (i.e. for setting up a construction company's site office abroad). Research and development of products as well as market research has to be carried out. Management consulting services are required for organising the enterprise. Personnel has to be hired, normally in advance of any productive activity.

Onstream services are service inputs into the general functioning of the enterprise and into their production process in the strict sense. As such are considered post and telecommunications services; financial services; computer and related services; legal, accounting, auditing, bookkeeping and taxation services, etc.

Downstream services are those which typically are post-production inputs. The goods and services produced have to be advertised, sold and transported, and the goods delivered have to be maintained and repaired. The dividing line between this category of producer services and upstream and onstream services cannot be drawn with precision, because certain types of services (mainly transportation and telecommunications services) are needed in all stages: not only goods and services produced by the enterprise have to be transported, but also machinery, raw materials, semi-finished goods and data which are used in the production process.

III THE ALTERNATIVE CLASSIFICATION

The following classification reflects the considerations set out in Chapter II. It is linked to the CPC.

Analytical classification of international 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) Insurance services: Life, accident and health insurance services	8121
e) Real estate services: residential property	82101 + 82103 + 82104 + 82201 + 82203 + 82204
f) Leasing or rental services without operator: private cars, personal and household goods	83101 + 832
g) Education services	92
h) Human health and social services	931 + 933
i) Services of membership organisations furnished by trade unions and other membership organisations	952 + 959
j) Recreational, cultural and sporting services	96
k) 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) Motor vehicle insurance services	81291
d) Veterinary services for pet animals	93201
e) 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 insurance services provided to consumers)	81 - 8121 - 81291
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

IV TESTING OF THE ALTERNATIVE CLASSIFICATION AGAINST OECD COUNTRIES DATA

The purpose of this testing is to assess the present feasibility of the alternative classification. This classification is tested against the data on trade in services collected in the OECD document "OECD Countries' International Trade in Services 1970-1987", which reflect balance-of-payments' statistics.

A. Consumer services

Few data are available for the individual items of this category:

- (i) Data on passenger transportation relating to international transport (excluding domestic transport) are compiled by 16 OECD Countries;
- (ii) Data on educational services (mostly expenditures by students) are collected by the United States and the United Kingdom;
- (iii) Data on health services are compiled by the United States; they cover receipts of US hospitals from foreign patients;
- (iv) Data relating to films and television (which represent a part of the category "Recreational, cultural and sporting services") are collected by 13 OECD Countries.

The main balance-of-payments item relevant for consumer services is the item "Travel". It cuts across the CPC classification as it covers all goods and services acquired by nonresident travellers from an economy: hotel and restaurant services, retail trade services, renting of houses and cars, repairs, recreational, cultural and sporting services, etc. No breakdown of total travel expenditure by these service categories is available.

B. Producer services

a. Upstream services

Upstream services are included in three balance-of-payments items:

- (i) Rentals covering the operational leasing of structures, machinery and equipment other than transportation equipment are recorded by Canada, Finland, the Netherlands, Norway and Spain;
- (ii) Consultancy and technical cooperation data are compiled by the United States, France, the United Kingdom, Canada, Belgium, Luxemburg, the Netherlands, Norway and Spain; these data cover surveys, research, development and provision of instruction and technical knowhow, but include also, in some Countries' data, architectural and engineering services;

- (iii) Architectural and engineering services are identified by the United States (whose data include construction) and by the United Kingdom;

b. Onstream services

In this category, data are available for the most important items, though the number of reporting countries is, in many cases, limited.

- (i) Data on post and telecommunications services are reported by 12 OECD Countries; the United States exclude postal services, but include value-added (enhanced) services.
- (ii) Financial services (excluding insurance) are covered by 9 OECD Countries; most data are, however, confined to banking services.
- (iii) Data on insurance services are compiled by all Countries except Turkey, although it is not possible to separate data on life insurance (which is treated, in this study, as representing consumer services).
- (iv) Computer-related services, legal services and accounting, auditing and bookkeeping services are compiled only by the United States and, in addition, by Canada and Norway (for computer-related services) and by the Netherlands as far as legal services are concerned.

c. Downstream services

For all four items of this category, data are compiled by OECD Countries, but to a variable degree.

- (i) Data on freight transportation are recorded by 16 OECD Countries, a part of which is broken down by mode of transportation.
- (ii) Commission agents' and wholesale trade services are compiled by 11 Countries, mostly under the heading "Commissions". Some Countries' data cover, in addition to merchandise transactions, financial services.
- (iii) Data on advertising are collected by 9 OECD Countries; they normally cover all forms of publicity, sales promotion, exhibitions and trade fairs.
- (iv) Repair services are identified only by Finland: some Countries combine repair services and processing.

NOTES AND REFERENCES

1. This typology is derived from D. I. Riddle's summary of alternate classification systems (Service-Led Growth: The Role of the Service Sector in World Development, Praeger New York 1986, pp 13-21), which distinguishes production-based, consumption-based and function-based classifications. It is complemented by categories c, d and e.
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Paris, 6th September 1990

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DEFINING SERVICES: AN ENUMERATIVE APPROACH

Contribution to the Fifth Meeting
of the Voorburg Group on Service Statistics

by

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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.

Introduction and summary

1. In view of the great conceptual difficulties to arrive at a single overall definition of services and the various analytical requirements, this note proposes a multiple enumerative definition of service activities.
2. The proposed set of definitions are formulated in terms of the United Nations International Standard Industrial Classification of all Economic Activities Revision 3 (ISIC); the broad structure of ISIC is reproduced in Annex II of this note. The definitions correspond to totals of ISIC Categories and Divisions.
3. The central definition, S1, is in principle the broadest definition of service activities and appears to be the most widely used one. Definitions S2 to S5 are linked to S1 by adding and/or deducting a variable number of ISIC Categories and Divisions. The relationship of definitions S1 to S5 with ISIC and their inter-relations are summarised in Annex I.
4. It should be noted that the present proposals are preliminary, they represent a basis for discussion. Comments by national and international experts and additional information on national practices will be incorporated into a revised version of it.

The overall versus the enumerative approach to defining services

5. Services as a whole can be defined in two ways. The first approach focuses on characteristics that all services have in common and which distinguish them from other economic categories, such as goods and factor services: this is the overall or general approach.

6. Several endeavours to formulate such a definition have been made, partly based on a single criterion, partly on several ones (services are invisible and intangible, services cannot be stored and transported, services lead to change in the condition of a person or a good belonging to some economic unit, services are customised, etc)⁽¹⁾. However, neither a single nor a combination of criteria have yielded operational clear-cut definitions of services, mainly because services are very heterogeneous and are often intertwined with goods and factor services and are provided as a bundle.

7. The second approach consists in enumerating categories of economic activities or products which are equated with the universe of services. Such lists can be positive ones, indicating all the components that add up to total services: they can also be of a negative or residual nature. Lists of this kind relate to existing classifications, either of activities or of products.

8. The advantage of this second approach is that it delineates the universe of services more clearly than the overall approach. In fact, existing classifications are very detailed and provide definitions of the individual items which clarify boundary cases.

Single versus multiple definitions

9. A single definition is not adequate for varying analytical purposes and for different institutional conditions. By contrast, a set of inter-related definitions is more flexible to satisfy a diversity of analytical requirements and to accomodate differing structural factors.

10. There are two methods of interlocking multiple definitions. The first version can be the narrowest one, and the last the broadest as is the case of monetary aggregates ⁽²⁾. The ranking can also be organised conversely, with the first version representing the broadest one, and the following showing a steadily narrowing coverage.

Main criteria of a possible definition

11. The definition proposed hereafter is enumerative. It is based on the United Nations International Standard Industrial Classification of all Economic Activities Revision 3 (ISIC), whose broad structure is reproduced in Annex II.

12. It is also a multiple definition covering five versions S1 to S5. S1 represents the central and, in principle, the broadest definition, and the following ones are progressively narrower.

Definition S1

13. The proposed definition corresponds to the following ISIC Revision 3 Categories:

- G Wholesale and retail trade, repair of motor vehicles, motor cycles and personal and household goods.
- H Hotels and restaurants
- I Transport, storage and communication
- J Financial intermediation
- K Real state, renting and business activities
- L Public administration and defence; compulsory social security
- M Education
- N Health and social work
- O Other community, social and personal service activities
- P Private households with employed persons
- Q Extraterritorial organisations and bodies

14. In terms of ISIC Revision 2 this definition encompasses the following Major Divisions:

- 6. Wholesale and retail trade and restaurants and hotels
- 7. Transport, storage and communication
- 8. Financing, insurance, real state and business services
- 9. Community, social and personal services.

15. This definition appears to be the most widely used. It is applied in the accounts of gross domestic product by industry in the National Accounts of the United Kingdom ⁽³⁾, Italy ⁽⁴⁾, Sweden ⁽⁵⁾ and the Netherlands ⁽⁶⁾. It corresponds also to Japan's definition except that Japan excludes real state rent ⁽⁷⁾.

16. A variant of S1 which includes public utilities is used for the "Experimental Service Production Indexes" of the Board of Governors of the US Federal Reserve System.

Definition S2

17. This definition builds on S1, but includes Category F (Construction) and excludes Category K (Public administration and defence, compulsory social security). By the exclusion of Category K - which represents the "pure public goods" - Definition S2 approximates the concept of "market services": it includes, however, non-market services relating to other Categories such as Category M (Education).

18. Definition S2 has been used for the classification of international trade in services, e.g. by the United States ⁽⁸⁾ and Australia ⁽⁹⁾.

Definition S3

19. This definition is linked to S1, too. In order to arrive at it, not only Category K is deducted (as is the case of S2), but also Categories G (Wholesale and retail trade...) and I (Transport, storage and communications).

20. Positively expressed, it encompasses the following Categories:

- H Hotels and restaurants
- J Financial intermediation
- K Real estate, renting and business activities
- M Education
- N Health and social work
- O Other community, social and personal service activities
- P Private households with employed persons
- Q Extraterritorial organisations and bodies.

This definition is used in the National Accounts of Germany (10).

Definition S4

21. Definition S4 represents a further reduction of the coverage of S1: wholesale and retail trade, transport, storage and communications, financial intermediation and real estate activities are deducted.

22. Hence, the definition of S4 corresponds to:

- H Hotels and restaurants
- K (except Div. 70: Real estate activities) Renting and business activities
- L Public administration and defence; compulsory social security
- M Education
- N Health and social work
- O Other community, social and personal service activities
- P Private households with employed persons
- Q Extraterritorial organisations and bodies.

This definition is applied in the National Accounts of France (11).

Definition S5

23. This definition, used by the United States⁽¹²⁾ is identical to S4, except that it excludes Category L (Public administration). It is tantamount to a hard-core definition of services. It corresponds to the following ISIC Categories:

H Hotels and restaurants

K (except Div. 70: Real estate activities). Renting and business activities.

M Education

N Health and social works

O Other community, social and personal service activities

P Private households with employed persons

R Extraterritorial organisations and bodies.

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Major Group 70.	Hotels, rooming houses, camps and other lodging places
Major Group 72.	Personal services
Major Group 73.	Business services
Major Group 75.	Automotive repair, services, and parking
Major Group 76.	Miscellaneous repair services
Major Group 78.	Motion pictures
Major Group 79.	Amusement and recreation services
Major Group 80.	Health services
Major Group 81.	Legal services
Major Group 82.	Educational services
Major Group 83.	Social services
Major Group 84.	Museums, art galleries, and botanical and zoological gardens
Major Group 86.	Membership organisations
Major Group 87.	Engineering, accounting, research, management, and related services
Major Group 88.	Private households
Major Group 89.	Miscellaneous services

Annex IDefinitions of S1 to S5

ISIC Categories and Divisions	S1	S2	S3	S4	S5
I. Construction	-	X	-	-	-
G. Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	X	X	-	-	-
H. Hotels and restaurants	X	X	X	X	X
I. Transport, storage and communications	X	X	-	-	-
J. Financial intermediation	X	X	X	-	-
K 70 Real estate activities	X	X	X	-	-
K 71-74 Renting and business activities	X	X	X	X	X
L. Public administration and defence; compulsory social security	X	-	-	X	-
M. Education	X	X	X	X	X
N. Health and social work	X	X	X	X	X
O. Other community, social and personal service activities	X	X	X	X	X
P. Private households with employed persons	X	X	X	X	X
Q. Extra-territorial organisations and bodies	X	X	X	X	X

Annex II

Extract from: I S I C Rev 3

Tabulation Categories	Division	Description
E		ELECTRICITY, GAS AND WATER SUPPLY
	40	ELECTRICITY, GAS, STEAM AND HOT WATER SUPPLY
	41	COLLECTION, PURIFICATION AND DISTRIBUTION OF WATER
F		CONSTRUCTION
	45	CONSTRUCTION
G		WHOLESALE AND RETAIL TRADE; REPAIR OF MOTOR VEHICLES, MOTORCYCLES AND PERSONAL AND HOUSEHOLD GOODS
	50	SALE, MAINTENANCE AND REPAIR OF MOTOR VEHICLES AND MOTORCYCLES; RETAIL SALE OF AUTOMOTIVE FUEL
	51	WHOLESALE TRADE AND COMMISSION TRADE, EXCEPT OF MOTOR VEHICLES AND MOTORCYCLES
	52	RETAIL TRADE, EXCEPT OF MOTOR VEHICLES AND MOTORCYCLES; REPAIR OF PERSONAL AND HOUSEHOLD GOODS
H		HOTELS AND RESTAURANTS
	55	HOTELS AND RESTAURANTS
I		TRANSPORT, STORAGE AND COMMUNICATIONS
	60	LAND TRANSPORT; TRANSPORT VIA PIPELINES
	61	WATER TRANSPORT
	62	AIR TRANSPORT
	63	SUPPORTING AND AUXILIARY TRANSPORT ACTIVITIES; ACTIVITIES OF TRAVEL AGENCIES
	64	POST AND TELECOMMUNICATIONS
J		FINANCIAL INTERMEDIATION
	65	FINANCIAL INTERMEDIATION, EXCEPT INSURANCE AND PENSION FUNDING
	66	INSURANCE AND PENSION FUNDING, EXCEPT COMPULSORY SOCIAL SECURITY
	67	ACTIVITIES AUXILIARY TO FINANCIAL INTERMEDIATION

Tabulation Categories	Division	Description
K		REAL ESTATE, RENTING AND BUSINESS ACTIVITIES
	70	REAL ESTATE ACTIVITIES
	71	RENTING OF MACHINERY AND EQUIPMENT WITHOUT OPERATOR AND OF PERSONAL AND HOUSEHOLD GOODS
	72	COMPUTER AND RELATED ACTIVITIES
	73	RESEARCH AND DEVELOPMENT
	74	OTHER BUSINESS ACTIVITIES
L		PUBLIC ADMINISTRATION AND DEFENCE; COMPULSORY SOCIAL SECURITY
	75	PUBLIC ADMINISTRATION AND DEFENCE; COMPULSORY SOCIAL SECURITY
M		EDUCATION
	80	EDUCATION
N		HEALTH AND SOCIAL WORK
	85	HEALTH AND SOCIAL WORK
O		OTHER COMMUNITY, SOCIAL AND PERSONAL SERVICE ACTIVITIES
	90	SEWAGE AND REFUSE DISPOSAL, SANITATION AND SIMILAR ACTIVITIES
	91	ACTIVITIES OF MEMBERSHIP ORGANIZATIONS N.E.C.
	92	RECREATIONAL, CULTURAL AND SPORTING ACTIVITIES
	93	OTHER SERVICE ACTIVITIES
P		PRIVATE HOUSEHOLDS WITH EMPLOYED PERSONS
	95	PRIVATE HOUSEHOLDS WITH EMPLOYED PERSONS
Q		EXTRA-TERRITORIAL ORGANIZATIONS AND BODIES
	99	EXTRA-TERRITORIAL ORGANIZATIONS AND BODIES