

THE CONCEPT OF SERVICES IN STATISTICS

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## I. INTRODUCTION

1. It has been customary since several decades in macro-economic analyses to refer to services, e.g. to say something about their increasing role in the economy, their relatively lower productivity increase, or their relatively faster price level increase. To say something on services requires the explaining what is covered by the term. Strange enough, there is not yet any internationally agreed definition of services. Until recently many authors considered that the term services is self-explanatory and did not bother with any attempt to define them. Others, while trying to define what they mean by services, however, did do so mostly in an only rudimentary way. Although there are a few ambitious service definitions proposed by different authors, neither of them seems to be generally accepted. The most disturbing consequence of this is that services as referred to by various statistics (e.g. by different countries) have very often different content, and the differences are often quite significant.

2. Recently, the need for having an agreed definition of services, or at least for having sufficient clarification on the differences in concepts which are applied by the various statistics, increased considerably. One of the reasons for this was the increased interest in the acceleration of the development of the service statistics in general. Another, and perhaps even more important factor is the present round of trade negotiations by the GATT, where agreements on liberalization of the international trade in services are envisaged. There were explicit requests made by the GATT to the United Nations Statistical Office and to other international organizations for improving statistics on trade in services, including the conceptual clarification of services in general, and in the context of international trade in particular.

3. Whatever definition on services will be adopted, it has to be accommodated into the existing systems of statistics. Primarily, service statistics should be as consistent as possible with the national accounting system, the latter being considered as the most important tool for integrating economic statistics. Therefore, first those elements of the service definition will be examined, which are connected with the System of National Accounts (SNA) definitions. However, SNA does not define services as such (as

distinguished from goods) and, therefore, other elements of the services definition are to be examined as well. Furthermore, trade in services definitions have to be accommodated with existing statistics on international trade, and these aspects also require consideration.

## II. THE CONCEPT OF SERVICES: REQUIREMENTS OF THE SNA DEFINITIONS

4. SNA does not define services, but has a very elaborated definition on "goods and services", and this has a number of implications on the service definition, if consistency between the SNA and service statistics is to be preserved. What SNA leaves open, i.e. how services should be distinguished from goods will be considered in section III.

5. First, SNA defines the boundary of the production which implies that the results of the activities which are outside the production boundary, cannot be considered as services. This excludes from the concept of services the results of all activities performed within the households (except of the purchased domestic services) e.g. of cooking, cleaning, child care.

6. Secondly, from the definition of the statistical unit, which is the so-called establishment in SNA production statistics, it follows that intra-establishment services will be not recorded, only services which are provided to units outside the producing establishment. For instance, the activities of a garage of a manufacturing factory will not be recorded as services unless the garage is treated as a separate establishment (e.g. because it also sells services to other enterprises). Thus, the size of the service production (its share in the total production or value added) depends to some extent, on conventions made by statisticians on whether or not a given entity is treated as a separate establishment.

7. The SNA clearly separates payments for services from remunerations of the factors of the production (wages and salaries, interest payments, other incomes from property like copyrights, license fees etc.). Only the former is covered by the "goods and services" category, factor payments are treated as primary distributions of income. There are some possibilities that the borderline between services and factor remunerations will be altered to some extent in course of the revision of the SNA. There are views according to

which the treatment of interest in the SNA is to be modified: the total of the interest payments, or at least a part of it (the interest margin) should be treated as payment for services. Modifications were proposed also in respect of the treatment of license fees: some of them have the character of a payment for technical advisory services.

8. The SNA distinguishes also payments for services from unrequited current transfers, like compulsory fees, fines, penalties. The dividing line is drawn on the basis to which extent the payment has a contractual or quid pro quo character: television and radio licence fees, parking fees, highway and bridge tolls e.g. are classified as payments for services, while passport fees, airport duties, payments for driving licences are treated as unrequited current transfers and thus excluded from the category goods and services.

### III. THE DISTINCTION OF THE SERVICES FROM GOODS

9. As already mentioned, SNA delineates goods and services from other categories but does not distinguish goods from services. However, there were various attempts by a number of authors to draw this borderline between services and goods and the following review of the various proposals may facilitate reaching an agreement in this respect.

10. Judging from the variety of criteria used for distinguishing goods from services and from the discussions among authors, it seems there is no one single criterion on the basis of which this distinction could be made. Most likely, several criteria have to be applied in this separation, and it seems unavoidable that the theoretical definitions are to be supplemented by examples of various borderline cases, listing whether they belong to services or goods and if possible explaining why this is so.

11. The most frequent criterion proposed: services are intangible, goods are tangible. This holds for most services and goods. However, it is questionable whether the dividing line can be entirely based on this criterion. It is often argued that electricity (which is classified as a good) is intangible. More importantly, there are a number of services the end products of which materialize in some tangible objects, like photos (end products of photographic services), computer tapes (end products of computer

services) or even in a piece of paper (like an insurance policy or an expertise opinion).

12. Services are produced and consumed simultaneously, they cannot be stored. Again, this is true for most cases, but not necessarily true for all cases. There may be a considerable time span between the compilation (production) and utilization of an advisory service.

13. Services cannot be transported/transferred and must be consumed at the place of the production. This may have been true a long time ago, but with the development of the modern information technique this definition does not seem to hold anymore.

14. Perhaps the most widespread definition referred to recently is that by Hill (1977) "A service may be defined as a change in the condition of a person or of a good belonging to some economic unit, which is brought about as the result of the activity of some other economic unit with the prior agreement of the former person or economic unit". The merit of this definition is that it is based more on economic than formal (e.g. transportability) characteristics; nevertheless it does not seem to be able to play the role of the unique underlying theoretical definition of the distinction between services and goods, mainly because of the possibility of different interpretation of what is a change in the conditions of a person or a good. For instance preventive services (e.g. police, firemen, guards) are in fact trying to prevent that a change in the conditions of a good or person should take place.

15. In 1987 Hill complemented his earlier definition by pointing to an important economic characteristic of services: the contact between producer and user of the services. ".... it is inherent in the idea of a service that it should be provided to some economic unit. In this context the verb provide always carries on indirect object as well as a direct object, explicitly or implicitly. This is a marked contrast to goods production where the producer may have no idea who will acquire the goods on which he is working. A farmer may grow crops in complete isolation from his eventual customers, but a teacher cannot teach without pupils." This explanation is very useful to understand the economic characteristics of services (e.g. why service producing units are generally relatively small in comparison with goods

producing units) and by casting light on the treatment of some borderline cases (e.g. why postcards are goods while photos are services). However, again it cannot serve as the unique underlying criterion for the distinction. In a number of cases even in goods producing industries there are similar contacts between the producer and user, e.g. individualized options in specifying car characteristics or purchase of tailor made clothing.

16. The tailor made clothing brings us to another criterion often mentioned in distinguishing goods from services. It is argued by some authors that small alterations of a product, which do not make a new product from the old one should be treated as services; on the other hand large alterations, which create new products from the old ones should be considered as production of goods. On this basis e.g. repairs are treated as services; but tailoring (the production of suits from fabrics) as production of goods. It is recognized also that in a number of cases it is difficult to determine whether an alteration is small or large.

17. It is often argued that services are more labour input intensive and less intermediate input intensive than goods. This, as a general rule, is true; however, this is a characteristic of services rather than a criterion for distinguishing them from goods.

18. There is yet another problem in distinguishing services from goods. Many services (e.g. restaurant services) embody a large portion of goods, and practically all goods embody services. When distinguishing these two categories, similarly to when distinguishing two industries from each other, the deciding criterion should be the final form in which the transaction takes place, without attempting to separate the good elements from service elements. Thus, renting of apartments or serving meals in restaurants should be treated as services in spite of the large goods content embodied in them. On the other hand gramophone records, books are goods although they contain a large service element.

19. It follows from what has been said that the shares of goods and services are not the same in production and in expenditure statistics. While retail trade beyond any doubt is considered a service activity in the production statistics (the trade margin being its gross output), in the expenditure

(consumption) statistics, commodities purchased from trade are treated as goods, including the trade margin embodied in them.

20. In some cases it is difficult to determine whether a service (e.g. the delivery of a good) is a final action of producing that good (in which case it should not be separated from the goods) or an independent activity, converting the delivery to a service. Some borderline examples:

- home delivery of consumer goods
- purchase of take-out meals in restaurants
- customers requested alterations of consumer goods.

21. The most voluminous question from this point of view is the treatment of transportation, insurance etc. in connection of the export and import of goods. Should the payments for transportation and insurance of a given good be treated as payments for services, or as a part of the value of the imported good? This problem boils down to the conventional external trade valuation principles (f.o.b., c.i.f., etc.). It seems, that as a result of the discussions held on the revision of the SNA, the national accounting will accept the same valuation principles that are used in the Balance of Payment, i.e. both exports and imports will be valued at f.o.b. prices. (In the 1968 SNA import was recommended to be valued at c.i.f. prices.) This means that services provided until the "free-on-board" stage will be included in the price of the goods, the services provided after this stage (overseas transportation, overseas insurance, etc.) will be treated as services, even when it is the exporter who covers the cost.

#### IV. SERVICES IN EXTERNAL TRADE STATISTICS

22. Services in the context of external trade statistics ("trade in services") are often interpreted differently from as they are defined in domestic statistics. Two factors may play a role in this: 1.) Since in external trade statistics the concept of merchandise trade (essentially: export and import which passes the customs office) plays a distinctively important role, many economists are inclined to define trade in services as any export or import which is not covered by the merchandise trade statistics. 2.) Since in the present round of GATT negotiations the central issue is not necessarily how much services were exported/imported but rather

now much influence was exercised by the rest of the world on the domestic service sectors, many authors interpret the services in external trade with a wider coverage, including some flows (e.g. interest payments, incomes from intangible assets like license fees, copyrights) which are outside of the SNA "goods and services" category.

23. The first deviation does not cause any conflict with the SNA, but it does not fit into any of the theoretical definitions of services, considered in section III above. Merchandise is not a theoretical concept, it is a pragmatic one, linked to the possibilities of external trade statistics (everything that can be observed by custom authorities). While it is in general true that most of the merchandise are goods, and most of the non-merchandise services, there are a large number of exceptions. For instance, while newspapers in general are goods, subscriptional foreign newspapers and periodicals are excluded from merchandise trade. Or purchases of goods by foreign tourists are also excluded from merchandise trade. On the other hand goods sent abroad for repair are - at least in a number of countries - included in merchandise trade. In all these cases the deciding criterion was whether or not the trade could be observed by customs registration.

24. The fact itself that the non-merchandise trade is a pragmatic and not a theoretical concept is not a necessary reason for rejecting it. Pragmatic concepts may serve useful purposes as well, in this case to get an overall picture on what was exported and imported. However, it may be disturbing to define services differently in the domestic economy and in the external trade. One possibility would be to continue with the observation of the non-merchandise trade but without calling it trade in services.

25. The second deviation mentioned in para. 22 causes conflicts not only with some theoretical concepts of services but also with the SNA as such. Factor remunerations, transfers, direct foreign investments are excluded from the category goods and services, and, therefore, it would be regrettable to cover them by the export and import of services. On the other hand the interest manifested towards the wider concepts reflecting the influence of the rest of the world on the domestic service economy is quite legitimate and room should be given to the application of these enlarged indicators also. One possibility would be to recommend the compilation of these types of



indicators, without calling them, however, services. Thus, the problem may boil down to find the appropriate terminology.

#### V. PARTICULAR BORDERLINE CASES

26. Most of the borderline cases considered in this section relate to distinction of services from goods. In this connection it should be emphasized that it is not only the shape, physical characteristics of the end product which decides whether it should be considered as a good or service (and whether the activity creating it should be considered a goods producing or service activity) but also the transaction involved. The same physical entity may be a good in the context of some transaction but a service in the context of another transaction. A bottle of wine purchased in a shop is a good, but the same bottle of wine if served in a restaurant is a constituent part of a service. Artificial teeth prepared by a laboratorium for a dentist are goods; but the same artificial teeth put into the mouth of a patient by the dentist are constituent part of a service. Consequently the teeth production by the laboratorium is a good producing activity, however, if the same is done by the dentist himself it is a service producing activity.

#### Processing

27. When alterations of goods are made without a change of ownership the deciding criterion seems to be whether the processing results in substantial physical changes or not (is there a new good produced from the old, or is only the old good altered); in the former case the activity is a good producing, in the latter it is service rendering. On this basis tailoring (i.e. making of suits from fabric owned by the customer is to be treated as goods production, while painting, dying of customers' owned goods are services. Where the borderline is between substantial and non-substantial alterations needs some elaboration.

28. While the above principle seems to be easily acceptable in respect of domestic transactions, less clear is the situation when the processing is an external transaction. Though the recommendation of the SNA Expert Group on External Transactions is consistent with the principle described in the preceding paragraph, it is recognized that in many countries the external trade statistics cannot make a distinction according to whether the alteration

of the goods which pass the custom border are substantial or not. In fact, in a number of countries all processing is treated as export and import of services. There are also countries which record all processing on a gross basis in merchandise trade statistics.

### Repairs

29. Repairs do not create new goods from the old ones and, therefore, the general practice, at least in domestic transactions, is to treat them as services. In spite of the fact that many countries seem to follow this principle also in their external trade statistics (i.e., all repairs are excluded from merchandise trade) the SNA Expert Group on External Transactions proposed that a distinction should be made between repairs performed on investment goods and repairs performed on other goods. The value of repairs on investment goods is proposed to be shown as part of the merchandise trade; other repairs should be classified as services.

### Construction

30. Construction produces immovable commodities and this may be the reason why, according to some authors, this industry produces services. The overwhelming majority view is, however, that the end products of the construction industry (buildings, bridges, roads, etc.) are goods, since they have a tangible character, they can be stored, transported, etc.). This seems to be also the practice in national statistics where distinction between goods and services is made.

31. Having accepted that the end products of the construction industry are goods, there still remains a difficult problem on which views and practices seem to differ substantially. Many construction products result from co-operation of several enterprises (establishments) where one of them is the main contractor, the others are sub-contractors. Do the sub-contractors produce goods (together with the main contractor) or do they produce services to the main contractor? If the first alternative is accepted then the value added produced by the construction industry will be virtually goods producing value added. In the other case most of the value added produced by the construction industry will be allocated to services (in spite of the fact that the end products of the construction industry are considered as goods).

Softwares, tapes, books, etc.

32. There are a number of intellectual products whose inputs are very similar to the inputs of services, however, where the end results embodies in some tangible thing. Are these end products services or goods, and are the activities producing them service or good producing activities? As a general rule, the application of the Hill 1987 principle is recommended, referred to in paragraph 15 above. If the end product is produced for a particular user it is a service. However, similar end products produced for mass use (where the producer does not know in advance who the user will be) are goods.

33. Consequently, general software products, which can be used by any user are proposed to be treated as goods. However, software ordered by a customer according to its particular specification is a service. A passport photo made by a photographer is a service, but a photo of an artist which can be purchased like a postcard by anybody in shops is a good. A video-tape recorded for a particular customer at a particular occasion (e.g. wedding) is a service; however a video-tape of a Hitchcock film which can be purchased in shops is a good. Motion pictures, gramophone records for public use are also goods.

34. By the same token books are also goods. This, however, does not imply necessarily that the whole book producing activity consists of goods production only. It can be argued that the author when presenting his/her manuscript to the publisher produces a service, and the goods production starts only in the publishing phase. (If the author published himself/herself the book, the whole value of the book would be allocated to goods production.)

#### Contractual home-workers in manufacturing

35. In a number of countries a significant portion of the production of some manufacturing industries is carried out not within the premises of the enterprises, but in households, whose members are in contractual relationship with the producing enterprise. It is at the discretion of the statisticians whether these relationships are considered as labour-type contractors, or as service producing contracts (as a special type of sub-contraction with self employed persons). In the former case the value added produced in households will be allocated to goods producing, (treating the income of the home-workers

as factor income) in the latter case it will be allocated to services (as payments for non-sector services).

36. On the basis of the information available so far it seems that the majority practice is to treat home workers as employees and not as self employed persons; thus, the value added produced by them is allocated to goods production and not to services. This seems to be justified also on conceptual grounds, since the activities of the home workers are more akin to employee's activities than to entrepreneurial activities.

#### Housing

37. Operational leasing, i.e., the renting of tangible assets (except land) without the ultimate change in ownership is proposed to be treated as service. Financial leasing although it formally looks like a leasing transaction, is proposed to be treated as sale/purchase of goods (merchandises), since the ultimate aim is as a general rule the change in the ownership. This is the recommendation of the SNA Expert Group on External Transactions, and this seems to be the practice in most countries.

#### Authors' fees versus copyrights, advisory fees versus license fees

38. These are the examples for cases where the borderline between services and income from properties may become blurred. A straightforward payment to the author for all rights of publishing is an author's fee, thus, service. However, if the author retains some rights at the time of the first payment (e.g. the right for a second edition) only the first payment will be treated as payment for service, all subsequent payments will be considered as payments for copyrights, thus, as income from property. Similarly, if a technical advisory service in connection with a technology is provided by an expert, this is a service. However, if the same advices are provided in the form of a license, the payments for them are no longer payments for services but transfers (income from property). Whether or not this type of anomalies can be avoided requires further investigation.

## VI. CONCLUDING REMARKS

39. In order to reach an agreement on the definition of services first an agreement on the criteria to be applied is needed. This agreement may consist of a simple list of the criteria, without any ranking among them; however, it may consist also of a hierarchy of the various criteria, distinguishing more important ones from less important ones.

40. Having reached the agreement on the criteria, this automatically solves the allocation of those products which satisfy all services criteria and all goods criteria. However, it leaves open the allocation of those products which according to some criteria are goods, according to some others are services. One possibility would be to list all these borderline cases in seeking agreement whether they should be considered as goods or services. A first attempt for dealing with the borderline cases was section V of the present paper. Another option would be to develop a kind of algorithm which decides whether a transaction is to be classified among goods or services.

41. Special attention should be devoted to the concept of services in the external trade statistics. If possible conceptual differences between services in the domestic economy and services in the external trade should be eliminated. Appropriate changes in the terminology may facilitate the solving of these problems. A note on further conceptual problems of trade in services will accompany the questionnaire on trade in services statistics.