

# Measuring International Organisation of Enterprises and Sourcing of Business Functions

Peter Bøegh Nielsen

Statistics Denmark, Copenhagen, Denmark [pbn@dsk.dk](mailto:pbn@dsk.dk)

Globalisation is of profound and increasing significance to the economic and societal development as goods, services, labour and capital are increasingly less bound by the spatial containers of national states. Consequently, the demands of policy makers for evidence-based information about the impacts of globalisation have been increasing. Traditionally, official statistics have focused on measuring domestic activities; therefore globalisation poses a huge challenge for the statistical offices in terms of reshaping business statistics to a larger focus on measuring cross-border activities and transactions.

The paper focuses on the European survey on International organisation and sourcing of business functions, an initiative taken by the European Statistical System to measure the global organisation of the production processes and the potential delocalisation of jobs. Multinational enterprises and the increased global organisation and fragmentation of their value chains are seen as key factors in these processes.

The remarkable development, especially within information and communication technologies, in the last decades has led to an increased fragmentation of the value chains. This relates both to the production process and the location for carrying out the tasks involved. In order to understand the development it has been necessary to identify and conceptualise a unit of analysis, the business function, at a more detailed level than the enterprise,. The continuous integration of manufacturing and services functions within the same enterprise causes the need for an analytical tool which can unbundle this integration and open the black box of the enterprise and its production chain. Business function are not only a decomposition of the activity of the enterprise but also a bundling of tasks/products (services and goods) either carried out by the enterprises itself or by a supplier. The paper presents a proposal for a classification of business functions to be used in future surveys.

**Key words:** *Globalization, Global Value Chains, International Sourcing, Business Functions*

## 1. Measuring international sourcing

To stay competitive, enterprises organise their production globally and divide their value chains into still smaller parts which are provided by an increasing number of providers located worldwide. International sourcing of business functions is a crucial part of the growing globalisation of the production processes of European businesses and due to the potential job losses has created concern amongst policy-makers in Europe. As only anecdotal evidence about jobs leaving Europe has been available, Eurostat decided in 2006 to launch the first survey on International sourcing in the period 2001 – 2006.

The survey was well received by responding enterprises and showed relative high response rates, also in the countries where the survey was carried out on a voluntary basis. With the economic crisis, the issue of job losses and unemployment became of even higher political concern and it was decided to carry out a new survey on international organisation and sourcing of business functions,

carried out in 15 European countries, in 2012 covering the period 2009 - 2011. The survey results cover nearly 40 000 enterprises with more than 100 persons employed in the fifteen countries.

### Box 1 Definition of International Sourcing

The total or partial movement of business functions (core or support business functions) currently performed in-house or domestically outsourced by the resident enterprise to either non-affiliated (external suppliers) or affiliated enterprises located abroad.

Source: Statistics Denmark, Statistics Finland, Statistics Netherlands, Statistics Norway and Statistics Sweden, *International sourcing: Moving business functions abroad* (Copenhagen, Statistics Denmark, 2008); available at [www.dst.dk/globalisation](http://www.dst.dk/globalisation) and [http://epp.eurostat.ec.europa.eu/statistics\\_explained/index.php/International\\_sourcing\\_statistics](http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/International_sourcing_statistics)

The definition of international sourcing, as used in the European survey on international sourcing, is strict in terms of location, as it is limited to events replacing domestic production with foreign production. On the other hand, it is less restrictive with regard to control, as it includes all types of relocation of production of goods or services, irrespective of whether functions are sourced to an affiliated enterprise or contracted out to an unaffiliated supplier abroad. The definition also includes all types of affiliated enterprises, and it does not distinguish between green-field establishments and existing affiliates.

### Box 2. Definition of insourcing and outsourcing

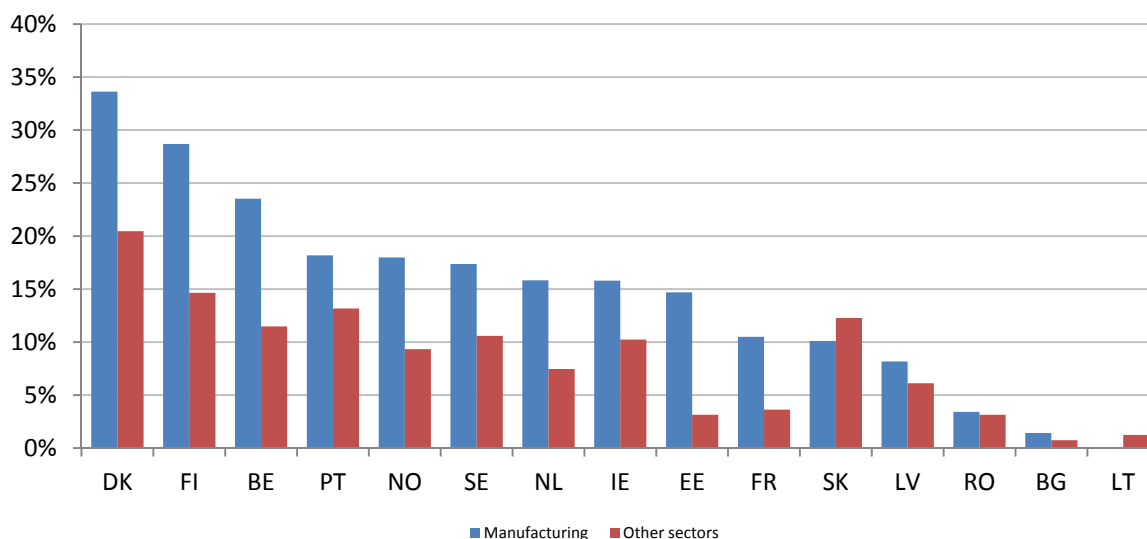
CONTROL		LOCATION	
External production outside the enterprise or enterprise group		Domestic Sourcing (Outsourcing) <i>Production outside the enterprise or group by non-affiliated enterprises but within the compiling country</i>	International Sourcing (Outsourcing) <i>Production outside the enterprise or group and outside the compiling country by non-affiliated enterprises. This involves foreign subcontracting</i>
		Domestic Sourcing (Insourcing) <i>Production within the enterprise group to which the enterprise belongs and within the compiling country</i>	International Sourcing (Insourcing) <i>Production within the group to which the enterprise belongs but abroad (by affiliated enterprises)</i>

Source: Statistics Denmark, Statistics Finland, Statistics Netherlands, Statistics Norway and Statistics Sweden, *International sourcing: Moving business functions abroad* (Copenhagen, Statistics Denmark, 2008); and [http://epp.eurostat.ec.europa.eu/statistics\\_explained/index.php/International\\_sourcing\\_statistics](http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/International_sourcing_statistics)

The survey shows that international sourcing as a business model is applied with very different frequency across Europe. Relatively large share of enterprises in high wage countries such as Denmark (25% of all enterprises with 100 or more persons employed) and Finland (21%) have sourced internationally during 2009-11. At the same time around 10 per cent or less of enterprises with 100 or more persons employed in France, the Netherlands and the new EU member states have carried out international sourcing. International sourcing is driven by manufacturing enterprises. In many countries around two thirds of all enterprises sourcing internationally are in the manufacturing sector while one third belongs to other sectors of the economy, i.e. mainly services.

International sourcing in the manufacturing sector has been most frequent in Denmark (34 % of all manufacturing enterprises with 100 or more persons employed), Finland (29 %) and Belgium (22 %), cf. Figure 1. In accordance with the low overall sourcing levels only few manufacturing enterprises in the new member states are carrying out international sourcing. Again, France shows a pattern different from the other old member states as a relatively low sourcing share can be observed also for manufacturing.

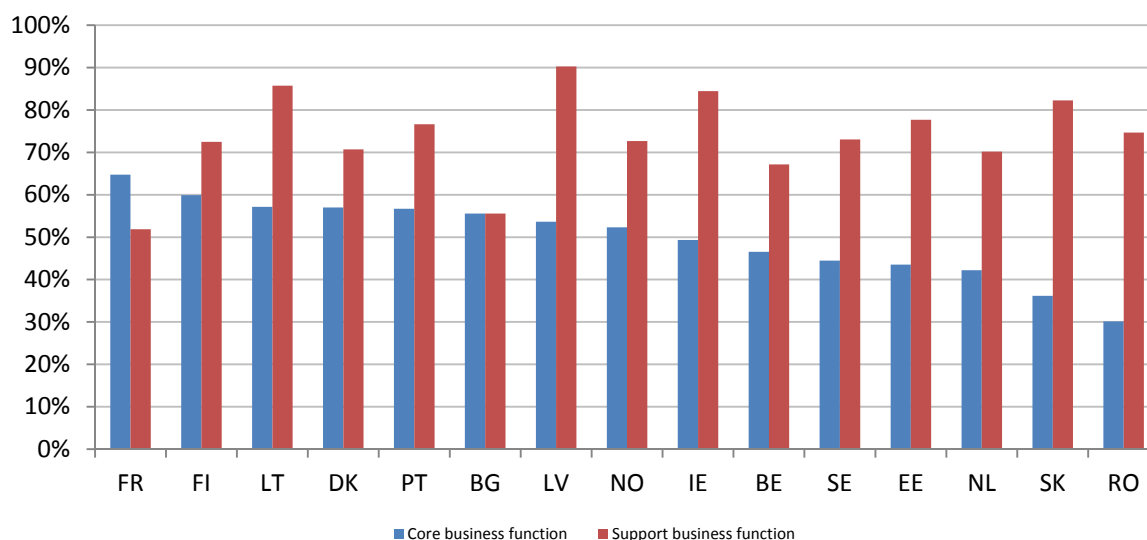
**Figure 1: Enterprises sourcing internationally 2009-11 broken down by main sector. Share of total no. of enterprises with 100 or more employees**



Source: [http://epp.eurostat.ec.europa.eu/statistics\\_explained/index.php/International\\_sourcing\\_statistics](http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/International_sourcing_statistics) (forthcoming)

To understand the impact of international sourcing, enterprises were asked to divide the functions sourced into core (mainly equivalent to the main activity of the enterprise) and support business functions being the services functions for internal use, (e.g., R&D, sales, marketing, IT systems, etc.), see box 3 for definition. International sourcing is originally a model used by manufacturing companies to move their production abroad but especially the increased digitalisation and codification of services has enlarged the sourcing model to services functions and services enterprises as well.

**Figure 2: Share of enterprises sourcing internationally 2009-11 (sorted by core business function).**



Source: [http://epp.eurostat.ec.europa.eu/statistics\\_explained/index.php/International\\_sourcing\\_statistics](http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/International_sourcing_statistics) (forthcoming)

In general, enterprises source more frequently support functions than their core functions. Around 60-80 per cent of enterprises sourcing reported to have sourced support functions. Only in France core functions were sourced more frequently. The importance of sourcing support functions is also

remarkable taking into account that the majority of enterprises sourcing are in the manufacturing sector. This result indicates that the pattern of international sourcing is changing from low skilled production jobs in manufacturing to services functions often performed by a higher skilled work force.

By definition, international sourcing implies job losses in the domestic economy and thus not only a business model for enterprises to become more competitive but also a model of potential concern for policy makers in Europe. One of the purposes of the survey is producing statistical evidence of the employment impact of international sourcing.

Comparing the actual job losses to the employment in the population of enterprises with 100 or more persons employed, the number of jobs lost due to international sourcing in the period 2009-2011 accounts for relatively small shares. Denmark experiences by far the largest share of job losses in relative terms, especially within manufacturing. More than 5 per cent of the jobs in the Danish manufacturing sector in 2008 was moved abroad in the period 2009-2011. The only other country experiencing a job loss of a certain relative magnitude is the Netherlands. In this respect international sourcing is a minor factor in explaining the huge increase in unemployment which Europe has experienced since the economic crisis. But on the other hand, one has to be careful not to underestimate the cumulative effects of a continuous movement of jobs abroad.

## **2. Towards a classification of business functions**

Production of tangible goods is increasingly bundled with services as the above mentioned results of frequent sourcing of support functions from manufacturing enterprises also is reflecting. These support functions are available from suppliers and service providers both within and outside the firm/group and in a variety of locations around the world. Especially the intangible nature of services constitutes a challenge for statistical offices to capture and quantify these arrangements with the survey tools available.

This is the reason for the introduction of a new statistical unit of analysis to supplement the main activity/industry of the firm – i.e., the business function – in the survey on international sourcing. The business function approach includes both the goods- and services-producing activities within enterprises. A concise list of business functions based on the work of Michael Porter (Porter 1985) was developed for the first European Survey on International Sourcing and later adopted by Statistics Canada for the Survey of Changing Business Practices in the Global Economy and in the United States by the 2011 National Organizations Survey (NOS), funded by the National Science Foundation.

The arguments for introducing this new and innovative unit in business surveys are several. Firstly, the continuous integration of manufacturing and services functions within the same enterprise causes the need for an analytical tool which can unbundle this integration and open the black box of the enterprise and its production chain in a more detailed way than the concept of an enterprise or kind of activity unit. Business function are not only a decomposition of the activity of the enterprise but also a bundling of tasks/products (services and goods) either carried out by the enterprises itself or by a supplier.

Secondly, the concept is well understood and found relevant by business managers as they are familiar with this way of thinking from the management literature. The relevance and familiarity of

the concept of business functions make the surveys more user-friendly and easier to understand and therefore answer by the respondents.

Thirdly, the concept accounts for the fact that activities other than the core/primary can be profit centers, either for the outsourcing firm or the supplier and therefore there is a need to collect information about more detailed activities than the main activity. For analysis of sourcing this detailed level of information is crucial for understanding the nature and consequences of sourcing, e.g. the loss of jobs in a sourcing manufacturing enterprise can be jobs very different from production jobs, as the survey results show the R&D function is sourced relatively often. Using the traditional unit of the enterprise this unbundling of the total employment sourced would never have been possible.

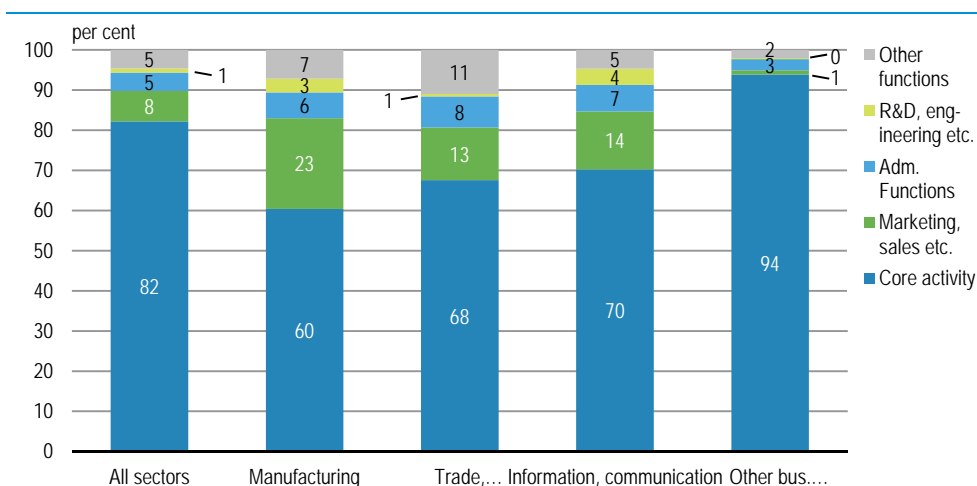
**Table 1. List of Business Functions**

<p>In the European International Organisation and Sourcing of Business Functions survey, six business functions (plus a residual "other" category) were identified using the European Central Product by Activity classification (CPA).</p> <p><b>1) Core business functions:</b></p> <p>Production of final goods or services intended for the market or third parties carried out by the enterprise and yielding income. The core business function usually represents the primary activity of the enterprise. It may also include other (secondary) activities if the enterprise considers these to comprise part of its core functions.</p> <p><b>Support business functions:</b></p> <p>Support business functions (ancillary activities) are carried out in order to permit or facilitate production of goods or services intended for sale. The outputs of the support business functions are not themselves intended to be directly for sale. The support business functions in the survey are divided into:</p> <p><i>2) Distribution and logistics:</i></p> <p>This support function consists of transportation activities, warehousing and order processing functions. "Distribution" is used as an abbreviation for this function.</p> <p><i>3) Marketing, sales and after sales services including help desks and call centers:</i></p> <p>This support function consists of market research, advertising, direct marketing services (telemarketing), exhibitions, fairs and other marketing or sales services. Also including call-centers services and after sales services, such as help-desks and other customer supports services. "Marketing, sales" is used as an abbreviation for this function.</p> <p><i>4) ICT services:</i></p> <p>This support function includes IT-services and telecommunication. IT services consist of hardware and software consultancy, customized software data processing and database services, maintenance and repair, web-hosting, other computer related and information services. Packaged software and hardware are excluded. "ICT services" is used as an abbreviation for this function.</p> <p><i>5) Administrative and management functions:</i></p> <p>This support function includes legal services, accounting, bookkeeping and auditing, business management and consultancy, HR management (e.g., training and education, staff recruitment, provision of temporary personnel, payroll management, health and medical services), corporate financial and insurance services. Procurement functions are included as well. "Administration" is used as an abbreviation for this function.</p> <p><i>6) Engineering and related technical services and Research and Development:</i></p> <p>This support function includes engineering and related technical consultancy, technical testing, analysis and certification. Design services are included as well. In figures and tables "Engineering" is used as an abbreviation for this function. Research and Development includes intramural research and experimental development. R&amp;D is used as an abbreviation for this function.</p> <p>Source: Statistics Denmark, Statistics Finland, Statistics Netherlands, Statistics Norway and Statistics Sweden, <i>International sourcing: Moving business functions abroad</i> (Copenhagen, Statistics Denmark, 2008)</p>
---

The use of business functions is also a useful tool in analyzing the increased servicification of manufacturing enterprises in general and not only related to international sourcing. The new European survey collected for the first time information on the organization of the enterprises and their foreign affiliates. The employees in foreign affiliates of Danish firms work to a considerable extent within the core activity of the Danish enterprise, i.e. the production of goods and services for the market. This is the case for 82 per cent, or 779,000, of the total 947,000 employees in Danish affiliates abroad at the end of 2011.

There are, however, significant differences across sectors in how firms have organised their activities abroad. In foreign affiliates of Danish manufacturing, only 60 per cent of the employees are engaged in the core function, reflecting the large contents of services support functions within manufacturing. In other business services, the corresponding figure is 94 per cent, in information and communication 70 per cent, in trade and transportation 68 per cent.

**Figure 3: Employment in foreign affiliates by business function. By activity of Danish enterprise. 2011**



The remaining 18 per cent of employees in foreign affiliates carry out a number of internal support functions, and here too there are differences across sectors. For instance, in manufacturing 23 per cent are working in marketing and sales etc., compared to only 8 per cent for all sectors. Further, taken as a whole, 5 per cent carry out administrative and management functions. The corresponding figure in manufacturing is 6 per cent. 1 per cent of the employees in all Danish controlled foreign affiliates work with research and development (R&D), engineering, etc. In the foreign affiliates of Danish manufacturing enterprises, the share is more than 3 per cent, and in the foreign affiliates of information and communication enterprises 4 per cent work with R&D, engineering, etc.

## References

- Porter, Michael. 1985. *Competitive Advantage*. New York: Free Press.
- Statistics Denmark. 2008. *Moving Business Functions Abroad*, see [www.dst.dk/publ/InterSourcing](http://www.dst.dk/publ/InterSourcing)
- Sturgeon, Nielsen et al. 2013. *Direct Measurement of Global Value Chains: Collecting Product- and Firm-Level Statistics on Value Added and Business Function Outsourcing and Offshoring in Trade in Value-Added: Developing New Measures of Cross-Border Trade*. Washington: CEPR/World Bank