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Thoughts about a Strategy for Service Sector Statistics

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Abstract

The services sectors in Denmark are for the basic variables (as employment, turnover, gross value added) covered by the general register-based statistics produced by Statistics Denmark. This paper argues that the fulfillment of the user needs demands information beyond these general statistics. The paper focus on 8 elements to be included in a future strategy for service sector statistics. The proposed strategy is based on a customer and output orientation.

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1. Introduction

One of the main features of the economic development in Denmark and also in the other Member States of the European Union in the last twenty-five years has been the growing importance of the services sector. This can be illustrated by the development of employment and gross value added in market services compared to the overall economy.

In 1970 employment in market services comprised nearly 35% in Denmark, slightly exceeding the average of approximately 1/3 of total employment for the countries which today constitute the European Union, cf. table 1.1. Since then, employment in market services have risen in all Member States, and in 1993 employment in market services constituted more than 40% of total employment in all Member States except 3, one of them being Denmark.

Table 1.1. Share of market services in total economy by no. of persons employed, 1970-93

Country	1970	1980	1985	1990	1993
B	36.5	42.1	45.3	47.9	48.7[1]
DK	34.5	34.1	34.1	35.6	36.2
D	30.4	34.1	35.8	37.9	40.6
E	n/a	37.4	36.3	38.4	40.8
F	30.2	35.2	37.2	40.5	40.9
Irl	n/a	n/a	32.2	32.1	n/a
I	29.0	34.0	40.2	42.3	43.5
L[3]	35.7	43.7	48.5	51.9	54.2[1]
NL	41.5	47.3	50.7	53.3	55.5
P	n/a	23.8	24.9	28.0	27.3[1]
UK	36.8	41.8	46.4	51.0	57.1
A	n/a	n/a	36.6	39.5	41.2
FIN	n/a	32.1	33.4	36.1	35.7
S	42.1[2]	45.5[2]	48.51[2]	51.6	55.1

1. 1992
2. National data.
3. Number of employees.

Source: Eurostat, National Accounts

Also when measured by gross value added at factor costs, market services' share of total economy has increased rapidly. Actually, market services is more important in the total economy considering value added instead of employment. Measured by share of total gross value added, Denmark had the second largest market services sector in 1970 of the 15 countries. But Denmark experienced the smallest growth of all countries in the period, and the share of market services in the total economy in 1993 in Denmark was smaller than in most other countries, cf. table 1.2.

Table 1.2. Share of market services in total economy by gross value added (factor costs) , 1970-93

Country	1970	1980	1985	1990	1993
B	43.0	47.3	50.7	53.7	56.1
DK	43.8	42.9	44.6	46.4	46.8
D	35.6	41.9	44.8	46.6	50.1[1]
GR	39.0	37.8	37.3	39.6	44.8
E	37.5	42.3	44.0	44.6	48.8
F	40.4	44.2	46.4	49.7	50.8[1]
Irl	35.4	37.6	38.0	41.8	42.4
I	40.1	44.1	48.2	50.5	52.8
L[3]	33.4	46.6	57.7	54.6	59.9[2]
NL	43.5	48.8	50.4	55.2	58.2
P	n/a	38.8	40.0	41.2	n/a
UK	40.9	41.4	43.6	49.8	53.8
A	n/a	n/a	n/a	n/a	n/a
FIN	n/a	35.2	37.0	39.3	42.5
S	45.4	50.5	52.1	54.6	60.0

1. Gross value added at market prices
2. Estimated from national data
3. National data

Source: Eurostat, National Accounts

The reason for this relatively small sector of market services in Denmark is the relative large public sector in our country. The public sector constituted in the beginning of the 1970'es approximately 18% of the total employment, growing to 33% in 1993.

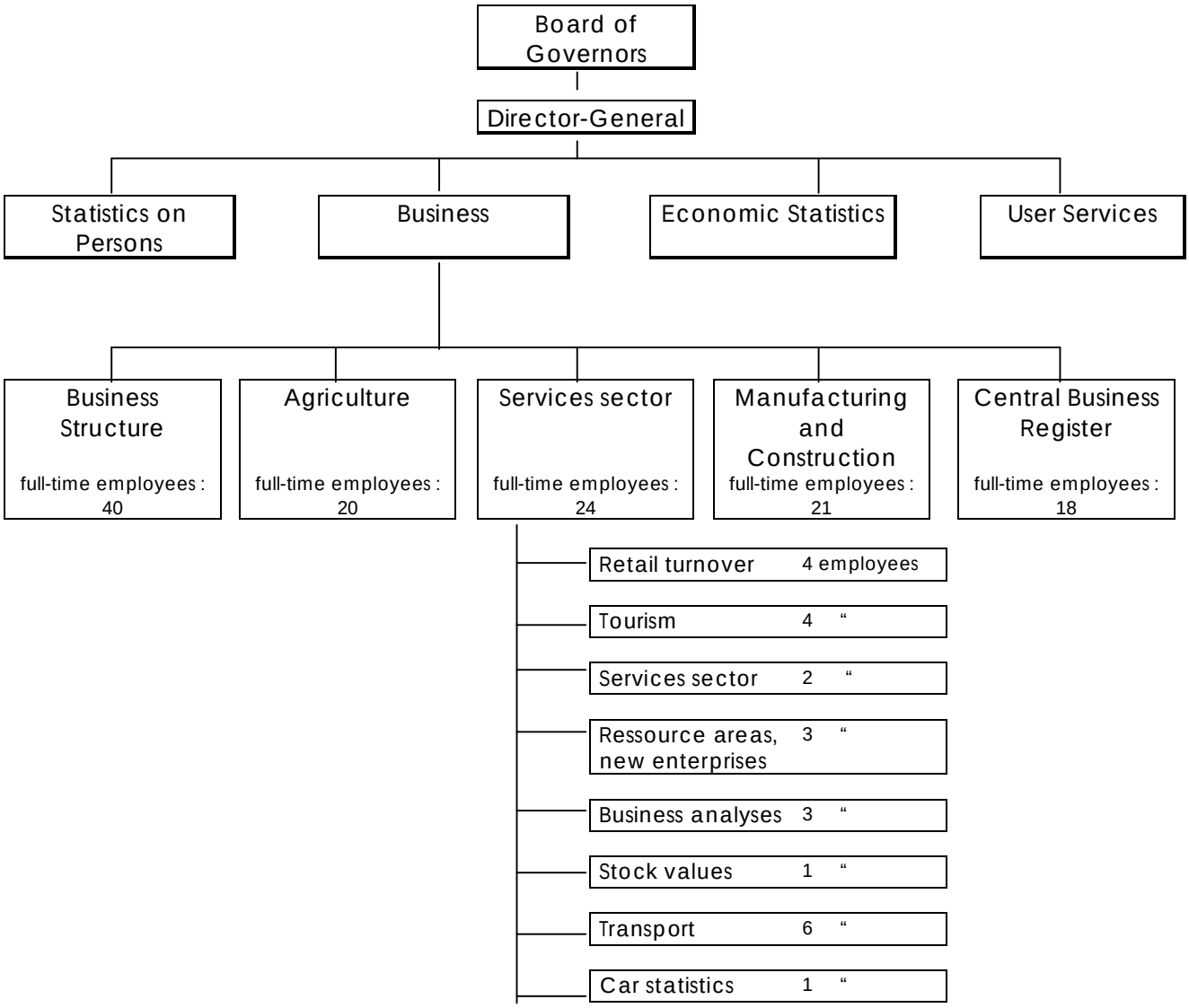
It can be concluded, that the market services is the most important sector in the Danish and the European economy, and thus we are all in the statistical offices faced with the challenge of how to cover statistically this continously growing services sector.

2. The organisation and coverage of statistics on the services sector in Denmark

At the organisational level, Statistics Denmark has anwered on the challenge by establishing a separate division for service statistics as part of the organisational changes in September 1995. The division covers all market services statistics except for financial services. The division altogether employs 27 persons in September 1997, equivalent to 20% of the persons employed in the Directorate for enterprise statistics, cf. table 2.1 for a description of the resources used for different services sector statistics.

The importance of the services sector is also recognised in the strategic planning of Statistics Denmark, as the development of statistics on the service industries is mentioned as one of the five areas of priority. At a first glimpse, it could be argued that this recognition of importance of the services sector

Table 2.1. Organization Chart 1996



is not reflected in the resources allocated for the production of service statistics. But it is important to keep in mind the central role and use of administrative data in Statistics Denmark.

Since the beginning of the 70'es a rising number of business statistics has been produced by utilizing administrative sources. These statistics have been characterized by the large sectoral coverage as all - or nearly all - activities have been covered and the statistics have been published both on an annual and quarterly basis, regarding statistics on turnover and employment. An important element in the Danish business statistics is the Statistical Business Register which has been operating since 1975 and has a total sectoral coverage and also covering all enterprises except minor enterprises with an annual turnover of less than DKK 20 000.

In the second half of the 1980'es the register-based statistics have been enlarged with a general accounts statistics based on the annual tax information from the enterprises. The statistics covers a range a accounting variables such as gross value added and fixed assets. Statistics Denmark has also developed a statistics on new enterprises solely based on registers, ie VAT statistics, business employment statistics and the Business Register.

The general register-based statistics are produced at the Division for Business Structure and therefore not part of the work produced by the 27 persons in the Division of Service Statistics. For special analysis requested by external users as ministeries, research institutions we in the Division for Service Statistics use these statistical registers in different ways, for instance at a more detailed level or in horisontal or vertical integrations with other registers, cf. the conclusion for examples.

Thus it can be concluded that the register-based statistics cover a large number of the basic and most important economic and employment variables, and the sectoral coverage of these register based statistics also includes the services sector.

3. Elements to a strategy for service sector statistics

As a starting point it must be concluded that Statistics Denmark possesses a number of general register-based statistics enabling us to meet the must important needs and requirements of the internal users (National accounts) and external users (ministeries, researchers, etc.) None the less, it is our clear opinion -and experience- that the available statistical data mainly fulfill the needs for macro economic analysis, and *not* the needs for micro analysis frequently put forward by the branch organisations, the industries themselves and the ministeries, for which a further development of the statistics on the services sector is still needed.

Even if the development of the services sector statistics is one of the priority areas in Statistics Denmark, till now no strategy as such has been formulated. The underlying idea behind the proposed elements to a strategy for service sector statistics is to focus on customer and output orientation. By this is meant that focus should be on the user needs of the industry itself (the enterprises and the branch organisations) and on the needs for business policy makers more than an orientation towards the needs

of the national accounts. In the following we shall argue for the most needed elements in a future statistical coverage of the services sector.

1. Sectoral coverage and priorities. The traditional services industries as distributive trade, hotels and restaurants or transport are covered by statistics on the physical output as no.of nights spent or ton kilometers. The problem of poor statistical coverage is especially relevant for the business services which does not belong to the traditionel services activities. The business services consists of activities which are relatively new in their nature and thus not covered by the statistical production of the national statistical institutes. A very useful approach towards a priority of the branches is the grouping of service activities presented by Statistics Canada[1] - even if it is not going to be discussed in this paper.

2. Product information. It is not sufficient information to know the total turnover of for instance the it-services, which we can get from the VAT statistics. In order to understand the development of the branch it is necessary to collect information about the detailed breakdown of the turnover of the it services. How large is the services part compared to the selling of goods as hardware? Which part of the turnover of the branch derives from the selling of services as education and how large a part from the selling of software? We have started to develop such statistics on the business services and we have found problems in using the existing tool for the breakdown of turnover, ie the CPA classification.

3. Supply and demand interaction. For the understanding of the development of the services sector the measuring of the outsourcing process is of importance. The statistics covering the services sector have been focuseds on the supply side but we need more information about the demand for services by the enterprises or households and how this demand influences the development of the services sector. To which extent are transport activities carried out as internal services and what is the reasoning for doing this? The outsourcing of it services is important for understanding the development of the computer services - does the recent development in software change this outsourcing process?

4. The information (technology) activities. These activities are fast growing and complex in their components. We see this as the most urgent challenge for Statistics Denmark to start a methodological work on how and what to measure regarding it activities. As mentioned above the use of it technology on the demand side is of very high priority. Statistics on the information technology activities -or even broader the information society- may not necessarily mean the collection of new characteristica. Of course the it services are in the center of the information society together with telecommunications, audiovisuals and it-manufacturers.

The two factors which characterise the information society, the “horizontal” aspect and the rapid pace of change, give rise to various new user requirements. Economic activities have to be defined differently for the purposes of business policy analyses, for example, from the way in which they have been defined in present classifications of industries/branches. Users obviously need to regroup existing industries into new, cohesive areas of activity. This is perhaps most clearly seen in connection with the information technology branches, which cover a broad spectrum of activities from manufacturing to telecommunications, computer services and the audiovisual sector.

[1] Statistics Canada: Strategy for the Collection of Services Statistics, 1993

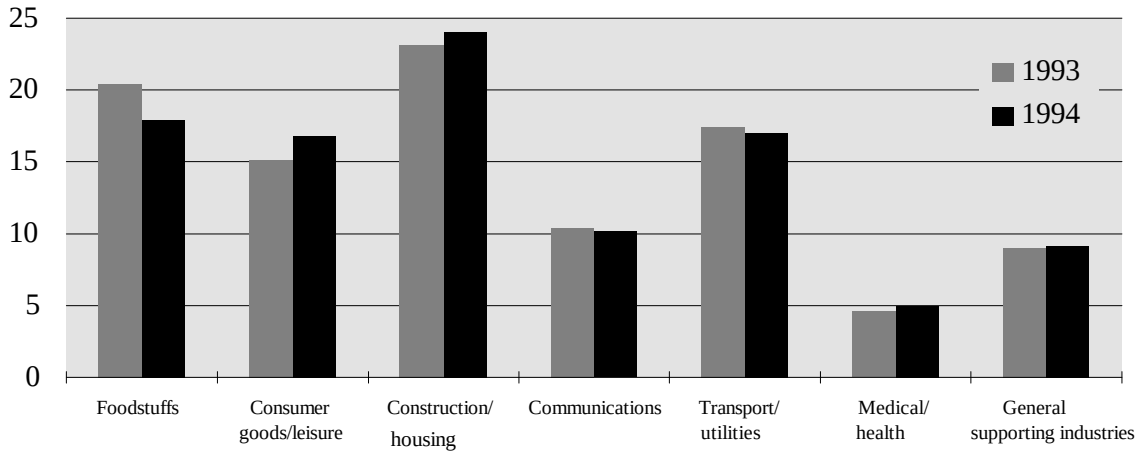
The North American Industrial Classification System (NAICS)[2], is one such attempt to *regroup* the basic classifications of industries. The NAICS has defined an information sector which is different from the other two sectors, the goods-producing and the service-producing. The proposed information sector groups together three types of enterprise: 1) those engaged in producing, manipulating and distributing information and cultural products, 2) those that provide the means to transmit or distribute these products as well as data or communications and 3) those that process data or transactions.

In Denmark, as a result of urgent user requirements, work has been done on identifying clusters of connected branches. The work was carried through in close cooperation between Statistics Denmark and the Ministery of Business and Industry. It was a regrouping of all activity classes into six connected areas, known as *resource areas*, and a residual "horizontal" area consisting of general supporting industries. The seven areas are further broken down into 72 sub-areas, all defined on the basis of the NACE Rev. 1 classes at the 4-digit level. The groups concerned are the following:

1. Foodstuffs, 2. Consumer goods/leisure, 3. Construction/housing, 4. Communications, 5. Transport/utilities, 6. Medical/health and 7. General supporting industries.

Figure 1. Value added in private urban trade, 1993-94, divided by resource area

%



The resource area *"Communications"* covers the industries which supply communication services, both service industries - such as the media, postal services, telecommunications and computer software and printing and communications equipment, including computers. This resource area is thus crucial to the information society and most of the industries are found in the NAICS information sector. However, it also includes production industries which as suppliers operate on the same basic conditions as the information technology industries.

[2] NAICS: Agrement no. 18 US Federal Register Vol. 61 No. 103, pp. 26603 ff, 1996

Statistics Denmark has begun a "sorting out exercise" to work out a delimitation by industry of the information technology field, which is different from the communications resource area primarily in relation to its focus on the information *technology* aspect, i.e. it ignores the more traditional information-supplying industries such as printing (NACE 222), postal activities (NACE 6411) and advertising and market research bureaux (NACE 7440).

The delimitation does not altogether coincide with the North American definition of the information sector, since this definition also includes the goods-producing and certain distributive industries as part of the IT complex. Whereas the NAICS attaches greater importance to the production of information and its transformation into a good, the two Danish delimitations are based on the demand element (resource areas) and the technology aspect (information technology area).

Box 1

1. Development, production and distribution of basic elements, consisting of :	
Software components	NACE part of 72.20
Cables etc.	NACE 31.3
Electronic components	NACE 31.1, 31.2, 31.4, 32.10
Other basic elements	NACE not yet decided
2. Development, production and distribution of parts and equipment, consisting of:	
Applications software	NACE part of 72.20
Hardware-specific applications software	NACE part of 72.20
Computer hardware	NACE 30.01, 30.02, 51.64
Other professional electronic equipment	NACE 31.62,part of 32.20, part of 33.10, 33.20, 33.30, 33.40
Consumer electronics	NACE part of 32.20, 32.30, part of 33.10
Telecommunications equipment	NACE part of 32.20, part of 32.30
3. Development, production and distribution of systems and services, consisting of:	
Professional services linked to applications software and computer hardware	NACE 72.10, part of 72.20, 72.50
Professional services linked to hardware-specific software and other electronic hardware	NACE 72.10, part of 72.20, 72.50
Telecommunications transmission services	NACE 64.20,
VANS and VAS	NACE 72.60

The above mentioned elements are all totally related to or have their starting point in the services activities. Further I would like to mention some elements which are of relevance for all activities, but is especially important for the services sector.

5. Dynamics of the sector. By this indicator we do not only mean the traditional indicators as growth in share of gross value added or employment but special emphasis should be put on the enterprise demographic data as births, deaths or growth of the individual enterprises over a time period. An illustration of the dynamics of the services sector is the sector's share of annual real births of enterprises in Denmark which is 85% - constituting by far the largest share of all sectors in the Danish economy.

6. Employment. In understanding the job creation process we can not only rely on statistical information on number of persons employed. We need much more detailed information on the qualifications of the employment as proposed in the enlarged employment module. We are fortunate in Denmark to have most of the proposed information in our register-based statistics. But as the education/learning of the employees more and more get the character of a continously on-going process the information in the registers about the formal level of qualifications is not sufficient. It is necessary to collect information on training activities in order to supplement the information on the qualifications of the labour force.

As mentioned above the information technology is also extremely important for the way in which we organise enterprises and production. Information technology makes the process of work a mobile process and breaks the physical links between employees and their place of work. The increasing importance of teleworking needs to be reflected in our statistical programme.

At last we would like to mention two elements which are of a more generel character and now primarily related to the services activities.

7. Globalisation. As the national economies are undergoing a rapid process of globalisation in these years, it is of high priority to cover this issue, also for the services sector, which for a number of activities as it-services are highly globalised. Under this heading we put information about traditonal variables as exports and imports, but especially information about nationality of ownership and cross border relations. Especially the last item seems to be of increasing importance in the form of joint ventures, license agreements or other forms of close co-operation across the national borders.

8. Innovation. In many of the activities within the services sector, especially within the knowledge based activities as it-services or engineering services, but also within the transport activities, an intensive innovation process is ongoing. As a consequence of this process the services sector is now included in the new Community Innovation Survey to be carried out during winter 1997/98. The results and methodological experiences from this survey should be awaited before new actions are taken in this field. But we think that this element also is part of a strategy for statistics on the services sector.

4. Conclusion

In this paper we have put forward a number of proposals to be included in the future strategy for services sector statistics in Denmark. In the introduction of these elements we underlined the importance of being user oriented in our statistical production. In the Unit for Service Statistics we are trying to adapt to this attitude as much as possible. This is partly reflected in the relatively large amount of income from service activities, about 5 mio. DKK in 1997, and partly reflected in a number of ad hoc surveys and analysis in which we have participated in the last couple of years. we would like to mention:

1) The development of statistics on new enterprises and entrepreneurs[3]
2) The development of a micro database containing growth enterprises[4]
3) Survey on globalisation, "*From internationalisation to Globalisation*"[5]
4) Survey on innovation and skills
5) The elaboration of statistics on clusters, ie the so-called *resource areas*
6) Detailed analysis of the retail trade in Denmark[6]
7) Detailed analysis of cleaning activities, the socalled "*home services scheme enterprises*"

All these activities have been carried out in co-operation with and financed by users. They reflect some of the urgent and important needs of the users for statistics on the services sector. The experiences learned from these projects are reflected in the elements listed above for the future strategy for service sector statistics in Denmark.

[3] See Peter Bøegh Nielsen, Kjartan Bjørnsson and Søren leth-Sørensen: Economic and Social Performance of New Enterprises and and Entrepreneurs in the Service Sector in Papers and Final Report, Voorburg Group 10th Meeting on Service Statistics, Voorburg 1995, pp 185-202.

[4] See Kjartan Bjørnsson, Helle Månsson and Peter Bøegh Nielsen: The Use of Register-based Statistics in Micro-Analysis. Employment Qualifications and Growth Enterprises in the Services Sector. Paper to be presented at the Voorburg Group Meeting in Copenhagen 1997

[5] See Mette Müller Jensen and Jesper Michelsen: Globalisation of Service Enterprises. Paper to be presented at the Voorburg Group Meeting in Copenhagen 1997

[6] See Kjartan Bjørnsson, Helle Månsson and Peter Bøegh Nielsen: The Use of Register-based Statistics in Micro-Analysis. Employment Qualifications and Growth Enterprises in the Services Sector. Paper to be presented at the Voorburg Group Meeting in Copenhagen 1997