

Comparative Economic Research, Volume 19, Number 3, 2016
10.1515/cer-2016-0018



JOANNA WYSZKOWSKA-KUNA*

Competitiveness Of The New European Union Member States In International Trade In Knowledge-intensive Business Services

Abstract

The aim of this paper is to study and compare the competitiveness of the new EU member states in international trade in knowledge-intensive business services (KIBS).

The first part of the paper presents a definition of KIBS trade, indicators to measure competitiveness in international service trade, and a short review of research in this field. The second part of the study is empirical. First the author carries out an overall analysis of transactions on KIBS trade in the countries involved. Then the competitiveness of the new EU member states in KIBS export is studied (in total KIBS and in each category of KIBS). International competitiveness is measured by export performance, trade balance and the RCA index. The author compares the competitiveness in KIBS exports between the analyzed countries, and tries to answer the question whether it could have been positively affected by their accession to the EU.

The paper uses the WTO database. The analyzed period covers the years 2000–2013, because data on particular categories of ‘Other business services’ have been available only since 2000. The analysis refers to the 12 countries that joined the EU in 2004 and 2007.

Keywords: *international competitiveness, international trade in services, knowledge-intensive business services*

* Ph.D., University of Lodz, Faculty of Economics and Sociology, Department of World Economy and European Integration

1. Introduction

A modern competitive economy is defined as both a service economy and as a knowledge-based economy, which means that knowledge-intensive services should play a key role in such an economy. However, when the issue of international competitiveness is discussed, it is generally considered that the competitiveness in international trade in high-tech goods is its driving force. There are some studies showing that KIBS are an important source of productivity improvement, and thus contribute to improving international competitiveness. There are also some analyses showing their increasing importance in international trade. But generally, the issue remains poorly investigated. The problem discussed in the paper is especially important in the case of the new EU member states, because some emerging economies have become leading exporters in this field.

2. Definition of trade in knowledge-intensive business services

The term “knowledge-intensive” or “knowledge-based” industries refers to those industries which are relatively intensive in their inputs of technology and/or human capital. There are established methods for classifying manufacturing industries according to technology intensity, but classifying service industries according to their knowledge intensity has proved more challenging (OECD 1999).

In this paper WTO data are used. The WTO has no definition of knowledge-intensive services, thus we follow the Eurostat definition. According to Eurostat, on the basis of persons with tertiary education services are classified into: (1) knowledge-intensive services (KIS) and (2) less knowledge-intensive services (LKIS) (Eurostat 2011b). KIS include:¹ Post and Telecommunications; Computer and related activities; Research and development; Water transport; Air transport; Real estate activities; Renting of machinery and equipment without operator and of personal and household goods; Other business activities; Financial intermediation, except insurance and pension funding; Insurance and pension funding, except compulsory social security; Activities auxiliary to financial intermediation; Education; Health and social work; Recreational, cultural and sporting activities.

¹ Due to the revision of NACE (Rev. 1.1 into Rev. 2), the definition of KIS has changed (Eurostat 2011a). The definition used in this paper is consistent with NACE Rev. 1.1, as it is more in line with the classification of services in the balance of payments for the analyzed period (BPM5).

Of particular interest within the group of KIS are knowledge-intensive *business* services (KIBS). Eurostat contains no official definition of KIBS, but in the literature KIBS are defined as knowledge-intensive services provided for other business firms (Schricke, Zenker, Stahlecker 2012, p. 6). Thus we can say that KIBS include all KIS, except Education; Health and social work and Recreational, cultural and sporting activities, which are services destined for consumers.²

In accordance with the definition of knowledge-intensive services presented above, statistics on output, employment and business activities have been collected. We should note that statistics on international trade use a different set of categories. What's more, there is no official definition and no statistics on KIS (or KIBS) trade (Chen 2011, p. 343).³

Taking into account the definition of KIS and of KIBS, as well as the availability of data from balance of payments statistics, we define KIBS trade as including: Communications services; Insurance services; Financial services; Computer and information services; Royalties and license fees and Other business services. Other business services consist of: Merchanting and other trade-related services; Operational leasing services and Miscellaneous business, professional and technical services (including: Legal services; Business and management consultancy, public relations services; Accounting, auditing, book-keeping and tax consulting services; Advertising, market research and public opinion polling; Research and development services; Architectural, engineering and other technical consultancy; Agricultural, mining, and on-site processing; Other miscellaneous business, professional and technical services; Services between affiliated enterprises, n.i.e.). This seems to be in line with the definition of KIBS in the broad sense (Wyszkowska-Kuna 2015, forthcoming).

One should keep in mind that most of the service categories included into KIBS trade comprise some services that are less knowledge-intensive, but it is not possible to exclude them, because data on them are available only in the Eurostat database.⁴ This problem is especially visible in the case of: Transport

² The problem is that most services are delivered both to consumers and producers. If we need information on the cost or value of production then we may use data from input-output tables to resolve this problem. In other cases it is not possible to separate services delivered to producers from those delivered to consumers. Browning and Singelman (1978, pp. 489–90) divided services into two groups: (1) intermediate services (those branches dominated by service deliveries to producers); and (2) final services (these branches dominated by service deliveries to consumers).

³ There are only statistics on high-tech trade that refer to trade in high-tech manufacturing.

⁴ We don't use the Eurostat database because it lacks the data on world service trade which are necessary to calculate values of the RCA index. But even when using Eurostat data, it is not possible to exclude less knowledge-intensive services, as data on individual components of service categories are usually incomplete and in some case they are not sufficiently disaggregated (i.e. there is no data on different types of telecommunication services).

(only Inland waterway and Air transport should be included into KIBS trade, but they represent less than half of total Transport, and therefore we decided to exclude it), Communications (only “value added telecommunication services” should be included) and Other business services (Merchanting and other trade related services, and Agricultural, mining and other on-site processing services, except Mining engineering and geological surveying, should be excluded).

The transactions recorded in the balance of payments statistics cover, to a varying extent, three of the four modes of service trade (GATS, Annex 1b, pp. 285–286). Thus, the analysis refers only to international trade through cross-border transactions and temporary movement of service recipients (modes 1 and 2) and a part of temporary movement of natural persons (mode 4) that takes place through service transactions.

3. Measuring competitiveness in international service trade

According to the OECD definition, competitiveness in international trade is a measure of a country's advantage or disadvantage in selling its products on international markets (OECD 2005). Indicators of competitiveness can be grouped into three categories: (a) indicators measuring benefits from international trade (factorial or price terms of trade, labour and capital productivity, and a sector's share in a country's total export); (b) indicators measuring market domination (export performance, market share, relative market share, hypothetical export index, constant market share, revealed comparative advantage); and (c) indicators combining the previous two categories (composite competitiveness indicator) (Bieńkowski 2008, pp. 23–29).

The theoretical studies on international service trade are not very extensive, but they generally demonstrate that export-based indices of competitiveness can also be applied to service trade (Nusbaumer 1987, pp. 60–61; Misala 2001, pp. 153–168; Wyszowska-Kuna 2005, pp. 15–30). One of the most commonly used indicators is the Balassa (1965) index of revealed comparative advantage (RCA) (Wysokińska 1995, p. 106; Misala 2001, p. 245; Bieńkowski 2008, p. 28). Barras and Peterson (1987, pp. 139) proved that the RCA index, together with adjusted export shares, are conceptually superior measures of competitiveness in service trade compared with observed export shares. Therefore, in this paper the RCA index, as well as export shares and trade balances, are used.

Finally, we should stress that the measurement of competitiveness is a matter of compromises with the available data (Durand, Giorno 1987, p. 153; Durand, Simon, Webb 1992, p. 6; Chen 2011, p. 342), especially in the case of

services trade, where data are scarce, incomplete, at high level of aggregation and difficult to compare if they come from different sources – generally of much poorer quality than in the case of merchandise trade. Additionally, measuring competitiveness in services is severely limited by the problem of accurately measuring the output of service industries (Peterson, Barras 1987, p. 133).

4. A review of related studies

Only a few researchers have studied the impact of particular services, recognized as a strategic input into the rest of the system, on productivity and growth (Antonelli 1998; Katsoulacos, Tsounis 2000; Windrum, Tomlinson 1999; Balaz 2004; Di Cagno, Meliciani 2005; Wyszowska-Kuna 2015 forthcoming), which finally leads to increasing competitiveness in industries using these services. They usually include financial, communication and business services, but in the literature they are termed in different ways (as FCBS, KIS or KIBS).

There are also few studies analyzing the issue of international competitiveness in this field. Guerrieri and Meliciani (2005) found that a country's ability to develop competitiveness in FCBS depends on the structure of its manufacturing and service sectors, as some industries are more intensive users of these services. Yap Co (2007) showed that affiliated KIS exports (e.g. research, development, testing services) generally arise to support other activities (e.g. manufacturing) in the importing countries, whereas non-affiliated KIS exports do not require the presence of other activities. Brinkley (2007) highlighted structural change in the UK economy from trade in other manufactured goods towards exports in knowledge-based services and high tech manufacturing, based on (1) consolidation of traditional strengths (City, business services, higher education); (2) moving into rapidly growing areas such as computer and information services and creative industries; (3) transformation of manufacturing from pure production to offering a manufacturing and services package, and (4) development of global brands and expertise across a range of KIS industries, also in the context of increased competition from emerging economies. Javalgi, Gross, Joseph and Granot (2011) showed that major emerging markets are building competitive advantage by focusing on KIBS, but their progress differs sharply – China is in the lead, followed by India, Brazil, Russia, Mexico, Turkey, and Indonesia (although none have managed to reach parity with highly industrialized countries), whereas smaller nations lag behind them. KIS trade contributed more to economic growth in China than labour-intensive and capital-intensive services trade (University of International Business & Economics 2010), but overall China lacks international competitiveness in KIS trade, which is related to the immaturity of its KIS sector

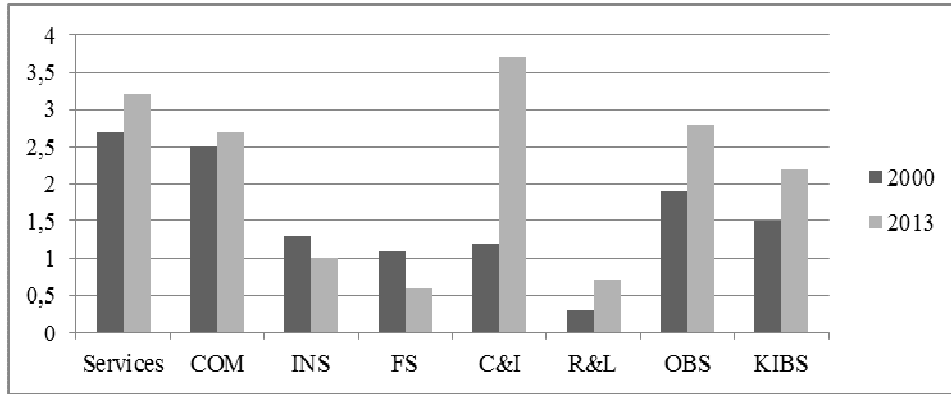
(Chen 2011). Warf (2012) indicates that a large and competitive domestic market, the development of US transnational corporations and the GATS agreement have contributed to international development of KIS in the US, but in the light of the significant deterioration of trade balances in IT and insurance services he questioned whether the US will be able to maintain a sufficiently large surplus in KIS trade that will enable it to offset the growing deficit in merchandise trade. Rodriguez and Camacho (2008) stated that the exploitation of imported high-tech services is an important channel for R&D diffusion, sometimes even more important than the intermediate use of domestically produced R&D services (i.e. in Germany and Belgium).

Finally, two papers have been devoted to studying the competitiveness of Poland (Wyszowska-Kuna 2014a; 2014b), pointing to the high growth in KIS exports after its accession to the EU, although its importance in Poland still remained about twice lower than the EU average. Poland has become competitive in the exports of Other business services (to a large extent outside the EU) and of Computer and information services (in the EU), which was positively determined mainly by labour productivity adjusted for wages, and human capital.

5. The transactions of the new EU member states in KIBS trade

The share of the EU (12) countries in world exports of KIBS (both with respect to total KIBS as well as in each category of KIBS) was generally lower than their share in world service exports. The lowest difference is in Communication services and the highest in Royalties and license fees. In each case, with the exception of Financial Services and Insurance, the EU (12) countries increased their share in world exports, however in the context of the entire analyzed period this growth usually took place until 2008–2010, when the recent world financial crisis began. Computer and information services was the only category where the EU (12) countries steadily increased their share in world exports throughout the entire analyzed period, finally reaching a higher value than in the case of Commercial services. Communication services were the second category where the EU (12) countries increased their share in world exports, but this situation has worsened since 2008. As a result the EU (12) countries recorded a higher share in world service exports only between 2004–2010. In 2013 ‘Other business services’ (OBS) was the category where the EU (12) countries had the second highest share in world exports (in comparison with other KIBS categories), but their share here was only slightly higher than in the case of Communication services.

Graph 1. The share of the EU (12) countries in world exports of commercial services, of total KIBS, and of particular categories of KIBS, in 2000 and 2013 (values in %)

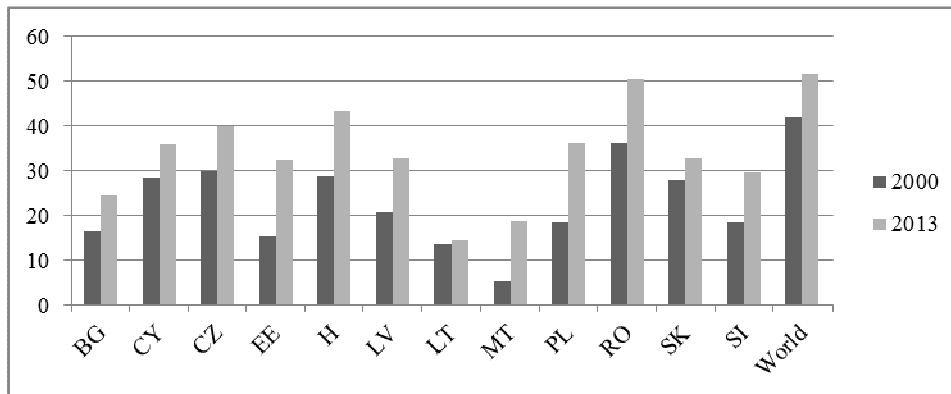


Services – Commercial services; COM – Communications; INS – Insurance; FS – Financial services; C&I – Computer and information; R&L – Royalties and license fees; OBS – Other business services; KIBS – all KIBS categories together.

Source: Own calculations based on *Time series on international trade*, WTO, <http://stat.wto.org/Home/WSDBHome.aspx?Language=E>, 2.07.2015.

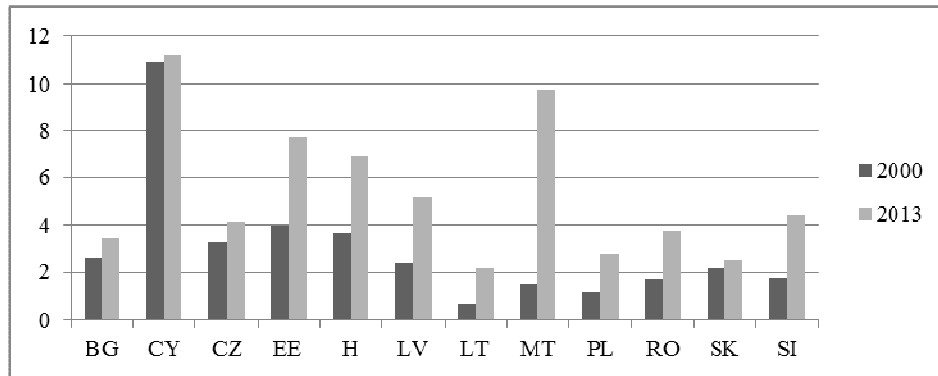
A positive impact of the accession to the EU on export performance is visible in the case of Communication services and Computer and information services (in 2005 both categories increased significantly their shares in world exports), whereas in the case of Communication services and Other business services we can speak of a negative impact of recent crisis.

Graph 2. KIBS exports as a percentage of commercial services exports in the EU (12) countries in comparison with world transactions, in 2000 and 2013



Source: Own calculations based on the source as in the graph 1.

Graph 3. The ratio of KIBS exports to GDP (at purchaser's prices) in the EU (12) countries in 2000 and 2013 (values in %)



Source: Own calculations based on the source as in the graph 1 and on: *GDP (current US\$)*, the World Bank national accounts data, and OECD National Accounts data files, World Development Indicators, http://data.worldbank.org/indicator/NY.GDP.MKTP.CD?page=2&order=wbapi_data_value_2010%20wbapi_data_value%20wbapi_data_value-first&sort=desc, 2.07.2015.

In the EU (12) countries the share of KIBS in service exports was lower than the average in world transactions, which indicates their low importance in this group of countries. The highest share of KIBS in service exports took place in Romania, whereas the lowest was in Malta (in 2000) and Latvia (in 2013). However, each country recorded growth of the share of KIBS in their service exports. It's worth noting that the highest growth took place in Poland and Estonia (by 17 percentage points), and as a result Poland has moved from 7th to 4th place among the EU (12) countries with the highest share of KIBS in their service exports. Generally in most countries the growth was higher than by 10 p.p., and was the lowest in Lithuania (by 0.8 p.p.).

In order to compare the level of KIBS internationalization in the EU (12) countries, the ratio of KIBS exports to GDP is calculated for each country (graph 3). As could be expected, the ratio is generally higher in case of smaller countries (except Lithuania), and reached the highest value in Cyprus. Within the analyzed period the ratio increased in all countries, with the highest growth in Malta, but in most countries (including Poland) it more or less doubled.

Table 1. Average annual growth rates of KIBS exports in comparison with growth rates of commercial services exports in the EU (12) countries in the period 2000–2013 (values in %)

Service category	BG	CY	CZ	EE	H	LV	LT	MT	PL	RO	SK	SI	WO
COM	6	8	12	21	12	9	9	4	7	13	8	24	10
INS	20	-1	42	1	7	10	-4	5	0	15	11	22	11
FS	11	6	-17	19	2	19	27	17	13	8	3	12	10
C&I	46	-2	27	24	21	22	18	28	35	34	20	10	15
R&L	16	-19	14	14	20	19	37	19	19	33	-10	13	10
OBS	9	8	11	17	13	15	17	10	17	22	10	14	11
KIBS	14	7	12	18	14	16	16	24	17	21	11	15	11
Services	10	5	9	11	10	12	16	13	11	18	10	11	9

WO – world, all abbreviations for service categories as in graph 1.

Source: Own calculations based on the source as in the graph 1.

As we can see from the data presented in Table 1, the highest growth rate of total KIBS exports was recorded in Malta (24%), and the lowest in Cyprus (7%). In each country the growth rate of KIBS exports was higher than the growth rate of services exports, with the highest difference in Malta. As far as particular categories of KIBS are concerned, in most countries the highest growth rates took place in the case of Computer and information services.

6. The competitiveness of the EU (12) countries in KIBS exports

In this part of the paper the competitiveness of the EU (12) countries in international trade in knowledge-intensive business services is measured by trade balance and the RCA index. As far as trade balance is concerned, only in the case of Computer and information services did most of the analyzed countries record a positive trade balance, and what's more only Cyprus, Estonia and Latvia maintained it throughout the whole period. The highest surplus can be seen in Romania, whereas a deficit took place in Slovenia. Slovakia and Poland managed to achieve trade surpluses in this field since 2010 (2011). Half of the EU (12) countries recorded trade surpluses in Other business services. The case of Cyprus is noteworthy here, as it maintained the highest surplus throughout the entire period, and in addition with a growing trend. Other countries achieved a positive trade balance in this field just before or after their accession to the EU and in most cases also reflect a growing trend: in Estonia, Latvia and Lithuania since 2003, in Romania since 2005, in Poland since 2007 and in Slovenia since 2008.

Table 2. Trade balance in KIBS trade (total KIBS and each category of KIBS) in the EU (12) countries in the period 2000–2013 (in mln US\$)

Service category	2000	2003	2004	2005	2006	2007	2008	2009	2010	2011	2013
Bulgaria											
COM	16	9	29	99	70	51	128	109	99	57	-17
INS	-26	-59	-59	-64	-80	-106	-78	-109	-18	28	55
FS	-34	-1	7	-15	-32	-96	-73	-116	-49	22	-35
C&I	0	-3	5	-7	2	47	123	91	182	337	510
R&L	-6	-19	-23	-76	-59	-64	-85	-106	-99	-124	-178
OBS	36	-115	-47	-184	-269	-205	-277	-204	-418	-120	-314
Cyprus											
COM	11	-17	-43	-59	-34	-24	-34	23	-21	-66	-91
INS	-39	-12	-26	-8	38	32	103	51	4	-7	-20
FS	145	100	119	172	183	564	1007	991	864	761	340
C&I	37	56	214	194	168	234	180	70	45	34	5
R&L	-5	-24	-35	-31	-43	-33	-38	-48	-23	-32	-28
OBS	679	1028	1237	1308	1450	1595	1627	1663	2172	2367	1871
Czech Republic											
COM	78	-198	-272	7	-9	48	-34	-200	-299	-432	-278
INS	-63	-146	-187	-252	-232	-234	-245	-144	-132	-219	-281
FS	-33	-379	-530	-481	-697	-450	-421	-268	5	15	-108
C&I	12	-73	-79	157	383	141	437	316	16	515	721
R&L	-37	-125	-135	-465	-518	-650	-714	-638	-666	-886	-727
OBS	-1023	-940	-874	-501	-702	-445	951	434	745	237	-279
Estonia											
COM	2	-7	-8	-13	-10	10	-10	21	4	8	4
INS	4	13	13	9	9	13	14	10	7	4	-21
FS	2	-4	0	7	19	43	38	33	44	39	53
C&I	9	10	10	20	45	92	79	95	109	98	130
R&L	-6	-9	-14	-20	-22	-29	-23	-21	-40	-51	-44
OBS	-9	14	114	151	202	263	359	372	236	350	489
Hungary											
COM	-7	27	-19	-14	-62	-143	-23	-34	-24	-103	-93
INS	-68	-178	-177	-190	-192	-182	-172	-267	-128	-184	-123
FS	-78	-86	-126	-40	-49	-36	-61	-77	-54	-33	-40
C&I	-5	-22	-56	-111	-53	149	318	458	470	515	531
R&L	-150	-153	-509	-269	-615	-831	-1155	-613	-311	-492	-128
OBS	-532	-562	70	234	-31	-24	-66	-417	69	-32	-561
Latvia											
COM	20	16	6	4	2	-23	-14	-8	-8	-28	32
INS	-46	-41	-30	-17	-16	-35	-25	2	1	-4	-9
FS	23	69	87	99	149	209	177	166	134	207	204
C&I	7	10	15	4	11	11	39	26	34	58	121
R&L	-10	-5	-8	-3	-9	-27	-23	-18	-21	-42	-28
OBS	54	28	30	42	-9	136	179	160	164	173	273

Lithuania											
COM	2	9	7	11	8	6	-7	-5	-7	-19	-28
INS	-5	-13	-20	-27	-55	-95	-67	-27	-40	-50	-54
FS	-2	3	6	11	12	16	7	15	20	30	40
C&I	2	12	11	5	-5	-3	3	3	1	21	48
R&L	-12	-17	-17	-19	-23	-22	-33	-29	-34	-33	-21
OBS	-9	30	6	212	198	13	-23	45	138	46	177
Malta											
COM	10	19	14	28	15	22	2	-7	-21	-45	-28
INS	-41	-45	-43	-51	-49	-56	-79	-74	-76	-91	-102
FS	-	-	-41	-10	-7	-113	-144	15	141	199	228
C&I	1	1	-1	15	-1	-33	-93	-111	31	48	32
R&L	-8	-13	-14	-6	110	-36	-116	-122	-67	-120	-112
OBS	-113	-146	-22	-117	-219	-160	-405	-556	-1083	-1332	-1300
Poland											
COM	-187	-1	-14	-54	-71	-194	-156	-161	-92	-20	-141
INS	-112	-196	-194	-319	-299	-439	-344	-420	-190	-432	-536
FS	-115	-124	-203	-167	-158	-122	-294	-444	-295	-261	-166
C&I	-157	-217	-225	-222	-177	-208	-54	33	-124	200	670
R&L	-523	-716	-843	-974	-1274	-1465	-1528	-1431	-2007	-2142	-2382
OBS	-532	-943	-579	-494	-101	429	1579	2044	2286	1736	1798
Romania											
COM	63	153	93	312	630	499	313	-250	170	224	241
INS	-20	-74	-84	-103	-119	-121	-188	-199	-189	-224	-235
FS	12	-33	-41	-57	-99	251	187	-272	-268	-409	-89
C&I	15	63	61	-19	51	159	144	243	320	461	1182
R&L	-42	-77	-98	-124	-188	-208	-111	-171	17	-235	-737
OBS	-199	-81	-299	9	351	1078	1157	608	50	161	386
Slovakia											
COM	-523	-716	-843	-974	-1274	-1465	-1528	-1431	-2007	-2142	-2382
INS	-10	-84	-110	-90	-104	-87	-91	-97	-249	-311	-277
FS	-30	-104	-48	-112	-194	-204	-651	-336	-229	-171	-140
C&I	-5	-39	-56	-64	-30	-29	-30	-31	98	331	330
R&L	-42	-33	-39	-19	-16	25	-19	-63	-102	-145	-141
OBS	-177	-307	-62	-117	-47	-132	-355	-719	-291	-9	748
Slovenia											
COM	-26	-37	-30	-23	-22	-34	-17	-36	-30	-25	13
INS	-2	-10	-7	-7	-9	-6	-14	-16	-20	-21	-19
FS	-18	-13	-21	-23	-19	-23	-2	-17	-4	-25	-3
C&I	-3	-13	-21	-12	-18	-36	13	-45	-28	-42	-33
R&L	-38	-78	-110	-97	-136	-148	-215	-253	-307	-328	-198
OBS	-34	-77	-95	-116	-89	-68	60	113	73	31	191

All abbreviations for service categories as in the graph 1.

Source: Own calculations based on the source as in the graph 1.

Finally we should mention the trade balance in Other business services in Poland, as it increased between nearly five times between 2007–2010, and in 2010 and 2011 reached a higher value than in Cyprus (in the following years it declined,

but still remained at a high level). In other KIBS categories a negative trade balance generally dominated, although with some exceptions: in Communication services a positive trade balance could be seen in Bulgaria, Romania, and Malta (until 2008), and in Estonia, Latvia and Lithuania (for more or less half of the period), while a positive trade balance was attained in Insurance services in Estonia and in Financial services in Cyprus, Estonia, Latvia, Lithuania and Malta (since 2009). Worth stressing is the very high surplus in Financial services in Cyprus, that was a result of its favourable tax system and relatively high interest rates on deposits (which in 2011 led to a financial crisis in Cyprus). The category in which all countries recorded trade deficits was Royalties and license fees, with the highest deficit taking place in Poland. A significant improvement in trade balances following accession to the EU can be seen in: Bulgaria (in Communication services and in Computer and information services); Cyprus (in Computer and information services); Estonia (in Other business services); and Romania (in Computer and information services and in Other business services).

If the RCA index is taken into account, a country enjoys comparative advantage in exports of a given product if the value of the RCA index is above 1. As can be seen from the values of RCA indexes presented in the Table 3, during the analyzed period none of the EU (12) countries enjoyed a stable and permanent comparative advantage in KIBS exports.

Table 3. The values of the RCA indicator in exports of total KIBS and of each KIBS category in the EU (12) countries in the period 2000–2013

Service category	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Bulgaria														
COM	0.9	0.9	0.9	0.6	0.9	1.4	1.1	1.0	1.3	1.2	1.3	1.1	0.9	0.5
INS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FS	0.1	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
C&I	0.1	0.2	0.1	0.1	0.2	0.2	0.2	0.4	0.5	0.4	1.0	1.2	1.4	1.4
R&L	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
OBS	0.6	0.6	0.6	0.4	0.4	0.4	0.4	0.5	0.5	0.4	0.4	0.4	0.5	0.4
KIBS	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.5
Cyprus														
COM	0.3	0.3	0.2	0.4	0.3	0.3	0.5	0.6	0.5	0.6	0.4	0.3	0.4	0.4
INS	0.4	0.3	0.3	0.2	0.3	0.5	0.8	0.6	0.9	0.5	0.2	0.2	0.2	0.2
FS	0.8	0.6	0.5	0.5	0.6	0.6	0.6	1.0	1.7	1.9	1.9	1.5	1.2	0.8
C&I	0.5	0.6	0.7	0.5	1.0	0.9	0.7	0.7	0.5	0.2	0.2	0.1	0.1	0.1
R&L	0.1	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OBS	0.9	1.0	1.0	1.0	1.1	1.0	1.1	1.0	0.9	1.0	1.2	1.2	1.2	1.1
KIBS	0.7	0.7	0.7	0.7	0.8	0.7	0.8	0.8	0.8	0.9	0.9	0.9	0.8	0.7

Czech Republic														
COM	0.8	1.3	1.1	0.6	1.0	1.4	1.3	1.4	1.1	1.1	1.0	0.9	0.9	1.0
INS	0.0	0.1	0.0	0.0	0.0	0.3	0.3	0.3	0.5	0.4	0.5	0.5	0.6	0.6
FS	0.9	0.5	0.4	0.4	0.6	0.5	0.4	0.2	0.1	0.1	0.0	0.1	0.0	0.0
C&I	0.5	0.5	0.6	0.2	0.4	1.3	1.6	1.2	1.3	1.3	1.1	1.3	1.5	1.6
R&L	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2
OBS	0.9	0.9	0.9	0.8	0.7	0.8	0.7	0.8	1.0	1.0	1.0	1.0	1.0	1.0
KIBS	0.7	0.7	0.6	0.5	0.5	0.7	0.7	0.6	0.8	0.7	0.7	0.8	0.8	0.8
Estonia														
COM	0.6	0.5	0.6	0.7	1.0	1.0	0.9	1.2	1.5	1.6	1.8	1.7	1.5	1.6
INS	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
FS	0.1	0.2	0.1	0.1	0.1	0.2	0.3	0.3	0.2	0.2	0.3	0.2	0.2	0.2
C&I	0.5	0.4	0.4	0.4	0.3	0.4	0.6	0.8	0.7	0.8	0.8	0.8	0.9	0.9
R&L	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0
OBS	0.5	0.5	0.5	0.7	0.7	0.7	0.8	0.8	0.9	0.9	0.8	0.8	0.8	0.8
KIBS	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.6	0.6	0.6	0.6
Hungary														
COM	0.5	0.6	0.8	0.9	1.1	1.1	1.2	1.1	1.1	1.0	0.9	0.7	0.6	0.5
INS	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1
FS	0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1
C&I	0.7	0.8	0.8	0.7	0.8	0.7	0.9	1.1	1.1	1.2	1.1	1.0	1.1	1.1
R&L	0.3	0.2	0.8	0.6	0.8	1.0	0.7	0.9	0.7	0.7	0.8	0.7	0.8	0.9
OBS	1.0	0.7	0.9	0.9	1.1	1.1	1.1	1.1	1.2	1.1	1.1	1.2	1.2	1.1
KIBS	0.7	0.5	0.7	0.7	0.8	0.9	0.8	0.9	0.9	0.8	0.9	0.9	0.9	0.8
Latvia														
COM	1.7	0.9	0.9	1.0	1.2	1.2	1.3	0.9	0.9	1.0	1.0	0.9	1.1	1.1
INS	0.4	0.6	0.3	0.2	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.3
FS	0.5	0.6	0.8	1.0	1.0	0.8	0.9	0.8	0.8	0.9	0.8	1.0	0.9	1.0
C&I	0.6	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.9
R&L	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.1
OBS	0.5	0.6	0.6	0.5	0.5	0.6	0.5	0.6	0.7	0.6	0.7	0.6	0.6	0.6
KIBS	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Lithuania														
COM	1.5	1.3	1.2	1.3	1.1	1.1	1.0	1.0	0.9	1.1	1.1	0.9	0.8	0.6
INS	0.2	0.4	0.1	0.0	0.0	0.0	-	-	0.1	0.0	0.0	0.0	0.0	0.0
FS	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1
C&I	0.5	0.6	0.4	0.4	0.3	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3
R&L	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
OBS	0.4	0.5	0.5	0.4	0.3	0.5	0.5	0.3	0.2	0.3	0.3	0.3	0.3	0.4
KIBS	0.3	0.4	0.4	0.3	0.2	0.4	0.3	0.2	0.2	0.3	0.3	0.2	0.3	0.3

Malta														
COM	1.0	1.0	1.0	1.0	1.2	1.3	0.9	0.9	0.5	0.4	0.5	0.5	0.4	0.3
INS	1.5	1.4	1.0	0.7	1.0	1.2	0.7	0.5	0.5	0.4	0.4	0.3	0.3	0.5
FS	-	-	-	-	0.6	0.5	0.6	0.8	0.6	0.7	0.9	0.8	0.9	0.8
C&I	0.1	0.1	0.1	0.1	0.2	0.6	0.5	0.3	0.3	0.3	0.4	0.4	0.3	0.2
R&L	0.0	0.0	0.0	0.0	0.0	0.4	0.9	0.3	0.2	0.2	0.1	0.1	0.1	0.1
OBS	-	-	-	-	0.5	0.6	0.8	1.0	0.7	0.7	0.4	0.4	0.4	0.4
KIBS	0.1	0.1	0.1	0.1	0.5	0.6	0.8	0.8	0.6	0.5	0.5	0.4	0.4	0.4
Poland														
COM	1.0	0.8	0.7	0.9	0.9	0.8	0.8	0.7	0.7	0.8	0.7	0.6	0.6	0.5
INS	1.1	1.0	0.8	0.7	0.2	0.2	0.2	0.0	0.2	0.0	0.2	0.5	0.4	0.2
FS	0.2	0.3	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
C&I	0.2	0.2	0.3	0.3	0.4	0.3	0.5	0.5	0.5	0.6	0.8	1.0	1.1	1.2
R&L	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
OBS	0.6	0.6	0.5	0.6	0.6	0.7	0.8	0.8	0.9	1.0	1.2	1.0	1.0	0.9
KIBS	0.4	0.5	0.4	0.5	0.4	0.5	0.5	0.5	0.6	0.7	0.8	0.7	0.7	0.7
Romania														
COM	3.7	2.8	3.1	3.3	3.4	5.6	6.4	4.8	3.5	3.3	2.6	2.9	2.1	1.9
INS	0.7	0.9	0.3	0.6	0.3	0.3	0.2	0.3	0.2	0.2	0.2	0.5	0.6	0.4
FS	1.0	0.8	0.6	0.3	0.3	0.3	0.2	0.6	0.5	0.2	0.2	0.3	0.4	0.3
C&I	0.8	0.7	0.9	0.9	1.0	1.6	1.5	1.5	1.4	1.9	2.1	1.8	2.3	2.2
R&L	0.0	0.1	0.0	0.0	0.0	0.2	0.1	0.1	0.3	0.3	0.8	0.4	0.5	0.1
OBS	0.8	0.8	1.0	1.0	0.8	0.9	1.0	1.2	1.1	1.1	0.9	1.0	1.0	1.0
KIBS	0.9	0.8	0.8	0.8	0.7	1.0	1.0	1.1	1.0	1.0	1.0	1.0	1.0	1.0
Slovakia														
COM	1.0	0.8	0.9	1.0	0.9	1.1	1.9	1.5	1.5	1.3	1.3	0.7	1.1	0.7
INS	0.3	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.4	0.3	0.2	0.4	0.3
FS	0.3	0.2	0.4	0.3	0.4	0.4	0.3	0.5	0.3	0.1	0.1	0.1	0.1	0.1
C&I	0.8	0.7	0.7	0.6	0.8	0.7	0.7	0.7	0.7	0.9	1.1	1.5	1.3	1.2
R&L	0.1	0.1	0.2	0.3	0.3	0.3	0.3	0.4	0.3	0.2	0.1	0.0	0.0	0.0
OBS	0.9	0.7	0.8	0.6	0.7	0.7	0.7	0.7	0.7	0.5	0.6	0.6	0.8	0.8
KIBS	0.7	0.5	0.6	0.5	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.7	0.6
Slovenia														
COM	0.6	0.7	1.1	1.0	1.1	1.2	1.0	1.1	1.6	1.7	1.9	2.2	2.2	2.3
INS	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.7	0.5	0.6	0.7	0.6	0.6
FS	0.1	0.1	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
C&I	0.9	0.9	0.9	0.8	0.7	0.7	0.6	0.6	0.5	0.5	0.5	0.4	0.5	0.4
R&L	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
OBS	0.6	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.7
KIBS	0.4	0.4	0.5	0.5	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.5	0.6	0.6

All abbreviations for service categories as in graph 1.

Source: Own calculations based on the source as in graph 1.

As far as different KIBS categories are compared, the EU (12) countries generally achieved comparative advantage in the exports of Communications services and Computer and information services, sometimes also of Other business services. The highest comparative advantage in these fields is visible in Romania. Romania has maintained its comparative advantage in the exports of Communications services throughout the entire analyzed period, although since 2006 - when it reached its highest value – it has been on the decrease. In the case of Computer and information services Romania achieved a comparative advantage since 2006 and since then it has been on the increase. Romania has also enjoyed comparative advantage in the exports of Other business services since 2007, although it hasn't been high (in 2010 it was slightly below 1 and then it reached the border value). The other countries with comparative advantage are as follows:

- in exports of Communications services: Bulgaria (2005–2011), Czech Republic (2001–2011, except 2003), Estonia (since 2004), Hungary (2004–2009), Latvia (generally for the whole period, but there were some years when it lost its advantage), Lithuania (for the whole period except 2008 and 2011–2013), Slovakia (in 2000, 2003, and then since 2005, but after 2010 we can observe a deterioration of this advantage), Slovenia (since 2002, with a growing tendency);
- in the exports of Computer and information services: Bulgaria (since 2010), Czech Republic (since 2005), Hungary (since 2007), Poland (since 2011), Slovakia (since 2010);
- in the exports of Other business services: Cyprus (since 2004, except 2008), Hungary (since 2004) and Poland (since 2009, except 2013);
- in the exports of Financial services: Cyprus (between 2008–2012).

A significant increase in the value of the RCA index after accession to the EU can be seen in the following cases: in Communication services – in the Czech Republic, Estonia, Latvia, Slovakia, Cyprus, Romania and Hungary; in Computer and information services – in the Czech Republic; and in Other business services – in Cyprus, Hungary and Romania.

Finally, we should mention that in 2009 the EU countries were obliged to implement the directive on services in the internal market, the aim of which was to establish more favourable conditions for intra-EU service trade (Directive 2006/123/EC).⁵ After 2010 a significant improvement in trade balances could be observed in Latvia, Romania, and Slovakia in Computer and information services and in Other business services, and in Malta, the Czech Republic, Poland in Computer and information services. At the same time a significant increase in the value of the RCA index could be observed in Bulgaria, Poland and Slovakia in Computer and information services.

⁵ Some countries, including Poland, implemented this new law in 2010.

7. Competitiveness in KIBS exports – the case of Romania

The highest importance and competitiveness of KIBS exports can be observed in Romania, especially in the fields of Communication services and Computer and information services. This may come as a surprise because Romania is the EU country with the lowest GDP per capita, and as we know from the literature the level of the service sector's development in the economy of a given country is linked to the level of its economic development (Kwiatkowski 1980, pp. 63-69, Flejterski et al 2005, p. 36, Wyszowska-Kuna 2015 forthcoming). However, the case of Romania is compared with that of India (Fiscutean 2014), which is the country that achieved a much higher level of its service sector's development than its overall economic development (Wróbel 2013, pp. 333-339).

The situation in Romania is primarily a result of the outsourcing to this country of some service functions by foreign companies, as Romania has become an outsourcing hub in Central and Eastern Europe,⁶ a region that is perceived as a new competitor to India. The best example is the Romanian software industry, where approximately 83% of employees work for companies that offer outsourcing services for foreign clients, which in turn stimulates international transactions in Computer and Information as well as Communications services. Romania attracts foreign investors through its geographical proximity to Western Europe, low outsourcing costs, cheap properties, well-prepared ICT workforce, multiple language skills, the right price-quality ratio, and good connectivity by air to Europe (Flinders 2013; Szekely 2013; Fiscutean 2014).

One should keep in mind that not only Romania but also other Central-East European countries have become an interesting location for outsourcing. Poland is ranked even higher than Romania in this field (2014 Tholons Top 100 Outsourcing Destinations: Rankings, 2013), but it is less competitive in exports of Computer and information and uncompetitive in exports of Communications. Therefore, there must be some factors specific to Romania factors that contribute to its high competitiveness in the analyzed fields. They would seem to include: (1) the highest average speed of broadband Internet access (the highest in Europe and the 4th in the world, after South Korea, Japan and Hong Kong: Akamai, 2013, p. 14); and (2) delivery at one of the lowest prices in Europe (Van Dijk Management Consultants S.A., European Commission, 2012), being a result of the high competition on the Romanian telecommunications market (Tudorache 2010, p. 5, 8). The 100% income tax exemption for IT employees, which has been maintained even after joining the EU, would also seem to be of significance.

⁶ Between 2008 and 2012, 40 outsourcing projects created 11,438 jobs in Romania, only 2000 less than in Poland, a country that is almost twice as large in terms of population (Szekely 2013).

These are supposedly the main incentives for foreign investors⁷ looking for the best location for their outsourcing activities, mainly for software development services, but also for IT helpdesk, financial and accounting, procurement, audit, tax and advisory services (Szekely 2013).

Finally Romania's wage advantage should be mentioned, as the wage adjusted labour productivity indicator (gross value added per person employed) usually reached higher values in Romania than in the other EU (12) countries. This is especially visible in the field of Professional, scientific and technical activities, but also in the case of Communication and information (Annual detailed enterprise statistics for services, NACE Rev. 2 H-N and S95, Eurostat).

8. Conclusions

1. The importance of KIBS in service exports in the EU (12) countries was quite low overall, but as a result of higher growth rates (compared with growth rates of total service exports), it increased significantly during the analyzed period. The growing trend usually took place until the outbreak of the recent financial crisis, and only in the case of Computer and information services has it managed to be maintain during the time of crisis. Computer and information services also recorded the highest growth of exports.
2. The EU (12) countries were most competitive in the exports of Computer and information services, and then in Other business services and Communication services, although not all of the analyzed countries enjoyed a positive trade balance and/or a comparative advantage in these fields.
3. The highest importance and competitiveness of KIBS exports can be seen in Romania. Romania has become a hub of outsourcing, thanks to its geographical proximity to Western Europe, low outsourcing costs, cheap properties, well prepared ICT workforce, multiple language skills, the right price-quality ratio, and good connectivity by air to Europe; but above all thanks to the high quality and low prices of its Internet services, as well as public incentives and wage advantage.
4. Poland recorded the highest growth of KIBS in its exports of commercial services, in 2013 reaching the fourth highest value in the EU(12) countries.

⁷ Apart from large investments from ICT companies such as Adobe, IBM, Oracle, Intel, Accenture, EA Games and Wipro and HP, in 2011 three of its startups were counted by the British Telegraph among top 100 emerging technology businesses in Europe. In addition, among foreign investors we can find also companies from other branches, such as: Oral, Bosch, Siemens and others (Flinders 2013; Szekely 2013).

Poland wasn't competitive in total KIBS exports, but thanks to high growth rates of its exports of Computer and information services and Other business services, it managed to achieve trade surpluses and comparative advantage in both fields by the end of the analyzed period. It's worth stressing this took place during the time of crisis, but on the other hand these comparative advantages were not high and stable (especially in the field of Other business services).

5. The competitiveness of the EU (12) countries was usually positively affected by their accession to the EU and negatively affected by the recent financial crisis. In some countries, following the implementation of the new service directive its positive impact could be observed on their export competitiveness in Computer and information services and Other business services.

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Streszczenie

KONKURENCYJNOŚĆ NOWYCH KRAJÓW CZŁONKOWSKICH UNII EUROPEJSKIEJ W MIĘDZYNARODOWYM HANDLU USŁUGAMI BIZNESOWYMI OPARTYMI NA WIEDZY

Celem pracy jest zbadanie i porównanie konkurencyjności nowych krajów członkowskich Unii Europejskiej w międzynarodowym handlu usługami biznesowymi opartymi na wiedzy.

W pierwszej części pracy przedstawiona jest definicja handlu usługami biznesowymi opartymi na wiedzy, omówiona jest kwestia pomiaru konkurencyjności w handlu usługami oraz dokonany jest przegląd dotychczasowych badań w tym obszarze. Druga część pracy ma charakter empiryczny. Najpierw autorka analizuje tendencje w transakcjach nowych krajów członkowskich UE w handlu usługami biznesowymi opartymi na wiedzy. Następnie przedmiotem badania jest konkurencyjność nowych krajów członkowskich UE w eksporcie tych usług (ogółem oraz w poszczególnych kategoriach). W analizie wykorzystane są takie mierniki konkurencyjności międzynarodowej, jak: wyniki eksportowe oraz wskaźnik przewagi komparatywnej (RCA). Autorka porównuje konkurencyjność poszczególnych krajów i stara się odpowiedzieć na pytanie, czy akcesja do UE miała wpływ na konkurencyjność tych krajów w analizowanym obszarze.

W pracy wykorzystywano dane pochodzące z baz danych WTO. Analizowany okres to lata 2000–2013, ponieważ od 2000 roku dostępne są dane dla poszczególnych kategorii zaliczanych do Pozostałych usług. Analiza odnosi się do 12 krajów, które wstąpiły do UE w 2004 i 2007 roku.

Słowa kluczowe: międzynarodowa konkurencyjność, międzynarodowy handel usługami, usługi biznesowe oparte na wiedzy