



## TENDENCIES OF TRADE IN TRANSPORT SERVICES IN V4 COUNTRIES, EU28 AND EU19 COUNTRIES

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**Abstract:** Two important trends can be identified in the world economy. First, technological innovations are becoming an increasingly important contributor to economic well-being. Secondly, citizens are becoming more open and independent, and able to obtain information, products, and services worldwide. Rapid changes in technology reinforce trade motives and the consequences of integration into the world trade system. In this context, the importance of trade in services, the share of services in GDP and value added in individual economies are increasing. Imports and exports are among the basic foreign trade activities that enable us to obtain utility values from abroad or to supply them abroad. These activities reflect the advantages and disadvantages of individual economies. They also reflect government policy. The aim of this paper is to point out the state and basic trends in trade in transport services in relation to trade in services and trade in transport services. OECD 2018 statistics are used to identify the status and underlying trends in trade in services and their components.

**Keywords:** trade, transport, transport services, Balassa index

### 1. Introduction

Rapid changes in technology reinforce trade motives and the consequences of integration into the world trade system. Two important trends have been identified in the world economy. First, technological innovation is becoming an increasingly important contributor to economic well-being. Secondly, citizens of the world economy are becoming more open and increasingly independent [3, 11,46]. Trade in services includes trade in transport and travel services, telecommunications, computer and information services, production services on physical inputs owned by others, business services and other business services. While transport services indicate the development of international trade and demand for them comes from international trade, other trade services indicate changes in sectors. Trade in other business services includes trade in research and development services, legal services, accounting, auditing, bookkeeping and tax consultancy, as well as business and management consultancy and public relations services. All these services are based on specific knowledge and skills. These services significantly change the structure of the economy in the transitional period and must be integrated into the new sectoral structure based on a economy with high value-added services [6,31,32]. The provision of other business services indicates

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changes in the business environment and challenges to improve the position on the international market [26].

## 2. Theoretical background

When assessing and identifying trends in foreign trade in services, it is necessary to define two key areas, namely the definition of services and processes related to foreign trade. There has not yet been a single definition of services in academic literature. A wide variety of approaches are used to define this term. Unlike physical goods, services are essentially classified as intangible goods. However, the degree of intangibility is not sufficient to distinguish between two types of goods [6,14,15,18]. As there are no separate categories, it is more appropriate to consider the difference between them as gradual and linked to a smooth transition to the tangible or intangible continuum [10]. Existing approaches to service definition can be divided into three categories [34,35]:

- enumerative approaches that define services by giving concrete examples [27]
- approaches that describe services as opposed to physical goods [1]
- approaches that explicitly define services using their essential characteristics [45].

The last group of approaches is best suited to derive a more operational perspective. The basic characteristic is a characteristic attribute that describes the essence of the service [38]. When structuring service elements, 3 different basic characteristics are appropriate. These lead to three types of classic definitions [34]:

- potentially oriented definitions
- process-oriented definitions
- results-oriented definitions

Potential-oriented definitions examine the service delivery process [47]. Services are assessed for their ability and willingness to provide services [28,29]. This requires service personnel who are ready and able to carry out a service [37,38].

Process-oriented approaches also focus on the service delivery process, but in this case it is examined on the basis of service-specific characteristics. The integration of the 'external factor' plays a central role in these definitions [8,9]. This external factor summarizes all the factors that the buyer must make available to the service provider [30]. Buyers have a dual role - they are both consumers and producers. For this reason, the buyer is sometimes called a 'prosumer' [9]. Another criterion is the 'principle of inactivity', which describes current production and consumption [50]. Critically, it is not possible to separate services from their providers - whether individuals or machines [23,24,25]. Another characteristic is variability, as services may vary depending on who provides them, where, when and how [36]. The main focus of the results-oriented definitions is the outcome of the provision of services, which is assessed according to a degree of importance. It is assumed that physical goods are material and services are not significant. Services cannot be stored or transported [10]. Other authors describe services using other characteristics, such as lack of ownership [23] or perceived risk of purchase [19]. Some also define services in a much broader sense [48].

However, none of the above mentioned approaches is suitable to cover all kinds of services. In order to gain real mutual understanding, it is necessary to combine potential, process and result-oriented approaches.

The classification of services refers to demand at the level of differentiation. These services are not provided to individuals or groups of individuals, but to companies or organizations. They are therefore called business services. As regards supply at the level of

differentiation, a distinction can be made between service companies offering services as their core business and producers offering services as ancillary to their core business.

Growing importance of services in creation of GDP and added value is related to their changes in terms of international trade [4]. Import and export belong to the basic foreign trade activities. They reflect the advantages and disadvantages of individual economies, or they reflect government policies [21,7]. From the time of mercantilism, the efforts of governments promoting export and import restrictions have been observed. Smith and Ricardo pointed to the need for a free market with the invisible hand of the market and without restrictions. It was their approach that emphasized that countries and their economies are differentiated according to their ability to efficiently produce the goods. A significant shift was the Heckscher-Ohlin theory of international trade and comparative advantages, which points to a connection with various national subsidies. Subsidies or restrictions affect the efficiency of production, as well as the intensive use of own resources in exports and the acquisition of what is rare in import [16]. Porter's theory of national competitive advantage [42,43] includes the impact of factors of production, domestic demand conditions, support industries and corporate strategies, market structure and competition. New trade theories point to other characteristics in the economy and sectors [2, 12,13]. Most theories deal with trade with goods, less with services.

### 3. Aim and methodology

The aim of this paper is to point out the state and basic tendencies in trade in transport services in relation to trade in services and trade in individual types of transport services based on international statistics.

The survey focuses on the Slovak Republic as part of the European Union and the Eurozone, as well as the regional grouping of the Vysegrad Four (V4), which consists of countries – Slovak Republic (SR), Czech Republic (CR), Hungary (H) and Poland (PL). SR as well as other V4 countries have been a part of the European Union (EU28) since 2004. SR is also part of the Eurozone (EU19). From the point of view of the previous economic development of these countries until the year 1989, it is usually assumed that their foreign trade activities have a similar development and therefore form a regional grouping of V4.

In identifying the state and basic tendencies in trade in transport services and their components, we used OECD 2018 statistical database [39,40,41], which contain data used to analyse trade, export and import. We focused on: the tendencies in the regional direction of import and export of transport and passenger transport services, as well as on the evaluation of individual shares.

We also used a modification of the Balassa RCA index [17,22] to analyse trade with services. The existence of a country's comparative export advantages in a given commodity group is indicated by an RCA value greater than 1. If the index of a given commodity group is less than 1, this is a comparative disadvantage [49]. Indicates that in a given commodity a country exports less than the average for the reference group.

### 4. Results

When comparing and evaluating the V4 countries in terms of their export and import of transport services, it can be stated (Table 1) that in years 2013 and 2016 the shares in the export of transport services to the EU28 countries were equal to 69% in the year 2013 for Czech Republic and 82% in the year 2016 for Hungary.

**Table 1 Transport services exports in V4 countries in terms of their geographical direction in 2013-2016**

| Transport services | Export | SR         |            | CR         |            | H          |            | PL         |            |
|--------------------|--------|------------|------------|------------|------------|------------|------------|------------|------------|
|                    |        | 2013       | 2016       | 2013       | 2016       | 2013       | 2016       | 2013       | 2016       |
|                    |        | 100%       | 100%       | 100%       | 100%       | 100%       | 100%       | 100%       | 100%       |
| EU28               | export | <b>71%</b> | <b>71%</b> | <b>69%</b> | <b>72%</b> | <b>79%</b> | <b>82%</b> | <b>79%</b> | <b>81%</b> |
| Euro area          | export | <b>47%</b> | <b>49%</b> | <b>49%</b> | <b>52%</b> | <b>55%</b> | <b>53%</b> | <b>63%</b> | <b>63%</b> |
| Austria            | export | 11%        | 15%        | 3%         | 3%         | 16%        | 13%        | 4%         | 4%         |
| Germany            | export | 16%        | 15%        | 15%        | 15%        | 14%        | 14%        | <b>26%</b> | <b>26%</b> |
| SR                 | export |            |            | 6%         | 7%         | 4%         | 4%         | 2%         | 1%         |
| CR                 | export | 15%        | 12%        |            |            | 1%         | 2%         | 3%         | 3%         |
| H                  | export | 4%         | 3%         | 3%         | 3%         |            |            | 1%         | 1%         |
| PL                 | export | 1%         | 1%         | 5%         | 5%         | 4%         | 5%         |            |            |
| V4                 | export | <b>20%</b> | 16%        | 13%        | 15%        | 9%         | 11%        | 6%         | 6%         |
| UK                 | export | 1%         | 2%         | 7%         | 7%         | 8%         | 9%         | 4%         | 5%         |
| USA                | export | 1%         | 0%         | 2%         | 2%         | 2%         | 2%         | 4%         | 3%         |

Source: own processing based on OECD data

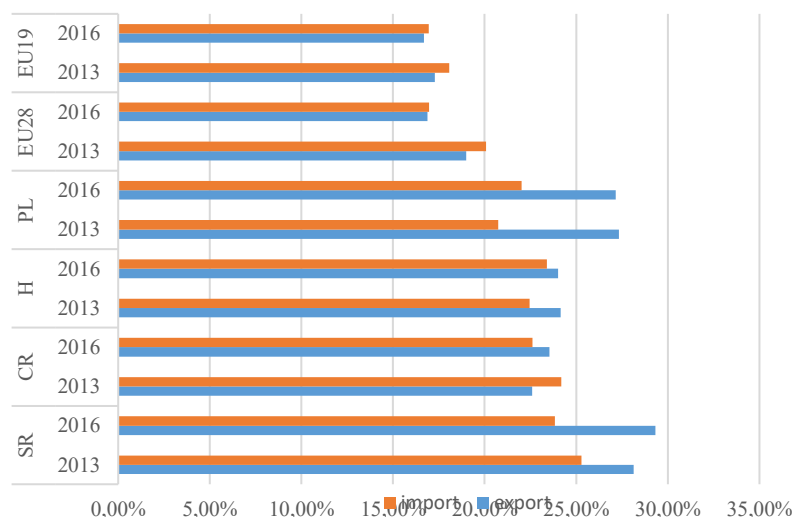
Similar results are in the import of transport services, while the share of imports from EU28 countries with the exception of the Czech Republic reaches a high level (Table 2). In terms of mutual trade ties of the V4 countries, relatively small shares have been identified, with the exception of the export of transport services of the Czech Republic to Slovakia.

**Table 2 Import of transport services in V4 countries in terms of their geographical direction in 2013-2016**

| Transport services | Import | SR         |            | CR         |            | H          |            | PL         |            |
|--------------------|--------|------------|------------|------------|------------|------------|------------|------------|------------|
|                    |        | 2013       | 2016       | 2013       | 2016       | 2013       | 2016       | 2013       | 2016       |
|                    |        | 100%       | 100%       | 100%       | 100%       | 100%       | 100%       | 100%       | 100%       |
| EU28               | import | <b>85%</b> | <b>83%</b> | <b>47%</b> | <b>48%</b> | <b>79%</b> | <b>80%</b> | <b>73%</b> | <b>76%</b> |
| Euro area          | import | <b>48%</b> | <b>48%</b> | <b>37%</b> | <b>37%</b> | <b>59%</b> | <b>60%</b> | <b>55%</b> | <b>54%</b> |
| Austria            | import | 16%        | 13%        | 2%         | 2%         | 10%        | 8%         | 3%         | 3%         |
| Germany            | import | 18%        | 22%        | 10%        | 11%        | 20%        | 20%        | 24%        | 23%        |
| SR                 | import |            |            | 6%         | 6%         | 6%         | 6%         | 2%         | 2%         |
| CR                 | import | 20%        | 16%        |            |            | 3%         | 3%         | 4%         | 4%         |
| H                  | import | 7%         | 6%         | 2%         | 2%         |            |            | 1%         | 1%         |
| PL                 | import | 6%         | 7%         | 2%         | 2%         | 3%         | 4%         |            |            |
| V4                 | import | <b>33%</b> | <b>29%</b> | 10%        | 10%        | 13%        | 13%        | 7%         | 7%         |
| UK                 | import | 1%         | 1%         | 3%         | 4%         | 5%         | 4%         | 4%         | 6%         |
| USA                | import | 1%         | 1%         | 7%         | 7%         | 5%         | 4%         | 6%         | 5%         |

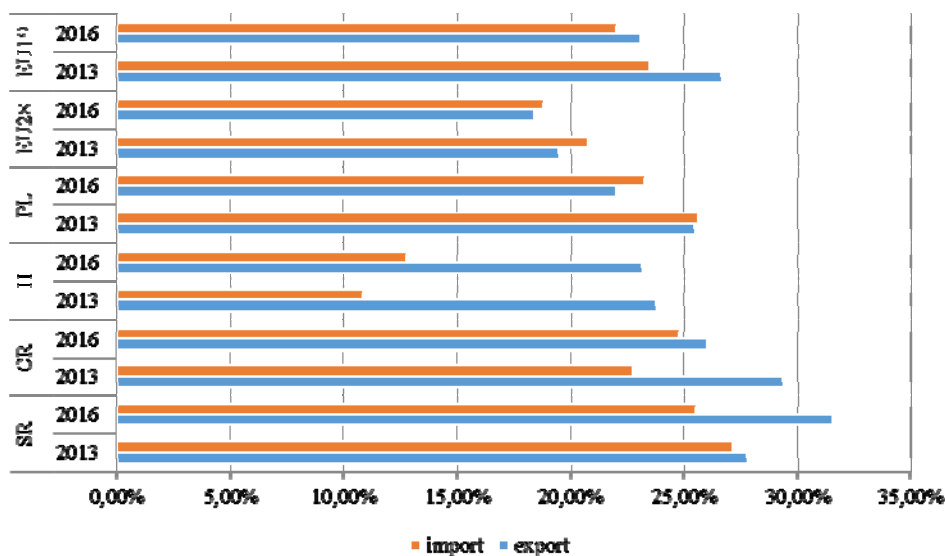
Source: own processing based on OECD data

In figures 1 and 2 are stated the results with respect to foreign trade activities related to trade in transport services and passenger transport services within the V4 and EU28 countries as well as EU19 in the years 2013 and 2016. Percentages of trade in transport services show a positive difference between exports and imports in Slovakia, Hungary and Poland. They are also positive in Czech Republic in the year 2016. The only exception was the year 2013, when the import volume of transport services in the Czech Republic was higher than that of exports. In the V4 countries as a whole, exports exceed significantly imports in trade in transport services, in contrast to both the EU28 and the EU19 (Fig. 1).



**Fig. 1 Share of export and import of transport services in total trade in services of V4, EU28 and EU19 countries (Source: own processing based on OECD data)**

When assessing the share of exports and imports of passenger transport services in the total trade in services of V4, EU28 and EU19 countries, it can be stated that, unlike in the EU28, in V4 countries exports exceed imports, with the highest percentage differences seen in Hungary (Fig. 2).



**Fig. 2 Share of export and import of passenger transport services in total trade in services of V4 and EU28 and EU19 countries (Source: own processing based on OECD data)**

In order to determine the tendencies and possible specialization of the V4 countries, we investigated the share of exports in transport services in the export of services (Table 3). The reference group of countries was V4. If we focus on assessing exports and the potential comparative advantage of the V4 countries in the transport services business through the Balassa RCA index [22], it can also be stated (Table 3) that Slovakia and Poland have a weak comparative advantage in the transport services business (Balassa RCA index is more than 1.00), which in the period under review in Slovak Republic increased.

**Table 3 RCA Balassa Index - export in V4 countries for transport services**

| Balassa Index RCA           | SR          |             | CR   |      | H    |      | PL          |             |
|-----------------------------|-------------|-------------|------|------|------|------|-------------|-------------|
|                             | 2013        | 2016        | 2013 | 2016 | 2013 | 2016 | 2013        | 2016        |
| Transport services - export | <b>1,10</b> | <b>1,14</b> | 0,88 | 0,91 | 0,95 | 0,93 | <b>1,07</b> | <b>1,05</b> |

Source: own processing based on OECD data

## 5. Conclusion

International trade in services in the V4 countries increased overall by 7% in 2013-2016, on the import side it decreased by 0.85%, of which trade in transport services increased by 22.9% on the export side and remained on the same level in import.

Trade in services and, in particular, transport services, despite the V4 membership in the EU28 and in the single market, is under constant pressure from various factors, such as those of associations, interest groups or other groups [5,33]. Three of the V4 countries are not members of the euro area and the use of national currencies and their own monetary policy also affects international trade in the trade in services. However, new transport-related technical and technological solutions create new opportunities in the trade in services and need to be constantly addressed. Technological changes in different sectors and markets lead to changes in the trade in services, which are inevitably linked to international trade and the use of the comparative advantages of individual countries in the international environment [20].

## References

- [1] Altenburger, O. A. 1981. Ansätze zu einer Produktions- und Kostentheorie der Dienstleistungen, Berlin, München 1981.
- [2] Chapsaa, X.- Tsananab, E. - Katrakilidis, C. 2015. Growth and Convergence in the EU-15: More Evidence from the Cohesion Countries. In: *7th International Conference, The Economies of Balkan and Eastern Europe Countries in the changed world*, EBEEC 2015, May 8-10, 2015 Procedia Economics and Finance 33 ( 2015 ) 55 – 63
- [3] Corejova, T. - Al Kassiri, M. 2015. The Power of Knowledge-Intensive Services. In: 4th International Conference on Social Sciences and Society (ICSSS 2015), Paris, FRANCE, 2015 , *Book Series: Advances in Education Research*, Vol. 70 Pages: 354-357 Published: 2015
- [4] Corejova, T., Al Kassiri, M., 2016. Knowledge as the Key to the Global Cooperation and Its Important Role Among Nations. In: 3rd Int. Conf. on PES 2016, ed. Lee, G. *Book series: Lecture Notes in Earth Sciences-LNES*. Vol. 4, Pages: 181-183, 2016, Bangkok, Thailand
- [5] Corejova, T., Al Kassiri, M., 2015. The Power of Knowledge-Intensive Services. In: 4th International Conference on Social Sciences and Society (ICSSS 2015), Paris, FRANCE, 2015 , *Book Series: Advances in Education Research*, Vol. 70 Pages: 354-357 Published: 2015
- [6] Corejova, T., Rostasova, M. 2015. Regional development, Innovation and Creativity. In: *Proceedings from IX. Int. Conf. On Applied Business Research (ICABR2014)*, Talca, Chile Oct 06-10,2014, Book Group Authors: Mendel Univ. Brno, p. 114-127, 2015
- [7] Drienikova, K. - Zubalova, L. 2013. *Zahranicnoobchodná politika EÚ v meniacich sa podmienkach globálneho hospodárskeho prostredia*. Bratislava: Vydavateľstvo EKONÓM

- [8] Engelhardt, W. H. 1996. Effiziente Customer Integration im industriellen Service Management, in: Kleinaltenkamp, M., Fließ, S., Jakob, F. (Eds.): *Customer Integration*, Wiesbaden 1996, pp. 73-89.
- [9] Engelhardt, W. H., Kleinaltenkamp, M., Reckenfelderbäumer, M. 1993. Leistungsbündel als Absatzobjekte, Ein Ansatz zur Überwindung der Dichotomie von Sach- und Dienstleistungen, in: *ZfbF*, Vol. 45 (1993), No. 5, pp. 395-426.
- [10] Fisk, R. P., Grove, St. J., Joby, J. 2004. *Interactive Services Marketing*, 2nd ed., Boston (MA) 2004.
- [11] Franken, B. 2009. The Relevance Of Industrial Services In Business-To-Business Relationships. An Empirical Study In The Machine And Plant Construction Industry And The Chemical Industry. *Dissertation*, University of Zilina, Zilina, Slovakia, 2009
- [12] Fraunhofer IPT, Droege & Comp. 2006. *Internationale Servicestrategien im Maschinenbau 2006*, Aachen, Düsseldorf 2006.
- [13] Gill, C. 2004. Architektur für das Service-Engineering zur Entwicklung von technischen Dienstleistungen, *Schriftenreihe Rationalisierung und Humanisierung*, Aachen 2004.
- [14] Grönroos, Ch. 1998. Marketing Services, The case of a missing product, in: *Journal of Business and Industrial Marketing*, Vol. 13 (1998), No. 4/5, pp. 322-328.
- [15] Grönroos, Ch. 1990. Service Management and Marketing, Managing the moment of truth in service competition, Lexington (MA) 1990.
- [16] Hill, Ch. W. L. 1998. *International Business: competing in the global marketplace*. Irwin/McGraw-Hill. ISBN 0-256-27053-8
- [17] Hinloopen, J. - Marrewijk, Ch. 2000. *On the Empirical Distribution of the Balassa Index*. Dostupné 19. 06. 2015 na <http://www2.econ.uu.nl/users/marrewijk/eta/pdf%20files/balassa%20wwa.pdf>
- [18] Homburg, C., Garbe, B. 1996. Towards an Improved Understanding of Industrial Services, Quality Dimensions and Their Impact on Buyer-Seller Relationships, in: *Journal of Business-to-Business Marketing*, Vol. 6 (1999), No. 2, pp. 39-71.
- [19] Homburg, C., Krohmer, H. 2003. Marketingmanagement, Strategie – Instrumente – Umsetzung – Unternehmensführung, Wiesbaden 2003.
- [20] Jankalova, M. 2013. Conception based on definition of business factors of successfulness for the support of reaching the excellence of enterprise subjects. In: *Procedia – social and behavioural sciences*. ISSN 1877-0228. Vol. 81, s. 531-535
- [21] KastakovA, E. - Ruzekova, V. 2014. *Operácie v zahraničnom obchode – teória a prax*. Bratislava: Vydavateľstvo EKONÓM.
- [22] Kastakova, E. 2015. Odhalené komparatívne výhody Slovenska pri prenikaní na zahraničné trhy. *Studia commerciaa Bratislavensia*, No. 31 (3/2015), vol. 8, p. 384-392
- [23] Kotler, Ph., Armstrong, G., Saunders, J., Wong, V. 2006. *Grundlagen des Marketing*, 4th ed., München 2006.
- [24] Kotler, Ph., Wong, V., Saunders, J., Armstrong, G. 2005. *Principles of Marketing*, 4th ed., Harlow 2005.
- [25] Kotler, Ph., Wong, V., Saunders, J., Armstrong, G. 2008. *Principles of Marketing*, 5th ed., Harlow 2008.
- [26] Kvasnicova, T.- Kremenova, I.- Fabus, J. 2016. From an analysis of e-services definitions and classifications to the proposal of new e-service classification. In: *Procedia - Economics and finance*. ISSN 2212-5671. Vol. 39 (2016), s.192-196.
- [27] Langeard, E. 1981. Grundfragen des Dienstleistungsmarketing, in: *ZFP*, Vol. 3 (1981), No. 4, pp. 233-240.
- [28] Lay, G. 2002. Serviceprovider Industry, Industrial Migration from Manufacturing to Selling Products and Services, Fraunhofer Institute Systems and Innovation Research, Karlsruhe 2002.

- [29] Lay, G., Jung Erceg, P. (Eds.) 2002. Produktbegleitende Dienstleistungen, Konzepte und Beispiele erfolgreicher Strategieentwicklung, Berlin et al. 2002.
- [30] Lehmann, A. 1995. Dienstleistungsmanagement - Strategien und Ansatzpunkte zur Schaffung von Servicequalität, Stuttgart 1995.
- [31] Madlenakova, L. – Madlenak, R. – Drozdiel, P. – Kurtev, I. 2015. Layers and processes in the model of technological postal system. In: *Transport and Telecommunication*, Vol. 16, issue 4. 2015, ISSN: 14076160
- [32] Madlenak, R., Madlenakova, L. 2015. The Differences in Online Advertising Acceptance in China and Slovakia, *International Conference on Management Engineering and Management Innovation*, Changsha, Peoples R China, 45-49.
- [33] Majercakova, M. 2014. Vplyv regulácie na vývoj roamingových cien operátorov v Slovenskej a Českej republike. In: *IPoCC - International Postal and e-Communications Conference*, proceedings, Pardubice, September 18th-19th, 2014. ISBN 978-80-86530-94-9. - CD-ROM, s. 132-137.
- [34] Meffert, H., Bruhn, M. 2003. *Dienstleistungsmarketing, Grundlagen, Konzepte, Methoden*, 4th ed., Wiesbaden 2003.
- [35] Meffert, H., Bruhn, M. 2006. *Dienstleistungsmarketing, Grundlagen, Konzepte, Methoden*, 5th ed., Wiesbaden 2006.
- [36] Meyer, A. 1998. *Dienstleistungs-Marketing, Erkenntnisse und praktische Beispiele*, 8th ed., München 1998.
- [37] Meyer, A., Mattmüller, R. 1994. *Qualität von Dienstleistungen*, Wiesbaden 1994.
- [38] Nüttgens, M., Heckmann, M., Luzius, M. J. 1998. Service Engineering Rahmenkonzept, in: *IM – Fachzeitschrift für Information, Management und Consulting, Sonderausgabe Service Engineering*, August 1998, pp. 14-19.
- [39] OECD. The global innovation index 2011 - 2016. [www.oecd.org](http://www.oecd.org)
- [40] OECD, 2018. <https://data.oecd.org/trade/trade-in-services.htm>
- [41] OECD, 2018. *Statistics on International Trade in Services*, Volume 2017 Issue 2. Detailed Tables by Partner Country. DOI:<https://dx.doi.org/10.1787/sits-v2017-2-en>
- [42] Porter, M. E. 1985. *Competitive Advantage*, New York 1985.
- [43] Porter, M. E. 1980. *Competitive Strategy*, New York 1980.
- [44] Vargo, ST. L.- Lusch, R. F. 2004. The four service marketing myths, in: *Journal of Service Research*, Vol. 6 (2004), No. 4, pp. 324-335.
- [45] Scheuch, F. 2002. *Dienstleistungsmarketing*, München 2002.
- [46] Schmidt, N. 2000. Tertiarisierung – Ende der Industriegewerkschaften? Zum Verhältnis von Industriesektor und industriellen Dienstleistungen, in: Peters, J. (Ed.), *Dienstleistungsarbeit in der Industrie*, Hamburg 2000, pp. 20-49.
- [47] Steffen, D. 2006. Die Potenzialqualität von Dienstleistungen, Konzeptualisierung und empirische Prüfung, Wiesbaden 2006.
- [48] Vargo, St. L., Lusch, R. F. 2004. The four service marketing myths, in: *Journal of Service Research*, Vol. 6 (2004), No. 4, pp. 324-335.
- [49] Vokorokosova, R. (2004). *Komparatívne a konkurenčné výhody v období globalizácie*. Bratislava: Vydavateľstvo EKONÓM.
- [50] Zeithaml, V. A.- Bittner, M. J. 2000. *Services Marketing*, 2nd ed., Boston et al. 2000

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