

RESEARCH ARTICLE

The Contribution of Services to Exports in Emerging Europe Countries

Chiriacescu Bogdan*

Bucharest Academy of Economic Studies, Romania.

*Correspondence Author: E-mail: bogdanchiriacescu@gmail.com

Abstract

This paper aims at estimating the true role services are playing for exports in emerging European countries, starting from recent evidence in the literature that this contribution is underestimated by conventional statistics (balance of payments). This paper follows the line of research that analyses the interconnections between manufacturing industries and services sectors in a new type of economy where value is created by combining the two functions together. The methodology employed uses input-output tables in order to disentangle export flows in value added components by two criteria: origin (domestic or imported) and sector (services or manufacturing). The empirical findings show that in seven out of ten countries in the sample the actual contribution of services to exports is higher than that of manufacturing. Moreover, there is also strong evidence on the servicification of manufacturing.

Keywords: *Competitiveness, Global value chains, Services, Servicification, Value added trade.*

Introduction

Analyzing the competitiveness of a country by looking at its gross exports may pose some challenges, because the fragmentation of production across national boundaries in the last decades has become the prevailing model in the modern economies. This has major implications on how trade flows are perceived, because there must be made a clear distinction between gross exports and the actual value added of an exporting country: the higher the volume of imported intermediaries used to produce exports, the smaller the value added of those exports. Even though at incipient stages, starting with the great collapse of trade registered during Q4 2008 – Q1 2009, there has been a growing strand of literature on understanding the role of value chains that are connecting countries in the production process of goods and services, this being referred to as global value chains. Basically, the focus of research is shifting from trade in goods to trade in tasks, through which value is added along the production chain, by means of capital and labor mobilization, moving to the so-called trade in value added (WTO and IDE-JETRO [1]). In a value added chain framework, an important issue is related to assessing international trade in services, since there appears to be a different picture from what conventional statistics suggest. The main reason is that a wide variety of services have become

indirect contributors to the production process through a wide range of activities (financial, rent, IT, marketing, management, transport, utilities) that bring positive effects in terms of productivity gains. This is also a consequence of the process of production fragmentation in various components that are outsourced and that require an increasing supply of services like administrative, coordination, financial or transportation (Jones, Kierzkowski [2]). Stehrer, Foster and de Vries [3] used a similar approach to Trebler and Zhu [4] to decompose trade flows in value added components and showed that for a panel of 40 countries (UE27 plus other 13 important economies) the role of services in creating value added incorporated in exports is underestimated by gross trade measures, in reality services having an equal (or even higher in some cases) contribution.

In the relatively recent literature on services, these increasingly important trends have become known as servicification of manufacturing, in the sense that within the manufacturing industries there is an increasing demand for services, which are either bought or produced in-house. Moreover, manufacturing is also selling increasingly more services in terms of value added (Swedish National Board of Trade [5]). Fig. 1 is illustrative both for the concept of global value chains and for what servicification of manufacturing means. It

shows that along the production process there are in principle three important phases: i) the pre-production or the concept phase that consists of various activities like research and development, design of products, branding, ii) the actual fabrication process and iii) the post-production stages that refer to the logistics behind the selling of a product, like distribution, marketing or selling services. All this chain forms the so called “smile curve”, that in time went through a process of bending its curvature. This suggests that the first and the last phases of production, which are all associated with services activities, have increased their contribution in terms of value added relative to the actual production process during the last decades, the accent being on the differentiation of products.

Stehrer, Foster and de Vries [3] hold true if using a different approach in the decomposition of exports by value added components [7]. Also, the degree of servicification of manufacturing is investigated for the same sample of countries. The rest of this article consists of four sections. Second section presents literature related issues. The third section details the methodological approach used for estimations and data sources. Section four presents the results obtained and the fifth section concludes.

Literature Review

Chen, Kondratowicz, Yi [8] analyzed US production and exports for both manufacturing and services and found that: i) the share of manufactured exports has increased in the period 1970 – 2000 by around 9 percentage points, and the services share has remained relatively stable, whereas ii) in the same period the share of manufacturing in US GDP has decreased by around 10 percentage points, with an increase in the services share of US GDP of the same magnitude as the decline in manufacturing. So, the situation pointed to a paradox where a country is exporting more of the output that is producing less. The key to understanding this paradox is exactly the inter-linkages between manufacturing and services and the more and more prominent role that services are playing for production and also within global value chains.

Francois and Woerz [9] also analyzed the relative importance of manufacturing and services for international transactions for a panel of OECD countries, and found that while goods dominate direct trade data, services are often the most important activities contributing to final exports. Their findings also suggested that services liberalization was an essential factor in competitiveness boost for technology intensive industries in the OECD countries.

Wolfmayr [10], based on input-output tables data, also estimated that the international service linkages in high-skilled, technology-driven industries for 16 OECD countries had an impact of about 40 percent in explaining the overall increase in the market share during 1995-2008.

Bryson and Daniels [11] elaborate on the strong interaction between manufacturing and services in the new world economy and underline the difficulties of classifying activities as either services or manufacturing. They suggest shifting the perspective from a traditional dichotomous view of the economy (manufacturing vs. services) to an understanding of the way value is created by combining manufacturing and services

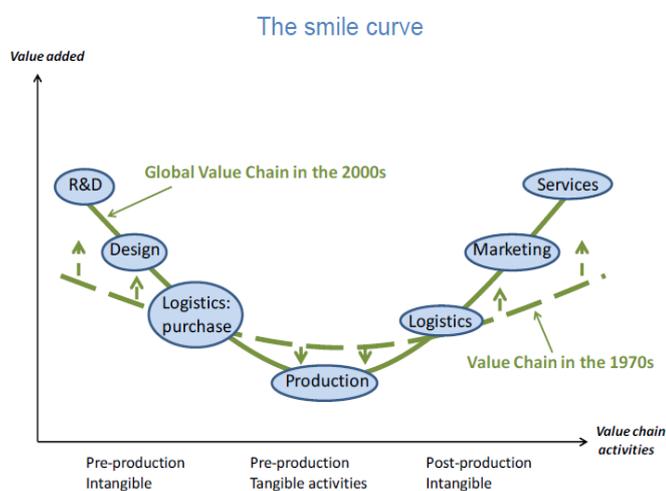


Fig. 1: The inter-linkages between manufacturing and services along global value chains

Source: OECD work on global value chains and trade in value added, Koen De Backer [6], presentation held at COMPNET meeting, Dublin, 13 March 2013

Therefore, when looking at the export of manufacturing goods, it is obvious that these contain value added created in the services sectors, with the opposite situation of value added created in the manufacturing industries being exported by the services sectors also being valid. As opposed to the conventional statistics that measure gross flows of trade, measuring the value added exported by the type of activity, manufacturing or services, would provide the true picture of where actually the value added is originated, which is of more relevance for researchers and policy makers.

The scope of this paper is to analyze the real contribution of services to exports in emerging Europe countries and see if the conclusions as of

functions in what they call the new *manuservice* economy.

A reason behind servicification of manufacturing is that firms are increasingly offering services together with their products in order to better compete in the market, as it seems that demand is less focused on the product itself, and more on the package of services it comes with, this contributing directly to the product differentiation and sophistication. Neely [12] shows that the boundaries between manufacturing and service firms are more and more thin especially in advanced economies. There are two illustrative examples given: i) Rolls-Royce Aerospace does not only sell aero engines, but a complete care package “power by the hour”, where the firm retains the responsibility for risk and maintenance of engines to a much greater extent than it used to do in the past when it only offered spares and repairs, and ii) IBM that is offering more business solutions than it is a hardware provider.

Methodology and Data

Koopman, Wang and Wei (2012) developed a methodology that allows identifying the components recorded multiple times in standard trade statistics, thus providing an exports’ decomposition in value-added terms. There are three main components they identify: i) domestic value added absorbed abroad, which can be either consumed directly in the importing country or used for producing exports for third countries, ii) domestic value added that returns in the form of imports to the country from where it was originally exported, and iii) foreign value added that is imported in order to be used for export production, that is consumed abroad.

For the purpose of this paper, the foreign value added of exports is the most relevant, this consisting of two components: foreign value added that is imported as intermediates in order to be further processed and exported to another country either as final goods or as intermediates.

The source of data used for this paper is WIOD database (World Input Output Database) that contains harmonized input-output tables for 40 countries, including emerging Europe region, and Eurostat for conventional statistics for international trade flows. The last information available for WIOD database is 2009.

Results and Discussion

Fig. 2 reveals that in the case of emerging Europe countries there are important discrepancies for

the share of services in total exports between conventional statistics captured in the balance of payments (blue bars) and the estimates from input-output tables that incorporate the indirect contribution of services to manufacturing. These differences vary between 20% of total exports in Bulgaria and 38% of total exports in Lithuania. There are three groups of countries that display similar patterns: i) the Baltic countries that register levels of services share in total exports above 50%, ii) Bulgaria, Hungary, Romania and Poland that are situated at a share of around 50%, and iii) Slovenia, Slovakia and Czech Republic that are at around 45%.

Therefore, there is clear evidence that conventional statistics are only capturing a part of the actual export of services, which are the direct services. Moreover, the part not captured by official statistics is very important in terms of its magnitude, because taking this part into consideration shows that services sectors are at least as important for exporting activities as the manufacturing industries.

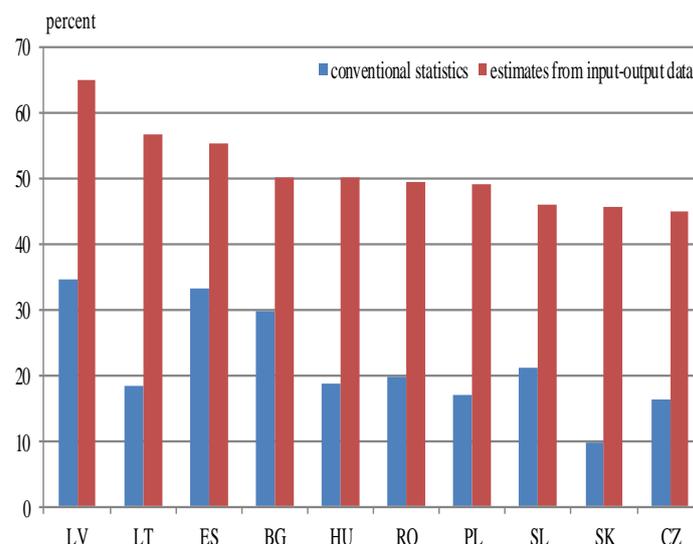


Fig. 2: The share of services in total exports, official statistics from balance of payments versus data from input-output tables (estimates) (% total, 2009)

Source: Authors’ calculations based on WIOD and Eurostat data

Fig. 3 shows evidence for the growing importance of services for export production in emerging Europe countries. In all ten countries (EU10) the contribution of services to total exports recorded an uptrend from 2004 to 2009, increasing on average by around 4%. The decomposition of exports by the origin of value added also displays some interesting features. The structure of domestic value added that goes to exports indicates that the share of services in total exports is higher than of manufacturing in seven countries of EU10 (table 1), the exceptions being

Czech Republic, Slovakia and Slovenia, countries that are among the best positioned in the region when it comes to the degree of participation to the value chains formation in the Central and Eastern European region. Nevertheless, the prevailing evidence points towards the important role of services in generating value added for exports and for economy in general.

As expected, the foreign value added used for export production has a higher content of manufacturing than services in all EU10 countries (table 1). Though, the share of foreign value added content of services is not negligible, with values ranging from 41% to 48% of total foreign value added that is re-exported to other countries.

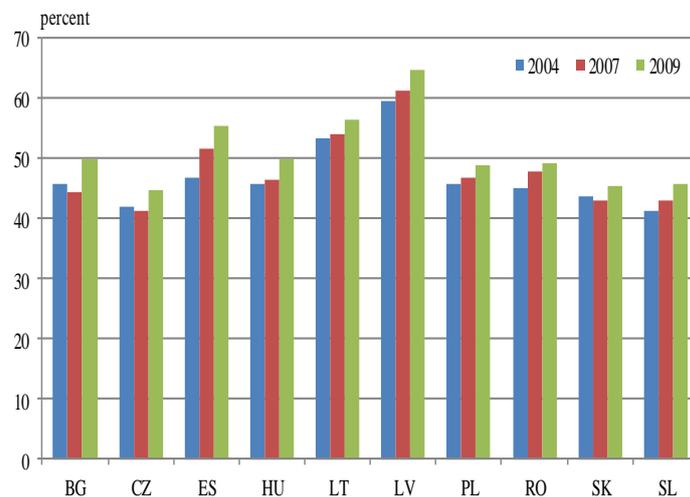


Fig. 3: The evolution of the share of services in total exports, estimates from input-output tables (% total)

Source: Authors' calculations based on WIOD

Table 1: Decomposition of total exports (% total)

Year 2009	Domestic value added		Foreign value added		Total
	Manufacturing	Services	Manufacturing	Services	
Bulgaria	30,1	35,6	19,9	14,4	50,0
Czech R.	32,3	27,1	22,9	17,6	44,8
Estonia	27,4	39,6	17,3	15,7	55,3
Hungary	27,6	29,7	22,5	20,2	49,9
Lithuania	25,2	41,2	18,3	15,3	56,5
Latvia	22,0	53,7	13,2	11,2	64,8
Poland	35,5	35,9	15,6	13,0	48,9
Romania	37,4	38,6	13,4	10,5	49,2
Slovakia	30,3	28,1	24,3	17,2	45,4
Slovenia	33,8	30,0	20,4	15,7	45,8

Source: Authors' calculations based on WIOD

Table 2 evokes the story of servicification of the manufacturing sectors in EU10 emerging economies. At least one third of the value added of the manufactured exports comes from services. The total contribution of services to manufacturing exports is higher than 32% in all countries except one, and more than 35% in five cases, because of the indirect contribution of services to the production of manufacturing products through activities like logistics, financial

services, management, marketing, rent and others. Analyzing the relative contribution of manufacturing and services depending on whether it is domestically produced or imported, it appears that in the first case the manufacturing plays a much more predominant role. The reason is that the imported inputs also include transportation services in their value that make the share of services to be relatively closer to that of manufacturing.

Table 2: Decomposition of manufacturing exports (% total)

Year 2009	Domestic value added		Foreign value added		Total
	Manufacturing	Services	Manufacturing	Services	
Bulgaria	44,1	16,6	23,3	16,1	32,7
Czech R.	39,1	15,7	26,4	18,8	34,5
Estonia	40,9	22,6	21,0	15,5	38,1
Hungary	37,8	12,1	28,0	22,2	34,2
Lithuania	40,5	13,8	25,5	20,1	34,0
Latvia	44,2	23,2	19,3	13,3	36,5
Poland	44,7	23,9	17,6	13,8	37,7
Romania	57,3	13,7	16,7	12,3	26,0

Slovakia	35,8	18,3	27,3	18,5	36,8
Slovenia	41,5	18,8	23,1	16,6	35,4

Source: Authors' calculations based on WIOD

Conclusions

This paper investigates the role of services for exports and for the manufacturing sectors in emerging Europe countries, starting from the existing evidence in the literature on the underestimation of the contribution of services to total exports of a country that is captured in the balance of payments official statistics.

The methodology employed consists in disentangling the export transactions in value added components, by the sector where it is originated, namely manufacturing or services, and also by the origin of value added (domestic or imported). By doing so, we show that differences from standard statistics vary in the range of 20% to 38% of total exports and that this share was on an uptrend in the period 2004 – 2009.

Moreover, the contribution of services to total exports is also higher than that of manufacturing in seven countries out of the ten under analysis, thus confirming recent results in the literature that reached similar conclusions on different sample of countries. There is also strong evidence on the servicification of manufacturing as more than one third of the value added of the manufacturing exports is produced in the services sectors in most countries in the sample.

Acknowledgement

This work was co-financed from the European Social Fund through Sectoral Operational Programme Human Resources Development 2007-2013; project number POSDRU/107/1.5/S/77213 „Ph.D. for a career in interdisciplinary economic research at the European standards.

References

1. WTO and IDE-JETRO (2011) Trade Patterns and Global Value Chains in East Asia: From Trade in Goods to Trade in Tasks. [pdf] Available at <http://www.wto.org/english/res_e/booksp_e/stat_tradepat_globvalchains_e.pdf> [Accessed 26 September 2012].
2. Jones R, Kierzkowski H (2004) International Fragmentation and the New Economic Geography [pdf] Available at <http://graduateinstitute.ch/webdav/site/international_economics/shared/international_economics/publications/working%20papers/2004/HEIWP11-2004.pdf> [Accessed 24 November 2012].
3. Stehrer R, Foster N, de Vries G (2012) Value Added and Factors in Trade: A Comprehensive Approach. WIOD Working Paper 7 [pdf] Available at <<http://www.wiod.org/publications/papers/wiod7.p.pdf>> [Accessed 9 October 2012].
4. Treffer D, Zhu S (2010) The structure of facture content predictions. The J. International Economics, 82:195-207.
5. Swedish National Board of Trade (2010) Servicification of Swedish manufacturing. [pdf] Available at <<http://www.kommers.se/Documents/dokumentarkiv/publikationer/2010/skriftserien/report-2010-servicification-of-swedish-manufacturing.pdf>> [Accessed 13 October 2012].
6. De Backer, K (2013) OECD work on global value chains and trade in value added. [pdf] Available at <http://www.ecb.europa.eu/home/pdf/research/compnet/CompNet_Dublin_De_Backer.pdf?5f2562664745bd908a4ae1fa02c39593> [Accessed 26 March 2013].
7. Koopman R, Wang Z, Wei S (2012) The Value-added Structure of Gross Exports and Global Production Network. [pdf] Available at <<https://www.gtap.agecon.purdue.edu/resources/download/5839.pdf>> [Accessed 21 August 2012].
8. Chen H, Kondratowicz M, Yi K (2005) Vertical Specialization and three facts about US international trade. [pdf] Available at <<http://web.cenet.org.cn/upfile/73638.pdf>> [Accessed 9 October 2012].
9. Francois J, Wörz J (2008) Producer Services, Manufacturing Linkages. Trade. J. Competition, Industry and Trade, 8 (3):199-229.
10. Wolfmayr Y (2008) Producer Services and Competitiveness of Manufacturing Exports. FIW Research Report no. 009 / Export of Services. [pdf] Available at <<http://www.fiw.ac.at/fileadmin/Documents/Publikationen/fiwstudie9.pdf>> [Accessed 6 December 2012].
11. Bryson J, Daniels P (2010) Service worlds: the services duality and the rise of the manuservice economy. In: P. Maglio, C. Kieliszewski and Spohrer, J., Editors, The handbook of service science, Springer, Berlin, 79-106.

12. Neely A (2008) Exploring the financial consequences of the servitization of manufacturing. *Operations Management Research*, 1:103-18.