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Single European Market after Brexit[1]

Introduction

The Internal Market of the European Union is a fundamental project and, nowadays, the only common achievement recognised as a backbone of the EU integration by all Member States. Although, there were some provisions concerning four traditional freedoms in the Treaty establishing the European Economic Community, and some liberalisation processes had been launched already in the 1970s. and 1980s, the most important steps towards a single market were taken in the 1990s and 2000s. While at the beginning of the setting up of the process traditional barriers in trade in goods were eliminated (customs duties and quantitative restrictions), the rest of them (physical, technical and fiscal ones) were also lifted, or at least substantially reduced as the Internal Market was established in 1993.[2] Substantially different situation has been observed in free movement of services. The Service Directive adopted in 2006 only slightly liberalised the service market, and further steps taken within the EU were not effective enough.[3]

Therefore, following many announcements, in October 2015 the European Commission issued the new Single Market Strategy. On the one hand, the Commission noted that the EU market has generated new op-

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[2] A.A. Ambroziak, *Handlowe skutki ewolucji prawa swobodnego przepływu towarów. Bilans dwudziestolecia istnienia rynku wewnętrznego UE*, „Studia Europejskie", no. 65/2013, pp. 75–100.

[3] A.A. Ambroziak, *Handlowe skutki ewolucji prawa swobody świadczenia usług. Bilans dwudziestolecia istnienia rynku wewnętrznego UE*, „Studia Europejskie", no. (66)/2013, pp. 55–74.

portunities and economies of scale for European companies that have strengthened industrial competitiveness; it has created jobs and offered greater choice at lower prices for customers. On the other hand, it observed that innovation and global value chains are generating major new opportunities: digitalisation (leading to more efficient production and new, innovative business models) and servitization (offering goods and services merged into smart and clean business offers).[4]

Almost at the same time (after the referendum on 23 June 2016), the process of Brexit has been lunched. This move is of the highest importance and can have a substantial impact upon the EU internal market. First, the UK announced that is not interested any more in all four freedoms of the EU market, especially the free movement of workers (the inflow of economic migrants from Central and Eastern European Countries one of top subjects of pre-referendum discussions was used as a threat of high unemployment in the UK). In response, the EU side is not interested in giving the UK possibility to choose only selected freedoms within the internal market. Therefore, we can expect, that only a free trade regime (instead of the Internal Market, as it is in the case of Norway, Switzerland, Lichtenstein within the European Economic Area) will become the basis for further economic, also trade, relations between both parties. It can reduce presence of the UK business service providers in the EU bringing substantial consequences for both: service and manufacturing sectors.

Second, nowadays, UK is the leader of servitization and new business models among the EU Member States. The phenomenon consists in manufacturers offering their goods in tandem with services. Due to many changes in both customer needs and new techniques and technologies applied by modern producers, the latter consequently strive to transform themselves from industrial manufacturers into products' (goods and service) providers. The former covers new business techniques, such as, e.g., collaborative (sharing) economy, platform, and access economy. Many of the aforementioned new initiatives have been first undertaken by the UK entrepreneurs to later spread across other EU Member States.

Third, the UK is the leader of a group of countries in the EU, which support liberal approach to the Internal Market. It has advocated for further and deeper integration within the Internal Market and, consequently, for the elimination of the remaining obstacles in intra EU trade in both goods and services, and a proper implementation of the Service Directive of 2006. Recently, the UK has strongly endorsed all works in the EU institutions on the service package presented by the Commission in 2017. The

[4] European Commission, *Upgrading the single Market: more opportunities for people and business*, COM(2015) 0550.

UK absence at the EU tables, where Member States and Members of the European Parliament work out the final versions of legislative proposals, a strong and powerful liberal voice in the College of the European Commissioners will die down.

Taking into account the present economic situation in the EU after the crisis of 2008–2010, escalating protectionism among EU Member States, voices in favour of re-industrialization of the EU economy in the traditional style of the 1970s and 1980s, and the British leadership in services and new business models, **the aim of the paper is to evaluate changes in the structure of the EU economy and intra EU trade in the context of Brexit**. To this end we will analyse changes in values and shares of selected sectors directly linked to the EU Internal Market in value added and intra EU trade in 2010–2014. Moreover, in order to grasp potential consequences of Brexit, we will compare data for the EU-28 and the EU-27 (without the UK).

The paper is structured as follows: in the next chapter, as the UK is the leader in services, we will review literature focused on the importance of services to the economy and their relationships with manufacturing sectors. Then, we will explain data limitations and methodology. The following chapter discusses the research results. And, finally, we will draw conclusions and make comments relevant for the future economic policy in the field.

Importance of Services in Economy and Trade

We can observe permanent structural changes in economy and trade since this topic has come to scientists' interest. Each year has brought real and substantive changes in the structure of economic and international trade. New production methods, new energy sources, new products, including goods and/or services derive from innovation-based technological development. The latter is required by the market: in order to benefit from economic activities in the market, entrepreneurs want to monopolise it and abuse their position to eliminate competitors and become the only ones who can offer given goods or services. On the other hand, there are customers in the market, who expect that their requirements and needs will be fully satisfied in terms of quantity, quality, range of products, as well as prices, including costs of use. Consequently, entrepreneurs tend to limit their costs and meet customers' expectations by permanently changing their business models, production lines, design and marketing methods, distribution channels, as well as ways of reaching final users. Therefore, structural changes in economy and trade, if the market is open, are forces that emerge on both sides: entrepreneurs and customers.

The aforementioned changes have always been present. First, before the Industrial Revolution industry existed without industrialists. As Mokyr noted, the stylized fact was that the Industrial Revolution of 1760–1830 witnessed the 'rise of the factory': large firms had to concentrate ownership of workplace, means of work, sources and raw materials in one and the same place. Most firms did not switch abruptly from the domestic system to a factory system, until mechanization and technological complexity had sufficiently expanded. The latter led to more radical changes in production technique, with substantial investment in fixed capital combined with strict supervision and rigid discipline. The phenomenon was largely driven by technology, which determined both the relative costs and the benefits of moving people.[5] Then, we could observe some major structural changes in economy, including shifting away from agriculture to non-agricultural pursuits. Kuznets argued that those changes were triggered by the emergence of modern science as the basis of advancing technology – a breakthrough in the evolution of science that produced a potential for technology far greater than existed previously.[6] Therefore, we can conclude that the process of first industrialization took place from the mid-18th to the early 19th century as a transformation from agricultural age to industrial economy and the most important and powerful element of this period was linked to technological progress.

The Second Industrial Revolution (Technological Revolution), which took place in the second half of the 19th and the early 20thcentury, can be explained primarily by developments that are internal to the advanced economies. These include the combined effects on manufacturing employment of a relatively faster growth of productivity in manufacturing, the associated relative price changes, and shifts in the structure of demand between manufactures and services.[7] Moreover, complementariness between industrializing sectors, which work through market size effects, should be noted: industrialization of one sector raises the demand for other manufactures directly and so makes large scale production in other sectors more attractive.[8]

[5] J. Mokyr, *The rise and fall of the factory system: technology, firms, and households since the industrial revolution*, "Carnegie-Rochester Conference Series on Public Policy", no. (55)1/2001, pp. 2–3.

[6] S. Kuznets, *Modern economic growth: Findings and reflections*, "American Economic Review", no. 64(3)/1973, pp. 248–249.

[7] R. Rowthorn, R. Ramaswamy, *Growth, Trade and Deindustrialization*, "IMF Staff Papers", no. 46(1)/1999, p. 18.

[8] K.M. Murphy, A. Sheifer, R.W. Vishny, *Industrialization and the Big Push*, "Journal of Political Economy", no. 97(5)/1989, p. 1024.

Nowadays, many politicians and economists argue for reindustrialization, primarily due to the decreasing share of industry in the GDP. However, as Rowthorn and Ramaswamy observed, deindustrialization has been caused primarily by factors that are internal to the advanced economies – i.e., by the combined effects of the interactions among shifts in the pattern of demand between manufacturing and services, the faster growth of productivity in manufacturing as compared to services, and the associated fall in the relative price of manufacturing. Moreover, the results of their work show that competition from low-wage producers has had little effect on the overall volume of manufacturing output in the advanced economies.[9] Finally, as it was already explained in previous research, the simplest two questions which arise in this discussion are: 1) if the share of industry in the GDP should increase, a share of what should decrease, and 2) what are the effects on economy and trade of reindustrialization in the context of growing added value and productivity of services.[10] Nevertheless, those who are interested in promoting the manufacturing sector tend to conduct selective industrial policy arguing that the manufacturing sector: a) is the main source of technology-driven productivity growth, b) has been the 'learning center' of capitalism in technological terms, c) has also been the source of organisational innovation and demand for high-productivity activities in other industries, d) has higher tradability than agriculture and especially, services.[11]

It seems, that a discussion on the industry superiority over services and vice-versa is unjustified, while both sectors have always existed in economy, services had not been recognised, defined or measured until the 1990s. As Fuchs observed, during the Industrial Revolution, in goods, most of the output was accounted for by large profit-seeking corporations with very powerful positions of a few of them in the market. In the serv-

[9] R. Rowthorn, R. Ramaswamy, op.cit., pp. 19–20.

[10] A.A. Ambroziak, *Renaissance of the European Union's Industrial Policy*, "Yearbook of Polish European Studies", no. (17)/2014, pp. 37–58; A.A. Ambroziak, *Europeanization of Industrial Policy: Towards Re-Industrialisation?* in: *Europeanization Processes from the Mesoeconomic Perspective: Industries and Policies*, eds. P. Stanek, K. Wach, Cracow University of Economics, Kraków 2015, pp. 61–94; A.A. Ambroziak, *Reindustrialization or servitization: trade tendencies in the European Union internal market*, in: *Unia Europejska wobec wyzwań przyszłości. Aspekty prawne, finansowe i handlowe*, eds. E. Małuszyńska, G. Mazur, P. Idziak, Wydawnictwo Uniwersytetu Ekonomicznego w Poznaniu, Poznań 2015, pp. 225–240; K. Gawlikowska-Hueckel, *Polityka przemysłowa i spójności w obec planów reindustrializacji Unii Europejskiej. Wnioski dla Polski*, "Gospodarka Narodowa", no. 273(5)/2014, pp. 53–80.

[11] H.-J. Chang A. Andreoni, M.L. Kuan, *International industrial policy experience and the Lessons for the UK*, Future of Manufacturing Project: Evidence Paper 4 Foresight, Government Office for Science 2013, p. 12.

ice sector, on the other hand, firms were typically small, usually owner-managed and often noncorporate. However, the process speeded up in the post-war period, when the shift of employment to the service industries has been particularly dramatic.[12] Apparently, this trend was stimulated by post-war trade liberalization, which resulted in an ongoing integration of various national markets, increase in productivity gains in manufacturing, often linked to growth of producer services).[13] It means, that the process of 'industrialisation' of services involved the adoption of a standardised, high-volume, low-margin approach to service provision with hierarchical management, replacing an earlier approach to business based customisation, low volumes and high margins, organised through networks. This transformation began on the US railroads in the late nineteenth century, and spread rapidly to other parts of transport and communication sector before World War I, but was much slower to spread to distribution and financial services.[14]

Taking into consideration influences of services on economy, we can distinguish at least two well-known types of services: affecting goods (broadly speaking manufacturing industry) and persons (e.g. customers). In 1977 Hill described that, the former consist of changes in the physical condition of goods brought about by productive activities such as transportation, cleaning, repair and decoration, while the latter consist of changes in the physical or mental condition of persons, brought by activities such as transportation, surgery, communication, education or entertainment.[15] It seems that the aforementioned linkage to consumer role increase was already described in 1960s: productivity of services can be often affected by the level of honesty of the consumers.[16]

However nowadays, this explanation is not so clear and the boundary is fuzzy, while this same service can be provided to both companies (including manufacturing firms and service providers) and regular customers. Moreover, the role of services should be highlighted as a complement rather than a substitute to the manufacturing process. As Francois developed, the producer services are important to the coordination and control

[12] V.R. Fuchs, *The Growing Importance of the Service Industries*, "Journal of Business", no. 38(4)/1965, pp. 344, 360.

[13] J.F. Francois, *Producer Services, Scale, and the Division of Labor*, "Oxford Economic Papers", no. 42(4)/1990, p. 716.

[14] S. Broadberry, *Market Services and the Productivity Race, 1850–2000: Britain, the United States and Germany*, Cambridge University Press, Cambridge 2007, p. 35.

[15] T.P. Hill, *On goods and services*, "Review of Income and Wealth", no. 23(4)/1997, p. 337.

[16] V.R. Fuchs, op.cit., p. 368.

of specialized production processes.[17] It is also worth noting that recent research suggests that there is interaction between technologically advanced manufacturing and service industries based on the effects and dynamics of national systems of innovation.[18] Also other studies provide evidences that business services offer a positive impact on the rest of the economy;[19] they provide direct inputs into the production of goods; transport, logistics, wholesale and retail trade ease the flow of products between different stages of production and from producers to final customers, while R&D helps improve the quality of products and processes.[20] It is also worth noting that due to the fact that many new tasks of manufacturers cannot be rationally performed inside a manufacturing firm, we can observe an increasing number of tasks provided by external suppliers. However, the scope for improving productivity through in-house specialisation and sourcing of non-core services inputs from outside suppliers depends on the existence of a diversified and competitive services supplier base. Consequently, a country that hosts a well-diversified services sector is likely to develop a comparative advantage in sectors that use intermediate services intensively, that enter the production process and become embodied in the final good.[21] The extent to which knowledge-intensive business services contribute directly and indirectly to satisfying the final demand of manufacturing subsystems is higher in the case of medium/high and high-tech ones than in the case of medium/low and low-tech ones.[22]

Brodberry observed that breaking the aggregate productivity performance down into the three main sectors of agriculture, industry and services, it is possible to show that nowadays services have played a key role in changing patterns of comparative aggregate productivity performance in the most developed countries (the United States, the United Kingdom and Germany). He noted that comparative productivity trends in services, unlike those in manufacturing, do mirror comparative productivity

[17] J.F. Francois, op.cit., pp. 715, 727.

[18] F. Castellacci, *Technological paradigms, regimes and trajectories: Manufacturing and service industries in a new taxonomy of sectoral patterns of innovation*, "Research Policy", no. 37(6–7)/2007, p. 992.

[19] R. Evangelista, M. Lucchese, V. Meliciani, *Business service, innovation and sectoral growth*, "Structural Change and Economic Dynamics", no. 25/2013, pp. 130–131.

[20] H. Nordås, *The Impact of Services Trade Liberalisation on Trade in Non-Agricultural Products*, OECD Trade Policy Papers, No. 81, OECD Publishing, Paris 2008, p. 8.

[21] Ibidem.

[22] D. Circia, D. Palma, *To what extent are knowledge-intensive business services contributing to manufacturing? A subsystem analysis*, "IPTS Working Papers on Corporate R&D and Innovation", no. 2/2012, p. 16.

trends in the whole economy.[23] It seems, that only with the information and communication technology revolution of 1990s, with its return to customised service provision and more decentralised organisation many more developed countries could improve their productivity.[24] It is worth noting that traditionally, services have been regarded as intangible and their consumption indivisible from their production. However, due to the aforementioned technological developments in telecommunications and information technology, the physical proximity requirement in the delivery of services may have been reduced, enhancing the tradability of services.[25] The possibility of large benefits through scale economies is especially present in the class of knowledge- and information-intensive producer services.[26] Many of the intermediate manufacturers and producer services entered into international trade characterised by significant degrees of scale of economies and/or product differentiation, as well as knowledge-intensity. Therefore increasing returns characterise both capital-intensive intermediate manufacturers and knowledge-intensive producer services.[27] Many years later, in much more advanced work Buera and Kaboski documented large scale establishments in manufacturing relative to services, sectoral reallocations of production, closely linked to consumption and the movement of some services in the home production with the spread of manufacturing goods.[28]

Traditionally, services have not been traded internationally because such trade was technically impossible and/or prohibited by domestic regulations. Consequently, the markets for service products have been essentially non-traded, with price and output determined by domestic supply and demand.[29] However, as Hill observed, although goods and services belong in different logical categories, it is worth noting that an important common characteristic of both goods and services is that they must be

[23] S. Broadberry, op.cit., p. 2.

[24] Ibidem, p. 369.

[25] P. Guerrieri, V. Meliciani, *Technology and international competitiveness: The interdependence between manufacturing and producer services*, "Structural Change and Economic Dynamics", no. 16(4)/2005, p. 490.

[26] Ch. van Marrewijk, J. Stibora, A. de Vall, J.-M. Viaene, *Producer services, comparative advantage, and international trade patterns*, "Journal of International Economics", no. 42(1–2)/1997, p. 196.

[27] J.R. Markusen, *Trade in Producer Services and in Other Specialized Intermediate Inputs*, "The American Economic Review", no. 79(1)/1989, pp. 85, 95.

[28] F.J. Buera, J.P. Kaboski, *Scale and the Origins of Structural Change*, "Journal of Economic Theory", no. 147/2012, p. 686.

[29] R.W. Jones, F. Ruane, *Appraising the options for International trade in services*, "Oxford Economic Papers", no. 42(4)/1990, p. 672.

transactable.[30] Consequently, service trade can produce the same equilibrium as commodity trade, but substantial differences exist depending on whether the tradable community is capital or labour intensive. As Melvin found, as a consequence of presence of a comparative advantage in the service sector, a service-exporting country can observe to have a merchandise trade deficit, which should not be seen as a problem.[31]

Moreover, as Jones and Ruane found, opening up trade in either the service factor or the service product can improve economic welfare, unambiguously. This result is independent of the country's relative factor endowments and whether or not it has a technological comparative advantage or disadvantage in services.[32]

As regards trade and production specialisation, Jones and Ruane also noted that when technologies differ across countries, relative factor endowments do not influence trading patterns; technological superiority in services will lead to complete specialization in the production of services, while technological interiority in services results in complete specialization in manufacturing production.[33] Comparative advantage in goods is not only determined by (direct) relative capital-intensities, but also by the number and technology of services. Depending on the relative magnitudes of these effects; a country that is relatively capital-abundant can have a comparative advantage in the labour-intensive good. Consequently, with respect to the welfare effects of trade in goods, according to Marrewijk et.al research, they are always positive for the country that expands its service sector. In other words, the country that faces a contraction of the services sector may lose from trade in final goods. They showed positive welfare results associated with free trade in services and with service technology improvements. Therefore, by policy introducing barriers to entry to protect the interest of inefficient service firms or using non-tariff barriers to shelter the service sector from foreign competition might leave the protected country with an unambiguous welfare lost.[34]

It is also worth noting what Deardoff found, that many services play a critical facilitating role in the international trade of products other than themselves, including both goods and other services: removing barriers to the cross-border provision of trade services can lower their costs (eliminate duplicated fixed costs incurred by service providers from two countries).

[30] T.P. Hill, op.cit., p. 316.

[31] J.R. Melvin, *Trade in Producer Services: A Hecksher-Ohlin Approach*, "Journal of Political Economy", no. 97(5)/1989, pp. 1180, 1195.

[32] R.W. Jones, F. Ruane, op.cit., p. 686.

[33] Ibidem.

[34] Ch. van Marrewijk, J. Stibora, A. de Vall, J.-M. Viaene, op.cit., pp. 216–217.

Moreover, due to nowadays presence of the phenomenon of fragmentation, the more that production process becomes split across locations, with the fragments tied together and coordinated by various trade services, the greater are the gains from reductions in service costs.[35] OECD studies show that until trade costs in services reached a threshold level the trade response is quite modest and consequently structural changes are muted. However, below the threshold, services trade takes off inducing quite significant changes in trade and production patterns.[36] Also Wolfmayr observed a positive and highly significant impact of services, especially internationally linked, on export market shares of manufactured goods.[37]

Guerrieri and Meliciani found that a country's ability to develop a competitive service economy depends on the structure of its manufacturing sector as some manufacturing industries are more intensive users of these services. Moreover, sometimes the same service producers are also intensive users of these producer services.[38] Therefore, the rapid development of producer service leads to cost cuts and efficiency promotion in manufacturing industries.[39]

The post-war expansion of the producer services sector can be explained, in part, by the expansion and integration of internal markets and by the effective integration of markets that has resulted from trade liberalisation. According to Francois, both of these contribute to changes in the extent of the market and to resulting changes in scale and the importance of services in production. Finally, an expanding producer service sector is an important aspect of growth.[40] Moreover, it is worth noting what Fuchs said, that output in services was less sensitive to cyclical fluctuations in total demand and employment was less sensitive to fluctuations in output.[41]

Methodology and Data Limitations

Due to the fact that the EU internal market is a key factor for EU competitiveness, we contrasted both positions and changes in the shares of

[35] A.V. Deardorff, *International Provision of Trade Services, Trade, and Fragmentation*, "Review of International Economics", no. 9(2)/2001, pp. 234, 247.

[36] H. Nordås, op.cit., p. 5.

[37] Y. Wolfmayr, *Export Performance and Increased Services Content in Manufacturing*, "National Institute Economic Review", no. 220(1)/2012, p. 21.

[38] P. Guerrieri, V. Meliciani, op.cit., p. 489.

[39] X. Zhang, *Producer Service and the Added Value of Manufacturing Industries. An Empirical Research Based on Various Industries of Different Countries*, "International Journal of Economics and Finance", no. 1(2)/2009, p. 21.

[40] J.F. Francois, op.cit., pp. 727–728.

[41] V.R. Fuchs, op.cit., p. 367.

selected sectors in value added with their importance and changes in their shares in intra and extra EU trade. However, it should be read bearing in mind that the results may contain certain errors resulting from different classifications and complications in attributing goods and services traded in the internal market to selected sectors which manufacture or provide them. Data concerning value added of selected sectors were broken down by statistical classification of economic activities in the European Union (NACE), data concerning trade in goods were classified according to the Combined Nomenclature (CN), while data concerning trade in services were grouped according to codes of the balance of payments. Using correspondence tables developed by Eurostat, World Trade Organisation and United Nation Statistics Division, for four-digit NACE Rev.2, ISIC, CPC, HS and CN codes or, alternatively, three-digit codes of items of the balance of payments; we correlated trade in goods and services with value added of manufacturing and service sectors.

It is worth noting that some selected categories of producer services (namely financial, communication and business services) have been defined as knowledge- and information-intensive and recognised as providers of strategic inputs to the rest of the economy.[42] Moreover, Guerrieri and Meliciani observed that a country's ability to develop an efficient and dynamic service sector is linked to the structure of its manufacturing sector. In particular, they found that knowledge-intensive industries (office and computer machinery, professional goods, electrical apparatus and radio, TV and communication equipment, industrial chemicals and drugs) are the main users of producer services. Consequently, countries specialised in these industries are in a favourable position for developing a comparative as well as absolute advantage in producer services.[43] Therefore, in this research we decided to analyse only selected sectors from manufacturing and service activities, which are directly linked to: a) real economy (which excludes financial and insurance services) without agriculture, b) manufacturing or c) constitute separate business industries. Moreover, we excluded from our further analysis the mining sector and services not intended to be offered across European borders within the EU internal market, such as: electricity, gas, steam and air conditioning supply, water supply; sewerage, waste management and remediation activities, accommodation and food service activities, publishing activities, real estate activities, other professional, scientific and technical activities;

[42] C. Antonelli, *Localized technological change, new information technology and the knowledge-based economy: The European evidence*, "Journal Of Evolutionary Economics", no. 8(2)/1998, pp. 178–179.

[43] P. Guerrieri, V. Meliciani, op.cit., p. 499.

veterinary activities, public administration, defence, education, human health and social work activities, and arts, entertainment and recreation; other service activities; activities of household and extra-territorial organizations and bodies. Finally, in order to reduce the number of potential errors we aggregated similar or closely interrelated sectors into bigger and broader categories. Consequently, we received twelve manufacturing and fifteen service activities (Table 1) and termed them collectively the Internal Market Business Activities (IMBA).

Table 1. The Internal Market Business Activities

Manufacturing sectors	Service sectors
C10–12 – Manufacture of food products; beverages and tobacco products	F – Construction
C13–15 – Manufacture of textiles, wearing apparel, leather and related products	G – Wholesale and retail trade; repair of motor vehicles and motorcycles
C16–18 – Manufacture of wood, paper, printing and reproduction	H49 – Land transport and transport via pipelines
C19 – Manufacture of coke and refined petroleum products	H50 – Water transport
C20 – Manufacture of chemicals and chemical products	H51 – Air transport
C21 – Manufacture of basic pharmaceutical products and pharmaceutical preparations	H52 – Warehousing and support activities for transportation
C22–23 – Manufacture of rubber and plastic products and other non-metallic mineral products	H53 – Postal and courier activities
C24–25 – Manufacture of basic metals and fabricated metal products, except machinery and equipment	J59–60 – Motion picture, video, television programme production; programming and broadcasting activities
C26–28 – Manufacture of computer, electronic and optical products, manufacture of electrical equipment and machinery	J61 – Telecommunications
C29–30 – Manufacture of motor vehicles, trailers, semi-trailers and of other transpo rt equipment	J62–63 – Computer programming, consultancy, and information service activities
C31–32 – Manufacture of furniture; other manufacturing	M69–70 – Legal and accounting activities; activities of head offices; management consultancy activities
	M71 – Architectural and engineering activities; technical testing and analysis
	M72 – Scientific research and development
	M73 – Advertising and market research
	N77 – Rental and leasing activities
	N79 – Travel agency, tour operator reservation service and related activities
	C33 – Repair and installation of machinery and equipment

Source: Own elaboration.

The above mentioned sectors constitute (IMBA) 48.5% of the total value added of the EU-28 in 2014. In order to distinguish sectors of the highest and the lowest importance to the EU economy, we analysed changes in

their nominal values and shares in value added in the period 2010–2014. Based on the above, we established four groups of economic sectors of the EU economy (Figure 1):

- group 'A', that recorded an increase in the value added above 10% in 2014 in comparison to 2010 and an increase in the intra EU-28 trade,
- group 'B', that noted an increase in value added below 10% and an increase in the intra EU trade above 20%,
- group 'C', that noted an increase in value added below 10% and an increase in the intra EU trade below 20%,
- group 'D', that recorded a decrease in value added in 2014 as compared to 2010.

Then we analysed their position and export dependence in intra EU export, as well as, in order to assess the competitiveness of the above-mentioned sectors, we calculated RCA[44] for intra EU export. Next, in order to grasp the potential consequences of Brexit, we recalculated data for the EU-27 (without the UK) and observed changes in aforementioned indices (Figure 1–3 and Table 2).

Box 1. Index computed in the research

Traditional trade theory postulates that countries should specialize in the production and exports of goods, in which they have comparative advantage. We expressed it by Balassa's Revealed Comparative Advantage:

$$RCA_{inEU,i}^{EU} = \frac{x_{inEU,i}^{EU} \Big/ \sum_{i=1}^{n} x_{inEU,i}^{EU}}{x_{inEU}^{W} \Big/ \sum_{i=1}^{n} x_{inEU,i}^{W}} \quad (1)$$

where:

$x_{inEU;i}^{EU}$ – value of EU intra export of *i* sector

$x_{inEU;y}^{W}$ – value of World export to the EU of *i* sector,

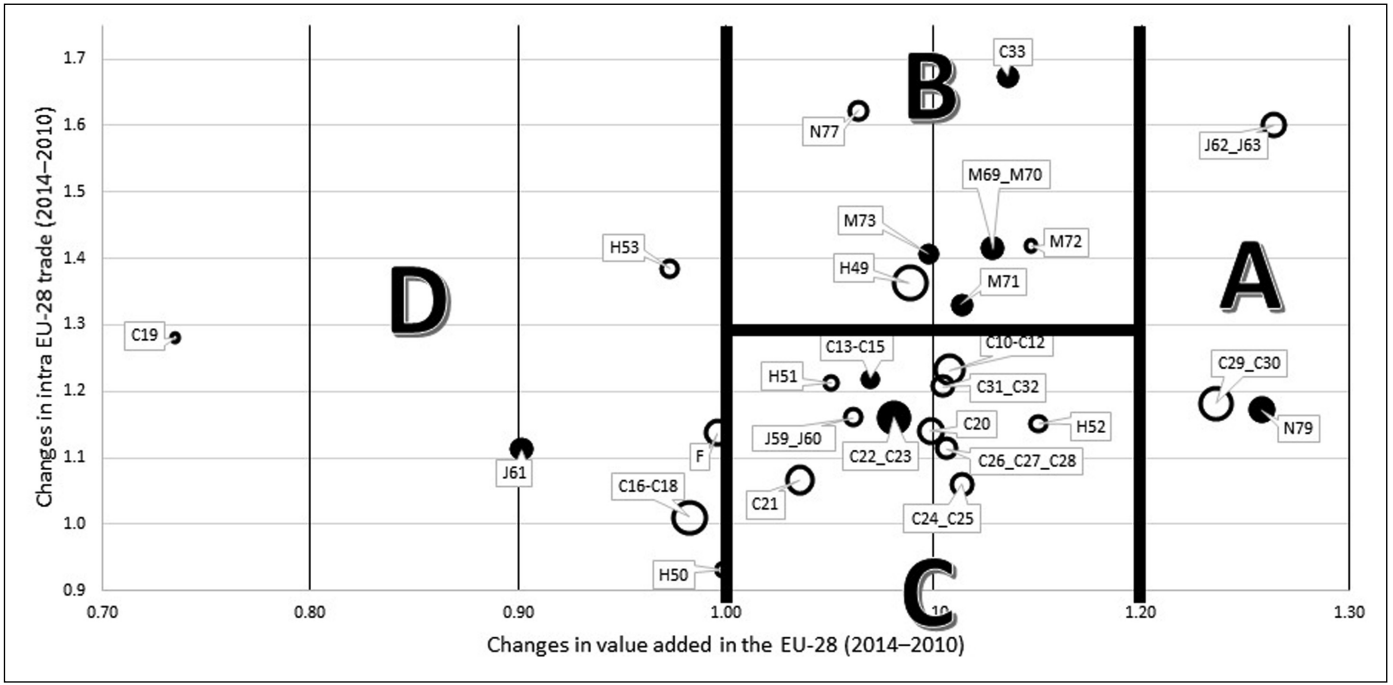
n – number of sectors within the Business Activities of the Internal Market.

Its value above 1 indicates the existence of comparative advantage in intra EU export versus World export, while below 1 means disadvantage in trade.

Source: B. Balassa, *Trade Liberalization and "Revealed" Comparative Advantage*, "The Manchester School of Economic and Social Studies", no. 33(2)/1965.

[44] B. Balassa, *Trade Liberalization and "Revealed" Comparative Advantage*, "The Manchester School of Economic and Social Studies", no. 33(2)/1965.

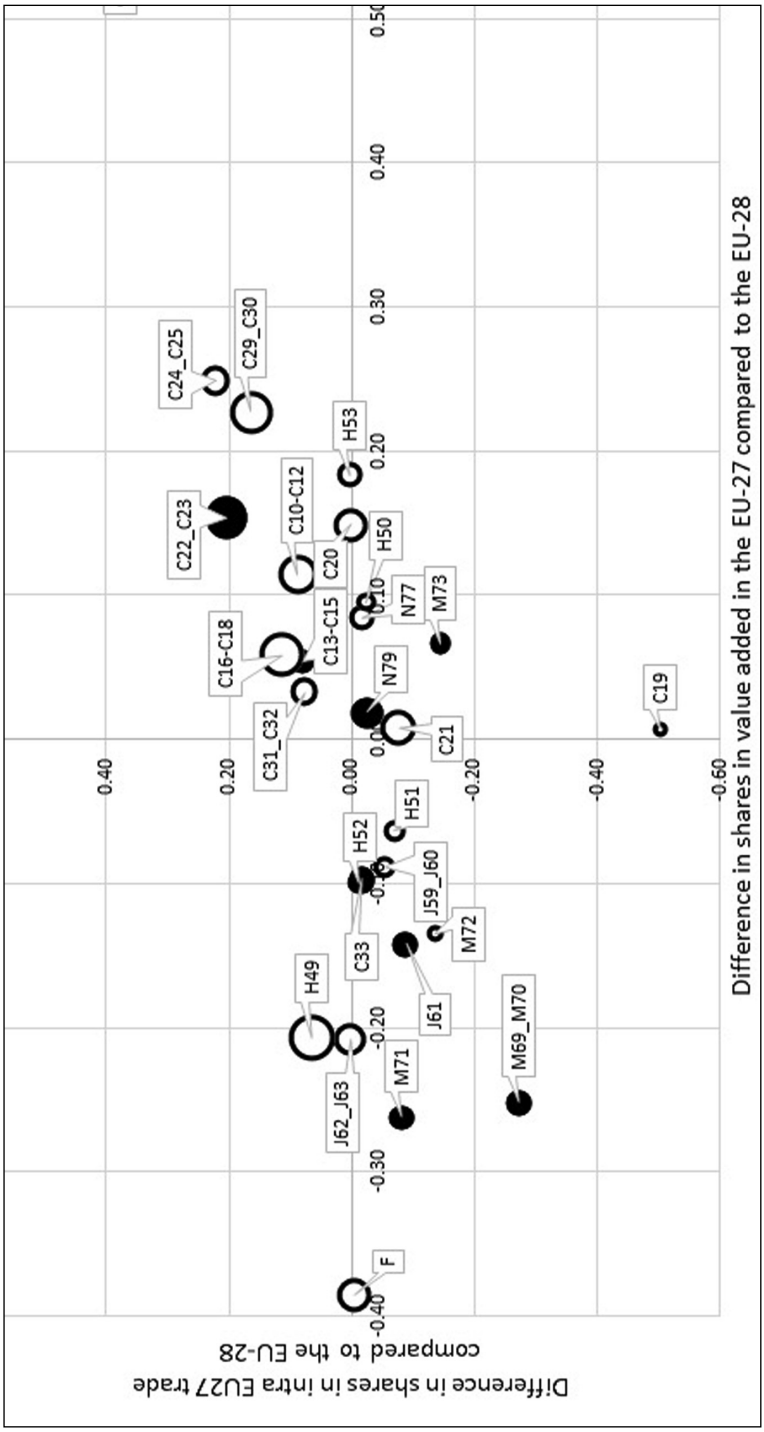
Figure 1. Changes in value added and intra EU 28 trade in 2010–2014



Notes: The size of bubble represents the value of RCA: the higher the RCA, the bigger the bubble. Black bubble: EU-27 RCA index lower than for the EU-28. White bubble: the EU-27 RCA index higher than for the EU-28.

Source: own calculations.

Figure 2. Differences in shares in EU-27 value added and intra EU-27 trade to EU-28 (in 2014)



Notes: The size of bubble represents the value of RCA: the higher the RCA, the bigger the bubble. Black bubble: EU-27 RCA index lower than for the EU-28. White bubble: the EU-27 RCA index higher than for the EU-28.

Source: own calculations.

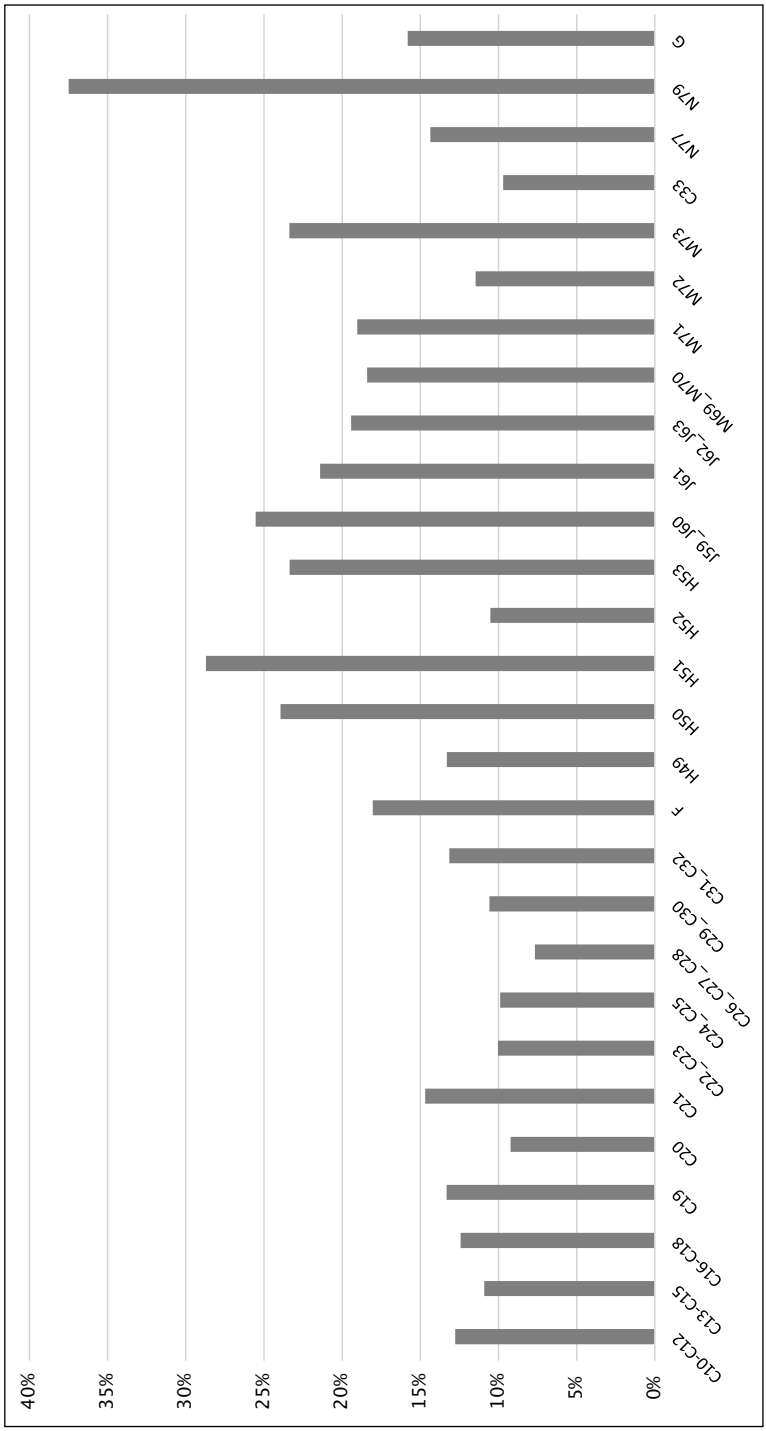


Figure 3. Share of the UK in value added of the EU-28 in 2014

Source: own calculations.

Discussion of Results

Group 'A': Key and perspective sectors of the EU economy

The fastest increase in terms of value added was noted in EU-28 computer programming, consultancy, and information services (J62–63) in the period of 2010–2014. It is worth noting the highest importance of ICT to the EU economy and trade, as Freund and Weinhold found that the Internet is related to growth in services trade.[45] Moreover, development and diffusion of ICT favour and assist growth of business services, which affects the linkages between manufacturing and service industries by increasing the service content of many manufacturing firms.[46] Also Castellacci observed that all industries (manufacturing and services) that are close to the core of ICT-related general-purpose technologies are characterised by greater innovative capacities and have experienced a more dynamic performance.[47]

IT services of both EU-27 and EU-28 maintained a dominant position in the group of fast growing sectors of the IMBA; it recorded an increase in value added respectively by 26% in the period of 2010-2014. Despite this, its overall share in the IMBA value added was still low reaching 2.78% in the EU-28 and only 2.57% without the UK. An opposite observation can be made as regards trade in IT services: the EU-27 recorded an increase in exports in the internal market by 67% (higher by 7 percentage point – p.p. in comparison to the EU-28). **It leads us to a conclusion that the UK did have a massive positive impact on the final score of the IT sector in value added and slightly lower in intra EU trade in the period under research.**

The next fast-growing sector in the EU-28 was travel activities (N79). It recorded a lower increase in value added then the IT sector over the period 2010–2014, however, the UK significance in this sector to the EU economy is huge. The share of the UK in the value added of this sector in the EU-28 reached 37.5%, therefore an increase in travel activities value added was slightly lower in the EU-27 in comparison to the EU-28 and finally recorded 13.1% in 2014, as well as expansion of a share of this sector in total value added of the respectively EU-27 and the EU-28. On the basis of a study on the internal market flows we can observe that the exclusion of the UK from data for the EU slightly decreased, and the EU-27 maintained its competitiveness position as compared to the

[45] C. Freund, D. Weinhold, *The Internet and International Trade in Services*, "American Economic Review", no. 92(2)/2002, p. 236.

[46] R. Evangelista, M. Lucchese, V. Meliciani, op.cit., p. 119.

[47] F. Castellacci, *Structural Change and the Growth of Industrial Sectors: Empirical Test of a GPT Model*, "The Review of Income and Wealth", no. 56(3)/2013, pp. 449, 478–479.

EU-28. **Therefore we can state, that although the position of the UK in the travel activities is important in terms of value added, its impact on the internal market is rather small. It can be due to the fact that the UK travel agencies target third countries' destinations instead of the EU.**

In the group of leading sectors in terms of the share in value added and the intra EU trade, there is one manufacturing of motor vehicles trailers, semi-trailers and of other transport equipment (C29–30). The UK recorded an increase in the car sector value added by 55% in the years 2010–2014, while the EU-28 by only 24%. Taking into consideration that the UK share in total car sector value added of the EU-28 reached 10.6% in 2014, a rise in value added of this sector in the EU-27 was much smaller than in the EU-28 (amounting to only 21%). The importance of this sector in the UK economy is lower in comparison to the EU-28 (shares of motor vehicle manufacturing in the IMBA reaching respectively 3.0% and 4.3%). Therefore data separation for the UK from the EU allows calculating an increase in the share of the sector in the EU-27 in 2014. The role of the UK in the intra EU trade in this sector is also smaller in comparison to other EU Member States. The exclusion of data concerning the UK car manufacturing activities allowed observing an increase in EU-27 RCA index. **Therefore we can state that manufacturing of motor vehicles is much more important to the EU-27 economy then to the UK in terms of both the structure of economy and intra EU trade.**

Group 'B': Important services of the EU economy

The second group of IMBA sectors of the EU-28 consists of those, for which value added increased by less than 10% and intra EU trade increased by over 30% in the period of 2010–2014. Among then, there are four service sectors of fundamental importance to the EU in the context of the UK membership: legal and accounting activities; activities of head offices; management consultancy activities (M69-70), architectural and engineering activities; technical testing and analysis (M71), science, research and development (M72), advertising and market research (M73), rental and leasing activities (N77). Being business services, they play a crucial role in growth and development of companies from manufacturing and service sectors.

The share of the UK in the aforementioned services of the EU-28 ranged 11.5–23.4%, and consequently, eliminating the UK data from the EU-28 data set results in a substantial reduction of an increase in the EU-27 value added, as well as in a decrease in their shares in EU-27 value added as compared to the EU-28 (with the exception for advertising and market research activities, as well as rental and leasing, which recorded

a slight rise). As regards the internal market trade, an exclusion of the UK data from the analysis resulted in substantial decrease in their shares in intra EU trade in comparison to the EU-28. These downs are correlated with drops in RCA indices of the EU-27 trade as compared to the EU-28, which resulted in both values being below 1. **It means that the UK was an important exporter in those service sectors within the internal market not only in terms of value, but also in terms of competitive position *vis-à-vis* third countries.**

Taking into account recent discussions on servitization of the manufacturing sector, it is worth observing consequences of the exclusion of the UK data from the EU-28 data set for repair and installation of machinery and equipment services (C31). The UK noted a 9.7% share in value added of the EU-28 repair and installation sector and a 13.5% share in intra EU-28 trade in it in 2014. A removal of the UK data gives smaller absolute values and changes in shares of this sector in the EU-27 value added and intra EU-27 trade in comparison to the EU-28 data in the period under research. Moreover, the UK exclusion results in deepening the negative level of competitiveness position of the EU in the internal market (EU-27 RCA index 0.836 in 2014). Due to the fact that this sector is one of the forerunners of servitization we can state that a presence of **the UK had a positive influence on the development of new subsectors in the field of repairing, installation and equipment maintenance.**

Group 'C': Important manufacturing sectors of the EU economy

The 'C' group is based (apart from two service sectors (J59–60) – motion picture, video, television programme production; programming and broadcasting activities and (H51) – air transport) mainly on manufacturing industries: manufacture of food products; beverages and tobacco products (C10–12), manufacture of textiles, wearing apparel, leather and related products (C13–15), manufacture of chemicals and chemical products (C20), manufacture of basic pharmaceutical products and pharmaceutical preparations (C21), manufacture of rubber and plastic products and other non-metallic mineral products (C22–23), manufacture of basic metals and fabricated metal products, except machinery and equipment (C24–25), manufacture of computer, electronic and optical products, manufacture of electrical equipment and machinery (C26–28), and manufacture of furniture; other manufacturing (C31–32). They recorded an increase in both value added and intra EU trade by respectively up to 20% and 30% in the years 2010–2014.

The UK share in these sectors in the EU-28 was about half lower than in services, however, still relatively important and ranged from 9.20 to 14.7% of the EU-28 value added. Therefore, for obvious reasons, a deduction of

the UK from the EU-28 data set reduces the EU-28 added value. At the same time, the EU-27 noted much higher shares in the EU-27 IMBA added value in comparison to the EU-28. As regards the EU trade within the internal market all manufacturing sectors, with the exception of the production of pharmaceuticals, record higher shares in the intra EU-27 exports then the EU-28. The above mentioned sector was also the only one, which, due to omitting the UK data, recorded lower RCA index in the EU-27 in comparison to the EU-28. **Therefore we can state, that the UK is not among the leaders of industry producers and traders within the EU-28, though it can play more important role in production and exports in selected advanced sectors, for example manufacture of pharmaceuticals.**

Group 'D': Lagging behind sectors of the EU economy

The fourth group of sectors which recorded a decrease in value added in the years 2010–2014 consists of four service sectors: water transport (H50), postal and courier activities (H53), telecommunication (J61), and construction (F); and two manufacturing of: wood, paper, printing and reproduction (C16–18) and coke and refine petroleum products (C19).

As regards postal courier and telecommunication services, the UK remained in a very strong position in both cases; its shares in respective value added of the EU-28 amounted to, respectively, 21.4% and 23.4%. However, due to the specificity of the UK geographical location, postal and courier activities were much less important to the UK in comparison to telecommunication, therefore, omitting the UK form the EU-28 data set, we can observe an increase in the share of this sector in the EU-27 value added. For the same reasons, the UK position in the internal market was also limited; therefore the shares and RCA of intra EU-27 exports were higher than the EU-28. As regards telecommunication, which is much more important to the UK, a deduction of the UK from the EU-28 data set substantially reduces the share of this sector in the EU-27 value added and in the intra EU-27 export in comparison to the EU-28. Thus, we can observe that **the UK exerted substantial impact upon the growth of the telecommunication sector (although nowadays it is being definitely squeezed out of the market in favour of new technologies, which are covered by IT services).**

It is worth noting the position of construction services, which are classified as less important to the EU-28 economy (a reduction in value added and intra EU trade). On the one hand, a deduction of the UK for the EU-28 data set commenced a serious drop in the share of this sector in the total EU-27 added value (as compared to the EU-28), while, on the other hand, it did not impact the position of this service sector in intra EU-27 trade *vis-à-vis* the EU-28. Therefore it evidences that **the UK was highly im-**

portant for the position of construction services in the EU-28 economy, however, its presence in cross-border provision was limited.

Referring to manufacturing sectors, production of wood, paper, printing and reproduction activities, as well as of coke and refined petroleum products recorded a decrease in added value of the EU-28 in the period 2010–2014. The position of the UK in these sectors also halved in comparison to the aforementioned two service sectors (respectively 12.4% and 13.3% in 2014). Therefore, the exclusion of the UK from the EU-28 data set did not change the overall structure of the EU-27 value added. Nonetheless, the UK has an important position in the EU-28 intra trade in petroleum products, therefore the exclusion of the UK from the EU-28 data set resulted in a serious reduction in the share of the intra EU-27 exports in energy products. An opposite situation occurred in the case of trade in wood and paper products. **Thus, we can observe, that the UK had an important role in intra EU trade in petroleum products, the delivery of which is crucial for all economic operators in the EU.**

Conclusions

The aim of the paper is to evaluate changes in the structure of the EU economy and intra EU trade in the context of Brexit. Although we focused on the UK leaving the EU, it is worth underlining that nowadays, the EU faces an extraordinary mix of challenges, economic and social problems, as well as, unexpected developments in its Member States. On the one hand, the EU should respond immediately to new phenomenon of globalisation, namely servitization. The EU producers, in order to successfully compete with their counterparts from third countries, should offer their goods together with services, which is much more expected by customers driven by the concept of economy of access than the economy of ownership, and which is much harder to achieve by companies external to the EU. In contrary, politicians tend to speak about reindustrialisation, arguing that more traditional industry, more jobs and more innovations, which was a correct approach in the 1970s and 1980s but remains a weird idea in the age of digitalisation and robotics. Moreover, socio-economic problems appeared in the period after the crises of 2008–2009 pushing many Member States to protect their markets and to intervene in the economy, which disturbs competition in the internal market. Therefore Brexit can be observed as an additional problem and an obstacle in ensuring stable growth of the EU economy.

Taking into account the aforementioned phenomena, we analysed changes in values and shares of selected sectors directly linked to the EU Internal

Market in value added and intra EU trade in 2010–2014 and, in order to grasp potential consequences of Brexit, we compared data for the EU-28 and the EU-27 (without the UK). On the basis of our research we can say that the structure of both value added and the intra EU-28 trade was on the path towards the service economy, recognising more economic value added of services than regular goods. This trend was observed in new and innovative services (especially ICT), which are a locomotive for development of all service and manufacturing sectors of modern economy. At the same time, we noticed that business services, which were developed to assist other companies in reducing their costs and making their economic activities easier, also recoded an increase in their shares in both value added and the intra EU-28 trade. As regards manufacturing industries, they recorded slightly slower growth, however, partially thanks to faster service development, including business services, remained relatively strong in the EU economy.

By excluding the UK from the EU-28, we established the EU-27, which revealed reverse tendencies. Taking Brexit into consideration, the most innovative sectors in the EU-28 (including ICT and telecommunication) recorded a decrease in both value added and the intra trade of the EU-27. Similar tendencies were observed in the case of business services, which are aimed at assisting companies in cost reduction and moving towards new business models. At the same time, traditional manufacturing industries recoded an increase in indices under research, especially in shares in value added and intra EU-27 trade. It leads us to the conclusion that Brexit can result in limiting supply of services with the highest added value in favour of expanding regular manufacturing sectors. Unfortunately, considering earlier research results,[48] the tendencies in changes in the structure of the EU economy and intra EU trade, as a result of Brexit, are reverse to those observed in modern economies of well-developed countries (the US, Japan, South Korea).

Going beyond the scope of the research, with some uncertainty, we permit ourselves to state, that, if two assumptions are fulfilled: a) no agreement is reached between the EU-27 and the UK on the freedom to provide services fully compatible with the present rules of the Internal Market and b) British companies will not establish their branches or daughter companies in the Continent, but they will choose to stay in the UK or move to the US and act from outside of the EU, we can expect: i) in the short term, substantial turbulences in manufacturing sectors of the EU-27 due to the lack of strong and well developed services in the EU and, ii), in the long term, the opening up of a very competitive service market dominated by British companies to other companies from the EU-27. However, the above statement needs further research.

[48] A.A. Ambroziak, *Reindustrialization or servitization…*, op.cit.

Table 2. Changes in value added and intra EU trade of the EU-27 as compared to the EU-28

	Added Value				Intra EU-27 Export								
	Change in av (2014–2010)	Difference in change in av between EU-27–EU-28	Share in av (2014)	Difference in share in av between EU-27–EU-28	Change in share in av (2014–2010)	Difference in change in share in av between EU-27–EU-28	Change in intra EU export (2014–2010)	Diff. in chng. in intra EU export (2014–2010) (EU-27–EU-28)	Share in intra EU export (2014)	Diff. in share in intra EU export (2014) (EU-27–EU-28)	Change in share in intra EU export (2014–2010)	Diff. in chng. in share in intra EU export (2014–2010) (EU-27–EU-28)	Intra EU export RCA (2014)	Difference in intra EU export between EU-27–EU-28	Change in intra EU export RCA (2014–2010)	Difference in change in intra EU export between EU-27–EU-28
J62-63	1.2567	-0.01	2.57%	-0.21	0.73	0.04	1.67	0.07	2.81%	0.00	0.85	0.08	1.345	0.001	0.12	0.05
C29-30	1.2068	-0.03	4.55%	0.23	0.56	0.03	1.18	0.00	11.7%	0.16	0.11	-0.03	2.256	0.032	0.29	0.00
M72	1.1484	0.00	2.74%	-0.14	0.13	0.04	1.45	0.03	0.6%	-0.14	0.12	-0.02	0.345	-0.078	-0.04	0.02
N79	1.1312	-0.13	2.22%	0.02	0.03	-0.05	1.17	0.00	6.2%	-0.02	0.01	-0.03	1.247	-0.005	-0.05	-0.01
C33	1.1296	-0.01	0.90%	-0.10	0.09	0.03	1.59	-0.08	0.3%	-0.02	0.09	-0.02	0.836	-0.043	-0.89	-0.04
H52	1.1251	-0.03	0.52%	-0.10	0.21	0.02	1.19	0.04	0.2%	-0.01	0.00	0.00	0.642	-0.047	0.06	0.01
M69-70	1.0959	-0.03	4.64%	-0.25	0.21	-0.04	1.40	-0.02	1.3%	-0.27	0.21	-0.06	0.827	-0.176	0.09	-0.03
C26-28	1.0941	-0.01	7.45%	0.60	0.24	0.10	1.12	0.00	21.4%	0.48	-0.98	0.00	1.019	0.023	0.01	0.00
C20	1.0903	-0.01	2.32%	0.15	0.07	0.04	1.15	0.01	6.8%	0.00	-0.10	0.05	1.449	0.000	-0.04	0.01

		Added Value					Intra EU-27 Export							
		Change in av (2014–2010)	Difference in change in av between EU-27–EU-28	Share in av (2014)	Difference in share in av between EU-27–EU-28	Change in share in av (2014–2010)	Difference in change in share in av between EU-27–EU-28	Change in intra EU export (2014–2010)	Diff. in chng. in intra EU export (2014–2010) (EU-27–EU-28)	Share in intra EU export (2014)	Diff. in share in intra EU export (2014) (EU-27–EU-28)	Change in share in intra EU export (2014–2010)	Diff. in chng. in share in intra EU export (2014–2010) (EU-27–EU-28)	Intra EU export RCA (2014)	Difference in intra EU export between EU-27–EU-28	Change in intra EU export RCA (2014–2010)	Difference in change in intra EU export between EU-27–EU-28
C10-12		1.0887	-0.02	4.38%	0.11	0.12	0.03	1.23	0.00	4.9%	0.09	0.26	0.00	1.915	0.035	-0.02	0.00
C24-25		1.0885	-0.02	4.34%	0.25	0.12	0.01	1.07	0.01	8.6%	0.22	-0.83	0.01	1.134	0.029	0.02	0.00
M71		1.0792	-0.03	6.38%	-0.26	0.05	-0.02	1.26	-0.07	0.6%	-0.08	0.04	-0.04	0.764	-0.106	-0.27	-0.02
C31-32		1.0710	-0.03	1.50%	0.03	0.02	-0.01	1.20	0.00	2.3%	0.08	0.07	-0.01	1.031	0.034	0.08	0.00
C22-23		1.0704	-0.01	2.75%	0.15	0.03	0.04	1.16	0.00	6.6%	0.20	-0.05	-0.01	2.154	0.066	-0.08	-0.01
H49		1.0672	-0.02	22.74%	-0.21	0.03	0.02	1.38	0.02	2.2%	0.07	0.35	0.03	2.518	0.074	0.69	0.04
C21		1.0509	0.01	1.79%	0.01	-0.01	0.07	1.07	0.00	4.3%	-0.07	-0.41	-0.01	1.569	-0.027	-0.27	0.00
N77		1.0411	-0.02	1.42%	0.08	-0.04	0.00	1.71	0.09	0.3%	-0.02	0.09	0.01	0.806	-0.046	0.23	0.02
C13-15		1.0411	-0.03	1.17%	0.05	-0.02	0.00	1.21	-0.01	4.8%	0.08	0.16	-0.04	0.712	0.012	0.00	-0.01

J59-60	1.0081	-0.05	0.82%	-0.09	-0.05	-0.03	1.22	0.06	0.2%	-0.05	0.01	0.01	0.597	-0.189	-0.07	0.07
M73	0.9945	-0.10	1.64%	0.07	-0.06	-0.07	1.38	-0.03	0.5%	-0.14	0.07	-0.03	0.570	-0.183	0.12	-0.05
C16-18	0.9650	-0.02	1.94%	0.06	-0.19	0.01	1.01	0.00	3.1%	0.11	-0.48	-0.02	2.466	0.090	0.02	0.00
H53	0.9537	-0.02	3.63%	0.18	-0.09	0.01	1.45	0.07	0.1%	0.00	0.02	0.01	0.858	0.028	0.12	0.04
F	0.9504	-0.05	10.58%	-0.39	-1.21	-0.24	1.14	0.01	0.4%	0.00	-0.01	0.00	1.425	-0.009	0.16	0.00
H51	0.9294	-0.12	0.55%	-0.06	-0.07	-0.05	1.21	0.00	1.3%	-0.07	0.05	-0.01	0.577	-0.030	-0.08	0.00
H50	0.8869	-0.11	4.71%	0.10	-0.11	-0.05	0.96	0.03	1.3%	-0.02	-0.28	0.06	0.493	-0.008	-0.05	0.02
J61	0.8380	-0.06	1.01%	-0.14	-0.68	-0.12	1.08	-0.03	0.5%	-0.09	-0.04	-0.01	0.796	-0.126	-0.10	-0.02
C19	0.7953	0.06	0.32%	0.01	-0.11	0.04	1.32	0.03	6.1%	-0.50	0.68	0.09	0.270	-0.022	0.02	0.00

Source: own calculations.

References

Ambroziak A.A., *Handlowe skutki ewolucji prawa swobodnego przepływu towarów. Bilans dwudziestolecia istnienia rynku wewnętrznego UE*, „Studia Europejskie", no. 65/2013, pp. 75–100.

Ambroziak A.A., *Handlowe skutki ewolucji prawa swobody świadczenia usług. Bilans dwudziestolecia istnienia rynku wewnętrznego UE*, „Studia Europejskie", no. 66/2013, pp. 55–74.

Ambroziak A.A., *Renaissance of the European Union's Industrial Policy*, "Yearbook of Polish European Studies", no. (17)/2014, pp. 37–58.

Ambroziak A.A., *Europeanization of Industrial Policy: Towards Re-Industrialisation?* in: *Europeanization Processes from the Mesoeconomic Perspective: Industries and Policies*, eds. P. Stanek, K. Wach, Cracow University of Economics, Kraków 2015, pp. 61–94.

Ambroziak A.A., *Reindustrialization or servitization: trade tendencies in the European Union internal market*, in: *Unia Europejska wobec wyzwań przyszłości. Aspekty prawne, finansowe i handlowe*, eds. E. Małuszyńska, G. Mazur, P. Idziak, Wydawnictwo Uniwersytetu Ekonomicznego w Poznaniu, Poznań 2015, pp. 225–240.

Antonelli C., *Localized technological change, new information technology and the knowledge-based economy: The European evidence*, "Journal Of Evolutionary Economics", no. 8(2)/1998, pp. 177–198.

Balassa B., *Trade Liberalization and "Revealed" Comparative Advantage*, "The Manchester School of Economic and Social Studies", no. 33(2)/1965, pp. 99–123.

Broadberry S., *Market Services and the Productivity Race, 1850–2000: Britain, the United States and Germany*, Cambridge University Press, Cambridge 2007.

Buera F.J., Kaboski J.P., *Scale and the Origins of Structural Change*, "Journal of Economic Theory", no. 147/2012, pp. 684–712.

Castellacci F., *Technological paradigms, regimes and trajectories: Manufacturing and service industries in a new taxonomy of sectoral patterns of innovation*, "Research Policy", no. 37(6–7)/2007, pp. 978–994.

Castellacci F., *Structural Change and the Growth of Industrial Sectors: Empirical Test of a GPT Model*, "The Review of Income and Wealth", no. 56(3)/2013, pp. 449–482.

Chang H.-J., Andreoni A., Kuan M.L., *International industrial policy experience and the Lessons for the UK*, Future of Manufacturing Project: Evidence Paper 4 Foresight, Government Office for Science 2013.

Circia D., Palma D., *To what extent are knowledge-intensive business services contributing to manufacturing? A subsystem analysis*, "IPTS Working Papers on Corporate R&D and Innovation", no. 2/2012.

Deardorff A.V., *International Provision of Trade Services, Trade, and Fragmentation*, "Review of International Economics", no. 9(2)/2001, pp. 233–248.
European Commission, *Upgrading the single Market: more opportunities for people and business*, COM(2015) 0550.
Evangelista R., Lucchese M., Meliciani V., *Business service, innovation and sectoral growth*, "Structural Change and Economic Dynamics", no. 25/2013, pp. 119–132.
Francois J.F., *Producer Services, Scale, and the Division of Labor*, "Oxford Economic Papers", no. 42(4)/1990, pp. 715–729.
Freund C., Weinhold D., *The Internet and International Trade in Services*, "American Economic Review", no. 92(2)/2002, pp. 236–240.
Fuchs V.R., *The Growing Importance of the Service Industries*, "Journal of Business", no. 38(4)/1965, pp. 344–373.
Gawlikowska-Hueckel K., *Polityka przemysłowa i spójności wobec planów reindustrializacji Unii Europejskiej. Wnioski dla Polski*, "Gospodarka Narodowa", no. 273(5)/2014, pp. 53–80.
Guerrieri P., Meliciani V., *Technology and international competitiveness: The interdependence between manufacturing and producer services*, "Structural Change and Economic Dynamics", no. 16(4)/2005, pp. 489–502.
Hill T.P., *On goods and services*, "Review of Income and Wealth", no. 23(4)/1997, pp. 315–338.
Jones R.W., Ruane F., *Appraising the options for International trade in services*, "Oxford Economic Papers", no. 42(4)/1990, pp. 672–687.
Kuznets S., *Modern economic growth: Findings and reflections*, "American Economic Review", no. 64(3)/1973, pp. 247–258.
Markusen J.R., *Trade in Producer Services and in Other Specialized Intermediate Inputs*, "The American Economic Review", no. 79(1)/1989, pp. 85–95.
van Marrewijk Ch., Stibora J., de Vall A, Viaene J.-M., *Producer services, comparative advantage, and international trade patterns*, "Journal of International Economics", no. 42(1–2)/1997, pp. 195–220.
Melvin J.R., *Trade in Producer Services: A Hecksher-Ohlin Approach*, "Journal of Political Economy", no. 97(5)/1989, pp. 1180–1196.
Mokyr J., *The rise and fall of the factory system: technology, firms, and households since the industrial revolution*, "Carnegie-Rochester Conference Series on Public Policy", no. (55)1/2001, pp. 1–45.
Murphy K.M., Sheifer A., Vishny R.W., *Industrialization and the Big Push*, "Journal of Political Economy", no. 97(5)/1989, pp. 1003–1026.
New Industrial Policy of the European Union, ed. A.A. Ambroziak, Springer, Switzerland 2017.
Nordås H., *The Impact of Services Trade Liberalisation on Trade in Non-Agricultural Products*, OECD Trade Policy Papers, No. 81, OECD Publishing, Paris 2008.

Rowthorn R., Ramaswamy R., *Growth, Trade and Deindustrialization*, "IMF Staff Papers", no. 46(1)/1999, pp. 18–41.

Wolfmayr Y., *Export Performance and Increased Services Content in Manufacturing*, "National Institute Economic Review", no. 220(1)/2012, pp. 36–52.

Zhang X., *Producer Service and the Added Value of Manufacturing Industries. An Empirical Research Based on Various Industries of Different Countries*, "International Journal of Economics and Finance", no. 1(2)/2009, pp. 21–26.

Key words: EU Internal Market, Servitization, Manufacturing, Intra EU Trade

Abstract

Present economic situation in the EU after the crisis of 2008–2010, escalating protectionism among EU Member States, voices in favour of re-industrialization of the EU economy in a traditional style of the 1970s and the 1980s, and the British leadership in services and new business models are the most important challenges for the future development of the EU Internal Market, as well as for the EU economy, as a whole. Therefore, the aim of the paper is to evaluate changes in the structure of the EU economy and intra EU trade in the context of Brexit. To this end, we will analyse changes in values and shares of selected sectors directly linked to the EU Internal Market in value added and intra EU trade in 2010–2014. Moreover, in order to grasp potential consequences of Brexit, we will compare data for the EU-28 and the EU-27 (without the UK). Our research allows us to conclude that Brexit may result in reduced supply of innovative and business services with the highest added value in favour of higher shares of regular manufacturing sectors within the internal market of the EU (both in value added and intra EU-27 trade). Therefore, after the UK leaves, the EU-27 will lose its competitiveness and a strong position in intra EU trade *vis-à-vis* third countries.