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Review Paper

INTERSECTORAL LINKAGES AND THEIR CONTRIBUTION TO ECONOMIC GROWTH IN THE REPUBLIC OF SERBIA

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Abstract. *The high level of interconnection between economic sectors, namely agriculture, manufacturing and the service sector, imposes the need to understand intersectoral structural changes and transfer of resources between sectors in order to perceive their contribution to economic development. Based on the rich information base compiled by data from various national and international statistic sources, intersectoral structural changes in the Republic of Serbia as one of the transition economies are analysed from different aspects. The paper deals primarily with the share of economic sectors in the gross domestic product. Further, it points to the participation of economic sectors in overall employment, but also in international trade. The research goal is to analyze the structural changes in the Serbian economy, identify the direction of resource transfer between sectors, as well as their contribution to the economic development measured by different indicators.*

Key words: *intersectoral linkages, structural changes, economic growth, Republic of Serbia.*

JEL Classification: E01, O11, O40

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1. INTRODUCTION

The economic growth of developed countries is characterized by the reallocation of resources from agriculture to non-agricultural activities, accompanied by further shifts from manufacturing to the service sector.

In general, several important phases of these changes can be distinguished (Adelman, 1999, pp. 103-134). In the first stage of development, a large part of the active workforce is related to agriculture. Along with the progress, there is a movement of the labour force from agriculture to the manufacturing and service sector. The service sector also advances simultaneously with manufacturing due to its multiple interconnection, primarily in the domain of transport, distribution and finance. Therefore, both sectors show an increase in relative importance in relation to agriculture. However, over a certain period of economic development, the participation of manufacturing in the total employment is stabilized, while on the other hand the service sector continues to expand at the expense of the agricultural sector. In the final stage of development, the economy reaches its peak. During this phase, the service sector continues to progress, but now at the expense of manufacturing whose relative significance is decreasing. If the service sector continues to grow and there is no increase in the total active labour force, this increase is possible only with a significant reduction of employment in manufacturing as well (Kenneth et al., 1992, pp. 2).

The economic justification for such long-term movement between sectors can be found both on the supply and demand side. Firstly, the relative importance of agriculture should be considered. On the supply side, a large increase in productivity leading to an increase in agricultural production is a result of a mechanization development, improved transport, greater use of fertilizers and pesticides, as well as the overall advancement of scientific knowledge and techniques of agricultural management. However, productivity growth is not accompanied by a steady increase in demand for agricultural products (Johnston, 1990, pp. 1109-1123). The growth in income per capita usually goes hand in hand with a decrease in the income elasticity for demand of food, which ends up with the creation of surplus products. As a result, there is a decline in agricultural product prices, profitability and farmers' earnings, and the movement of workers from agriculture due to lack of work or inadequate salaries (Kenneth et al., 1992, pp. 5).

On the other hand, an increase in the relative importance of the service sector can be also explained by factors on the supply and demand side (Hayami and Godo, 2005, p. 32). The original explanations focused on the demand side. High income elasticity of demand for services at a high level of income per capita indicates the prosperity of the economy where more revenue is allocated and spent on services. However, only a small part of the employment growth in the service sector can be justified by the demand for services. Interestingly, the rise in some of the services is closely linked to the rising demand for both agricultural and manufacturing products (e.g. travel, entertainment, etc.) (Kenneth et al., 1992, pp. 5).

Certain movements within the economy of the Republic of Serbia (further: Serbia or RS) as one of the transition economies also indicate a change in sectors' relative importance. The structure of the Serbian economy has been constantly evolving in response to ever-changing domestic and international conditions. Serbia has had a period of rapid structural changes with a changing external environment, but also an

internal environment with regards to the changed demographics. While the external environment has special significance in the secondary sector, the main factors of the structural changes in the agricultural sector are internal (although often with an international dimension).

Unlike the agricultural sector, the service sector in Serbia has been unstoppable in the previous period. Also, manufacturing shifted to the production of knowledge-based products in order to put emphasis on design and other value-added components. Computerization and information technology have replaced thousands of office workers who have sought work in other service activities.

In economic theory is widely accepted the existence of interrelation between economic growth and structural changes, whether measured by the employment share of economic sectors or through their participation in the realized domestic or international value (Dietrich, 2009). Therefore, the paper primarily focuses on intersectoral structural changes. After examining the theoretical framework of the concept of structural changes, intersectoral structural changes in the Serbian economy are elaborated from the aspect of sectors' share in gross domestic product, employment and international trade.

2. Theoretical Framework: The Conceptual Basis of Structural Changes in the Economy

Structural changes, their theoretical perception and analysis of the factors that have caused them, have attracted the attention of prominent economists in the past (Krstić et al., 2015, pp. 31-44). However, despite the rich research base in this field, there are certain doubts in the literature regarding interpretation of the concept of structural changes. Namely, the term "structural change" has not always been used in this form bearing in mind that economists dealt with its analysis, but using a different terminology (Quatraro, 2012, pp. 37-38).

Structural changes, analyzed in that period as structural transformations, were one of the main topics in the classical economy. Neoclassical economists have not considered structural changes as an important factor of economic development, but only as the automatic result of market development. While neoclassical economists have not attached great importance to this problem, classical economists have considered structural changes from the perspective of moving labour from agriculture as a traditional activity, to manufacturing and services as modern activities (Memedovic & Lapadre, 2010, p. 4).

One of the most prominent representatives of the classical economy, Adam Smith, emphasized in his work "Wealth of Nations" (1776) that agriculture is mainly specializing in poorer countries, where the nature of tasks being performed determines the division of labour and thus limits production efficiency. On the other hand, richer countries specialize in manufacturing, bearing in mind that manufacturing activities provide the ability to perform a variety of tasks and thereby increase productivity. At the same time, Smith under structural changes implied carrying out production activities within organizations, and not just a sectoral composition of the economic system (Quatraro, 2012, p. 37).

Apart from Adam Smith, also Simon Kuznec (1930), Artur Burns (1934) and Alan Fisher (1939) greatly contributed to the study of structural changes. Important empirical evidence can be found in their works about the rise and fall of certain economic sectors, but above all the manufacturing sector. They also provided an explanation of factors that have led to changes in industrial leadership in different countries. Bearing that in mind, Kuznec considered structural changes to be one of the important factors of development, although it meant only sectoral changes in employment and production. From this perspective, the economic development of countries and regions is strictly defined by performance of the leading sectors (Krstić et al., 2015, pp. 31-44).

Classical economists, primarily Kuznec, Burns and Fischer, have provided an interpretation of structural changes starting from the three-sector model of the economy. In doing so, the economy can be divided into three major economic aggregates: the primary sector that includes agriculture, fishery and forestry; a secondary sector that includes the production of capital and consumption goods through the combination of capital, labour and intermediate goods; and a tertiary sector that involves the provision of various services. The replacement of the contribution of three main sectors to the overall development of the economy represents the backbone of the classical model (Krstić et al., 2015, pp. 31-44).

Kuznec, as one of the initiators of the empirical analysis of structural changes, has laid the foundations of the so-called theory of slowdown in development. The initial assumption of this theory is the uneven growth rates, as well as the interweaving of cross-sectoral and international dimensions. Starting from this, the achieved level of development of each country depends to a great extent and is determined by the dominant sector of the economy. Therefore, a contribution of Kuznets and his theory of slowdown in development is pointing out important structural transformations (changes) of the economy as one of the crucial features of modern economic growth. At the same time, fundamental assumptions of structural changes are a change in the focus of the economy from agriculture to manufacturing and from manufacturing to services, as well as changes in the scale of production units and a shift towards other forms of organization of economic entities other than their own enterprises (Quatraro, 2012, p. 42).

However, other economists who offered some interpretations of structural changes were also distinguished. For instance, according to Robinson and Sirkin, structural changes are a set of changes in production and demand, trade, and the use of factors reflected in the income per capita increase (Ark, 1995, p. 1). Further, Maklup (1963) puts emphasis on the distribution of factors of production between the economic sectors, territories, various products, occupations, etc. and under structural changes he first of all takes into account different arrangements of production activities in the economy (Quatraro, 2012, p. 37).

"Although the concept of structural changes can be defined in different ways, it most often refers to long-term and lasting changes in the sectoral composition of the state or region during the economic development process. More specifically, structural changes are associated with the modification of a relative importance of different sectors over time, measured by their participation in production and employment" (Krstić et al., 2015, pp. 31-44).

The concept of structural changes is difficult to be uniquely defined due to the complexity of the phenomenon. Also, there is a low possibility of finding a universal method of their measurement. However, it is generally accepted that structural changes can be measured by reallocating capital and labour between sectors and regions, depending on the level being analyzed. Changes in the sector, in markets of goods and services, and in the nature of production processes should also be taken into account (Raiser et al., 2003).

Therefore, structural changes can be identified and monitored having in mind different levels. They occur, above all, in the conditions when companies respond to changes in relative input and output prices, but also to challenges arising from the emergence of new technology and knowledge. However, in the case of the same or similar effects of structural changes to all economic actors within the sector, it is considered that they occur at a sectoral level. Structural changes can also be manifested between sectors as well as within them. Nevertheless, the most intense are those that occur at the macroeconomic level, causing changes of varying intensity in all sectors. Consequently, three levels of structural change can be distinguished (Downes & Stoeckel, 2006, p. 12):

1. At the enterprise level - implementation of modern technology, new management methods, modern production practices, response to changes in relative labour costs, capital and other factors of production;
2. At the sector level - certain structures of companies are favourable under the pressure of competition, but changes occur in the operating environment along with the change in input prices;
3. Between sectors - changes in domestic demand, but also in global terms lead to conditional changes in consumption patterns (usually as a result of demographic changes, the application of modern technology, etc.), the change in the comparative advantage of the economic sectors determines the outcome of the market game.

The key to successful adaptation to structural change is adaptability, flexibility and competitiveness (which leads to innovation and adaptation). These characteristics are associated with a high level of productivity, rising revenue and a low inflation rate in the country. For this reason, macroeconomic policy makers seek to maintain a macroeconomic environment with low interest and unemployment rates. A good macroeconomic and microeconomic policy should be strongly mutually complementary (Downes & Stoeckel, 2006, p. 5).

3. RESEARC RESULTS AND DISCUSSION

3.1. The share of economic sectors in the gross domestic product of the Republic of Serbia

Gross domestic product (GDP) in the last fifty years has been the most often used indicator of economic progress of a country and welfare of its population. This indicator shows how efficiently the economy functions by compressing the total value of state economic activities in only one number (Mankiw, 2002, p. 53).

"GDP represents the market value of all finished goods and services produced within a country over a given period of time" (Mankiw, 2001, p. 208). It can be calculated by summarizing the "value of personal consumption expenditure (consumption of households for goods and services), government expenditure (public expenditures for the provision of goods and services for the future) and net exports (difference in value between government exports and imports)" (Mankiw, 2001, p. 208).

According to the degree of development, measured by GDP per capita, national economies can be classified into three groups: factor-driven, efficiency-driven, and innovation-driven (Table 1).

Table 1 Different levels of the economic development

	Level 1: Factor driven	Transition from level 1 to level 2	Level 2: Efficiency driven	Transition from level 2 to level 3	Level 3: Innovation driven
GDP per capita	<2000	2000-2999	3000-8999	9000-17000	>17000
Subindex "Basic factors"	60%	40-60%	40%	20-40%	20%
Subindex "Efficiency factors"	35%	35-50%	50%	50%	50%
Subindex "Innovation and sophistication factors"	5%	5-10%	10%	10-30%	30%

Source: WEF. (2016-2017). Global Competitiveness Report. Geneva: World Economic Forum, p. 38

The economy is driven by factors of production in the first stage of economic development. Countries at this level of development compete with the engagement of the basic factors of production, primarily human and natural resources. Companies base their competitiveness on low prices and sale of mainly basic products, achieving low productivity and low wages.

As the economy becomes more competitive, it increases productivity and earnings of workers. National economies are moving towards a stage of development that is efficiency driven. At this stage, the production process and product quality should be improved since earnings of workers grow, but prices of products cannot be increased. Competitiveness at this level is focused on higher education, efficient financial market and market of goods and services, etc.

Innovation driven economy as the highest level of a country development encourages companies to produce innovative and distinguished products that will contribute to the overall competitiveness. At this stage of development, in addition to the previously mentioned factors of development, the crucial roles in the economy development belong to intangible forms of capital, such as research and development, science, education, innovation, competencies, etc. Hovewer, the outcome of these fields largely depends on sufficient level of investment, proving that the financial capital is still of high importance at this level of economy development (Frane, 2014, pp. 1-2).

Table 2 shows data for gross domestic product of Serbia in RSD, USD, and EUR in the period 2000-2015.

Based on Table 2, GDP per capita of Serbia in 2015 amounted to 5,235 USD representing half of the value in Efficiency driven stage (3000-8999 USD). Accordingly, Serbia has to increase GDP in order to qualify for the transition to a higher stage.

Table 2 GDP of the Republic of Serbia in RSD, EUR, USD, in the period 2000-2015

	Total mil. RSD	Total mil. EUR	Per capita, EUR	Total mil. USD	Per capita, USD
2000	1,989,783.5	25,717.0	3,421.5	23,593.5	3,139.0
2001	2,089,127.7	12,928.5	1,723.0	11,581.1	1,543.4
2002	2,237,785.6	16,213.8	2,161.8	15,277.3	2,037.0
2003	2,336,593.1	17,486.8	2,337.6	19,755.1	2,640.9
2004	2,547,973.3	19,128.0	2,563.0	23,776.4	3,185.8
2005	2,689,141.9	20,407.6	2,742.7	25,361.2	3,408.4
2006	2,821,026.8	23,610.0	3,185.6	29,603.7	3,994.3
2007	2,987,150.3	28,784.6	3,899.5	39,385.4	5,335.6
2008	3,147,461.2	33,417.9	4,546.5	48,856.6	6,647.0
2009	3,049,387.2	29,967.0	4,093.4	41,658.7	5,690.5
2010	3,067,210.2	29,766.3	4,082.0	39,370.4	5,400.0
2011	3,110,196.1	33,423.8	4,619.0	46,463.7	6,421.0
2012	3,078,619.2	31,683.1	4,400.0	40,675.9	5,648.0
2013	3,157,793.1	34,262.9	4,781.0	45,512.1	6,351.0
2014	3,908,469.6	33,186.0	4,672.0	44,143.1	6,190.0
2015	4,043,467.8	33,491.0	4,720.0	37,145.7	5,235.0

Source: Statistical office of the Republic of Serbia (2005-2016). Statistical Yearbook.

In Table 3, the gross value added and gross domestic product of Serbia from 2000 to 2014 are given. Based on the provided information, all occupations in the analysed period achieved a rise in absolute values in dinars. However, the highest increase is recorded in wholesale and retail sale trade, information and communication, and financial activities. The total gross value added of Serbia in 2014 compared to 2000 increased by 37%, while gross domestic product has been increased by 56%.

Table 4 shows the gross domestic product of Serbia, overall and per economic sectors, in absolute and relative values in the period 2000-2014. The share of primary sector in gross value added in the analyzed period is around 10%, the share of secondary sector is around 30%, and the share of tertiary sector is around 60% in gross value added.

Table 3 Gross value added per occupation and gross domestic product of Serbia, in the period 2000-2014, constant price 2010

	2000	2001	2002	2003	2004	2005	2006	2007
Agriculture, forestry and fishing	223,897	262,560	24,460	227,688	271,093	257,961	257,784	237,455
Mining	24,947	19,126	30,479	34,597	35,570	36,075	39,242	36,671
Manufacturing	428,713	387,339	364,526	368,014	381,653	381,491	388,732	425,533
Electricity, gas and steam supply	64,114	64,895	63,808	72,909	77,755	78,702	82,495	86,613
Water supply and waste water management	31,771	28,423	26,601	29,592	29,878	32,163	32,372	33,275
Construction	82,317	73,650	94,209	116,470	131,611	130,504	150,964	151,241
Wholesale and retail trade, repair of motor vehicles	118,037	109,030	132,120	153,236	183,923	251,227	275,581	315,113
Traffic and storage	79,191	84,031	86,908	92,967	101,493	106,350	123,313	137,448
Accomodation and food services	34,993	30,267	28,607	32,415	32,957	36,178	40,991	38,787
Information and communication	54,840	55,318	64,871	74,040	75,572	85,530	97,398	118,189
Financial and insurance activities	39,007	31,950	35,104	37,547	43,375	51,885	67,912	82,070
Real estate	244,580	247,891	252,198	251,607	253,149	268,004	269,579	271,238
Professional, scientific, innovation and technical activities	89,662	61,312	58,976	54,666	69,689	72,644	82,097	95,664
Administrative and support service activities	30,888	23,515	21,574	24,625	22,543	31,715	32,265	33,702
Public administration and mandatory social security	93,211	93,637	96,120	104,565	111,350	111,027	105,566	105,977
Education	81,028	83,212	90,742	100,238	100,752	93,896	8,925	97,152
Health and social protection	164,235	165,002	178,192	164,812	169,413	175,978	156,892	158,930
Art, entertainment and recreation	23,318	18,806	24,231	30,803	36,064	32,362	31,324	29,915
Other service activities	36,245	32,520	38,565	38,274	46,854	48,444	53,431	48,025
Household activities as an employer	/	/	1,166	1,362	1,491	2,151	2,185	3,049
Gross value added (GVA)	1,912,735	1,876,382	1,923,646	2,000,511	2,171,702	2,276,854	2,379,219	2,506,273
Taxes on products	147,686	261,878	354,700	371,379	418,854	450,830	480,273	515,771
Subsidies on products	26,730	30,953	30,271	28,764	34,246	33,173	34,284	32,793
Gross domestic products (GDP)	1,989,784	2,089,128	2,237,786	2,336,593	2,547,973	2,689,142	2,821,027	2,987,150

	2008	2009	2010	2011	2012	2013	2014
Agriculture, forestry and fishing	258,115	245,814	261,510	263,993	218,348	264,004	269,181
Mining	37,896	33,855	39,964	46,237	49,087	49,712	38,116
Manufacturing	439,706	419,839	418,466	426,237	458,870	484,882	474,874
Electricity, gas and steam supply	85,958	91,421	87,245	90,458	88,180	99,638	70,955
Water supply and waste water management	31,046	31,149	35,131	36,638	36,750	36,444	36,888
Construction	171,052	149,069	145,484	154,069	138,927	133,558	131,578
Wholesale and retail trade, repair of motor vehicles	327,182	298,331	289,462	290,567	292,955	297,416	299,518
Traffic and storage	134,762	128,540	137,687	137,323	126,694	136,261	140,031
Accomodation and food services	35,580	35,365	34,540	31,628	35,458	32,588	31,819
Information and communication	129,482	125,571	129,593	132,926	136,597	136,420	131,160
Financial and insurance activities	97,543	100,035	101,894	100,304	92,250	83,509	81,150
Real estate	282,176	283,885	284,579	285,981	288,791	291,778	287,948
Professional, scientific, innovation and technical activities	102,704	91,859	89,343	92,882	95,942	94,535	95,733
Administrative and support service activities	38,973	41,775	44,350	43,507	45,773	43,814	43,803
Public administration and mandatory social security	106,881	111,454	111,198	112,532	117,736	120,492	118,847
Education	102,826	104,851	105,363	106,982	108,776	110,275	111,204
Health and social protection	164,889	166,001	164,644	169,502	169,618	169,977	171,120
Art, entertainment and recreation	30,527	29,824	30,113	27,906	30,130	29,530	29,897
Other service activities	48,722	46,103	44,108	42,578	41,058	39,195	40,243
Household activities as an employer	3,023	2,670	2,692	2,532	2,517	2,531	2,724
Gross value added (GVA)	2,627,770	2,537,137	2,557,364	2,594,783	2,574,024	2,658,472	2,604,582
Taxes on products	554,878	544,112	543,004	549,024	531,759	530,515	526,543
Subsidies on products	34,235	31,869	33,158	33,611	27,497	32,727	32,790
Gross domestic products (GDP)	3,147,461	3,049,387	3,067,210	3,110,196	3,078,619	3,157,793	3,099,964

Source: Statistical office of the Republic of Serbia (2005-2016). Statistical Yearbook.

Table 4 Gross domestic product per economic sectors in Serbia, in the period 2000-2014 (constant price 2010, mil. RSD)

Year	Gross domestic product	Agriculture		Manufacturing		Service sector	
		Mil. RSD	% of total GDP	Mil. RSD	% of total GDP	Mil. RSD	% of total GDP
2000	1,944,993.2	223,896.7	12%	631,862.1	32%	1,089,234.4	56%
2001	1,872,481.1	262,559.7	14%	573,432.7	31%	1,036,488.7	55%
2002	1,933,596.9	244,600.1	13%	579,622.9	30%	1,109,373.9	57%
2003	2,010,427.1	227,687.6	11%	621,582.8	31%	1,161,156.7	58%
2004	2,176,180.5	271,092.8	12%	656,466.0	30%	1,248,621.7	57%
2005	2,284,289.5	257,961.1	11%	658,934.8	29%	1,367,393.6	60%
2006	2,379,372.7	257,784.0	11%	693,804.0	29%	1,427,784.7	60%
2007	2,506,045.2	237,455.2	9%	733,332.8	29%	1,535,257.2	61%
2008	2,629,041.7	258,115.2	10%	765,657.3	29%	1,605,269.2	61%
2009	2,537,409.2	245,813.6	10%	725,332.8	29%	1,566,262.8	62%
2010	2,557,364.2	261,510.4	10%	726,288.7	28%	1,569,565.1	61%
2011	2,594,782.3	263,993.0	10%	753,640.3	29%	1,577,149.0	61%
2012	2,574,454.6	218,348.1	8%	771,813.4	30%	1,584,293.1	62%
2013	2,656,558.9	264,003.6	10%	804,233.8	30%	1,588,321.5	60%
2014	2,604,582.4	269,181.0	10%	752,411.0	29%	1,585,197.0	61%

Source: Statistical office of the Republic of Serbia (2005-2016). Statistical Yearbook.

Based on the previous table, the tertiary sector has increased its relative importance over years measured by its share in GDP, from 56% in 2000 to 61-62% at the end of analyzed period. The primary sector achieved the biggest share in GDP in 2001 (14%) and the smallest in 2012 (8%), while secondary sector showed very small fluctuations in the share of GDP from 32% in 2000 to 28% in 2010.

3.2. The share of economic sectors in the overall employment of the Republic of Serbia

In the last two centuries, drastic changes have been occurring in employment and productivity between the economic sectors. History has shown that economies changed from predominantly agricultural, via manufacturing, to service-focused economies.

The economic development of industrialized countries has led to the transformation of society. In countries striving for industrialization, agriculture has served as a source of resources that can be invested in economic development activities. Among other things, gradually there was a migration of the agricultural population to manufacturing and service sector, and then at a higher level of development from manufacturing into the service sector.

Table 5 shows the movement of overall employment in Serbia in the period from 2002 to 2014, as well as in all economic activities (agriculture, manufacturing, and service activities).

The number of employees in Serbia is in constant decline, from 1.6 million in 2002 to 1.3 million in 2014. Observed by sectors in the analyzed period, the employees in agriculture registered a decline in the share of total employment in Serbia from 4.82% to 2.36%. The relative share of manufacturing in Serbian total employment also drops, from 44.13% in 2002 to 32.23% in 2014. Unlike the primary and secondary sectors,

the participation of the tertiary sector in the overall employment of Serbia increased in the observed period from 52.29% to 65.41%, thus representing a dominant share.

Table 5 Employees per sector in Serbia, in the period 2002-2014

Year	Number of employees	Agriculture		Manufacturing		Service sector	
		Absolute	Relative	Absolute	Relative	Absolute	Relative
2002	1,676,835	80,888	4.82%	739,932	44.13%	856,044	51.05%
2003	1,611,632	74,445	4.62%	694,420	43.09%	842,771	52.29%
2004	1,580,140	70,073	4.43%	650,518	41.17%	859,555	54.40%
2005	1,546,471	65,058	4.21%	624,120	40.36%	857,295	55.44%
2006	1,471,750	59,395	4.04%	578,809	39.33%	833,548	56.64%
2007	1,432,851	55,145	3.85%	543,154	37.91%	834,555	58.24%
2008	1,428,457	49,528	3.47%	522,026	36.54%	856,905	59.99%
2009	1,396,792	46,129	3.30%	486,468	34.83%	864,198	61.87%
2010	1,354,637	37,392	2.76%	459,006	33.88%	858,242	63.36%
2011	1,342,892	34,815	2.59%	449,963	33.51%	858,113	63.90%
2012	1,341,114	33,002	2.46%	443,726	33.09%	864,385	64.45%
2013	1,338,082	33,715	2.44%	438,990	32.81%	866,378	64.75%
2014*	1,323,831	31,288	2.36%	426,670	32.23%	865,871	65.41%

Source: Statistical office of the Republic of Serbia (2005-2016). Statistical Yearbook.

According to the data of the Statistical Office of the RS, employment in Serbia in 2015 amounted to 2.574.200, being higher for 0.6% compared to the previous year. However, registered employment in 2016 amounted to 2.009.784 (Statistical office of the Republic of Serbia, 2017).

Conducted analysis indicates that structural changes in the Serbian economy have contributed to the reduction of agricultural and manufacturing relative importance and increased relative importance of the service sector, measured by their participation in gross domestic product and overall employment.

Salaries of employees in Serbia at the economy and sector level recorded slight fluctuations in their nominal and real values in the previous period. In 2015, the average earnings of employees in Serbia registered a nominal decline of 0.5% and a real fall of 2.4%. However, "the highest increase in wages was recorded in the following sectors: other service activities (nominal growth of 10.1% and real 8.0%), arts, entertainment and recreation (nominal growth of 8.4% and real growth of 6.4 %) and health and social protection (nominal growth of 6.4% and real growth of 4.4%). On the other hand, the largest negative changes were identified in the sectors: agriculture, forestry and fisheries (nominal decline of 10.2% and real growth of 11.9%), mining (nominal decrease of 7.1% and real growth of 8.8%) and manufacturing (nominal decline of 6.8% and real of 8.5%)" (Statistical Office of the RS, 2016, pp. 57-58).

* A new methodology for monitoring registered employment of Serbia is being applied since 2015, combining data from the two official statistical sources. The new definition of registered employment is in line with the standards of the European Union. Also, the methodology of the Labour Force Survey was changed in 2015. The system of grading, increased sample size, continuous research and new method of data collection - CAPI (Computer Assisted Personal Interviewing) have been changed. Accordingly, taking into account the changes in the methodology, the data from 2015 are not included in the analysis.

The average gross and net salaries in Serbia in the period from 2003 to 2015 are given in Table 6 and Table 7.

Table 6 Average gross salaries in Serbia, per occupation, 2003-2015

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Republic of Serbia, total	16,612	20,555	25,140	31,745	38,744	45,674	44,147	47,450	52,733	57,430	60,708	61,426	61,145
Agriculture, forestry and water management	13,129	15,569	20,301	25,951	29,680	37,204	38,421	38,304	43,857	49,948	51,916	51,522	52,435
Agriculture, hunting and services	12,217	14,026	18,195	23,297	26,256	33,615	35,449	36,603	42,703	48,882	50,635	49,712	51,737
Forestry	17,506	23,883	28,790	35,500	41,773	46,854	45,593	47,952	50,969	55,402	58,505	59,253	57,528
Water management	20,479	26,050	34,020	42,238	48,655	55,946	53,683	/	/	/	/	/	/
Fishing	15,378	17,840	24,085	23,724	21,699	29,113	27,147	32,818	34,506	44,102	44,107	48,289	38,819
Mining and quarrying	22,091	26,352	30,745	38,992	48,978	55,835	61,226	69,582	80,605	89,521	96,051	97,900	99,521
Manufacturing	12,996	16,065	20,366	25,830	30,620	36,540	35,166	40,101	45,269	49,236	51,742	53,094	56,471
Production of electricity, gas and water	23,778	29,426	35,590	42,488	53,128	57,886	62,227	61,000	69,909	75,934	79,231	73,156	79,850
Construction	15,175	18,443	22,389	28,219	34,944	42,271	37,897	40,985	45,796	48,159	49,492	51,778	57,023
Wholesale and retail trade, repair	13,704	17,444	22,621	28,926	34,685	42,367	32,746	35,560	39,010	42,598	45,677	45,801	46,969
Hotels and restaurants	11,689	14,037	17,665	21,516	25,844	30,234	24,895	25,851	28,588	31,303	33,044	33,620	36,449
Traffic, storage and connection	20,113	24,561	29,737	36,029	41,568	48,758	51,350	58,090	65,185	72,086	77,563	83,897	86,839
Financial intermediation	34,601	43,870	56,348	70,864	82,041	91,023	94,568	96,920	99,978	105,414	109,470	105,479	107,340
Real estate, renting	20,251	24,730	32,076	37,039	47,154	52,116	46,840	51,326	56,246	61,378	65,571	66,981	68,079
Public administration and social security	22,742	27,207	33,210	40,542	47,728	54,273	55,363	58,330	65,427	71,200	75,098	74,738	67,151
Education	18,243	21,688	27,265	33,166	40,286	48,299	49,958	50,141	53,273	56,906	59,573	59,961	55,860
Health and social work	18,817	23,064	26,792	32,790	42,900	48,864	50,444	50,503	54,691	57,803	60,569	60,359	56,307
Other communal and social services	19,707	24,191	28,846	33,866	38,641	44,281	42,267	41,807	42,846	47,258	50,637	43,371	45,899

Source: Statistical office of the Republic of Serbia (2005-2016). Statistical Yearbook.

Based on Table 6, gross salaries in agriculture in 2003 amounted only to 76% of the average gross salaries in Serbia. With mild oscillations in other analyzed years, in 2014 they make up 85% of average gross salaries in Serbia. Within the primary sector, the lowest gross salaries are recorded in the activities of agriculture, hunting and services, which are at the same time the lowest or one of the lowest gross salaries in comparison to all other activities in Serbia. The largest gross salaries in the whole observed period were recorded within the financial intermediation, which are almost twice than average for Serbia. Observed by sectors, both secondary and tertiary sectors on average achieve higher gross salaries than the national average. However, at the beginning of the analyzed period (2003), the tertiary sector recorded gross salaries for 20% higher than the national average, and the secondary 11%. At the end of the analyzed period, in 2015, a larger difference compared to the national average is recorded in the secondary sector (20%), and smaller in the tertiary (4%).

Table 7 Average gross salaries in Serbia, per occupation, 2003-2015

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Republic of Serbia, total	11,500	14,108	17,443	21,707	27,759	32,746	31,733	34,142	37,976	41,377	43,932	44,530	44,432
Agriculture, forestry and water management	9,076	10,658	13,835	17,683	21,244	26,696	27,582	27,591	31,545	35,970	37,404	37,212	37,908
Agriculture, hunting and services	8,437	9,592	12,396	15,875	18,823	24,179	25,497	26,380	30,733	35,238	36,491	35,934	37,398
Forestry	12,162	16,400	19,619	24,189	29,823	33,488	32,627	34,000	36,558	39,734	42,073	42,653	41,596
Water management	14,177	17,907	23,243	28,778	34,616	39,809	38,275	/	/	/	/	/	/
Fishing	10,659	12,214	16,341	16,137	15,592	20,921	19,569	23,692	24,944	31,838	31,990	35,016	28,145
Mining and quarrying	15,373	18,113	20,989	26,739	34,818	39,729	43,650	49,630	57,436	63,726	68,338	69,660	71,077
Manufacturing	8,990	11,034	13,945	17,710	22,066	26,391	25,539	29,057	32,785	35,748	37,706	38,735	41,148
Production of electricity, gas and water	16,486	20,186	24,369	28,994	37,867	41,222	44,239	43,500	49,893	54,176	64,554	57,873	57,133
Construction	10,472	12,597	15,235	19,195	24,869	30,178	27,175	29,459	32,950	34,713	35,747	37,493	41,744
Wholesale and retail trade, repair	9,474	11,953	15,498	19,863	24,934	30,561	23,757	25,830	28,475	31,078	33,614	33,827	34,606
Hotels and restaurants	7,991	9,498	12,000	14,678	18,614	21,800	18,176	18,899	20,902	22,832	24,362	24,885	26,781
Traffic, storage and connection	13,911	16,854	20,341	24,724	29,821	35,046	36,880	41,676	46,878	51,696	56,674	62,250	64,714
Financial intermediation	24,157	30,347	38,852	48,896	58,951	65,419	67,899	70,045	71,938	76,195	79,168	76,432	77,840
Real estate, renting	14,052	17,028	22,007	25,387	33,888	37,531	33,851	37,041	40,581	44,395	47,675	48,768	50,796
Public administration and social security	15,767	18,673	22,633	27,630	34,055	38,730	39,494	41,675	46,728	50,824	53,826	53,413	48,161
Education	12,574	14,826	18,550	22,583	28,781	34,451	35,666	35,867	38,152	40,764	42,757	43,031	40,217
Health and social work	13,063	15,868	18,328	22,334	30,654	34,878	36,030	36,149	39,220	41,456	43,620	43,445	40,649
Other communal and social services	13,635	16,616	19,693	23,099	27,648	31,674	30,335	30,127	31,749	34,184	44,173	36,990	35,866

Source: Statistical office of the Republic of Serbia (2005-2016). Statistical Yearbook.

On the other hand, Table 7 shows net earnings in all activities in Serbia. The ratio of net salaries is the same as for gross salaries. Therefore, in agriculture only around 80% of average net salaries in Serbia are realized. They also represent the lowest earnings in relation to other activities. Both the secondary and tertiary sector as a whole realize their net earnings at the sector level above the national average. As with gross salaries, at the beginning of the analyzed period, the tertiary sector as a whole has higher average salaries compared to the secondary (20% compared to 11%), while this ratio changes at the end of the analyzed period in favor of the secondary (18% compared to 4%).

3.3. The share of economic sectors in international trade of the Republic of Serbia

Commercial liberalization, both at regional and global level, has created a global environment suitable for the growth and expansion of world trade. New technologies, such as computers, telecommunications and other media, have contributed to the integration of the world market.

As the most traditional form of international business activity, international trade involves the exchange of goods and services across national borders. It allows businesses and distributors to search for goods, services, or parts of products in other countries.

Foreign trade is an important indicator of economic development of the country and it brings many benefits to both exporting and importing countries. While exporting countries earn by exporting surplus of their products, importing countries have access to better products and thus affect the living standard of the population. The main determinants of exports are the presence of entrepreneurial spirit, access to marketing, transport and other services, exchange rate, but also the state trade policy and policies of the exchange rate. On the other hand, imports are mostly influenced by income per capita, prices of imports, exchange rate, public policies related to trade and exchange rate and availability of foreign currencies (Seyoum, 2009, pp. 9-10).

There are numerous reasons in favor of international trade, such as cost efficiency, the use of advanced technology, new production methods, specialization, improvement of living standards, etc. International trade also allows businesses to access resources that are not available in their countries. However, in addition to providing consumers with a wide range of different products, international trade increases revenue and employment. By encouraging the development of agriculture, manufacturing and service sectors, foreign trade offers greater employment opportunities in these sectors. Also, foreign trade stimulates market competition and thus leads to the improvement of production technology, production process and product quality. The ultimate benefit is realized by consumers who receive quality and varied products at affordable prices.

Tables 8 and 9 show the values of Serbian exports and imports in millions of dinars for the period from 2003 to 2015. Therefore, based on the values from the tables, the absolute value of Serbian exports and imports in the observed period is growing both in total and by sectors. In the first half of the analyzed period (from 2003 to 2009), the value of imports is about twice higher than the value of exports, while in the second half of the analyzed period (from 2010 to 2015) the value of exports and imports is approximating. Within the primary sector, agriculture, hunting and services account for almost 95% of foreign trade, while the rest is farming, forestry and fisheries.

In Table 10 relative values of exports and imports in the primary, secondary and tertiary sectors of Serbia are given.

Table 8 The value of Serbian exports, according to the classification of activities, in mill.RSD for the period 2003-2015

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Republic of Serbia, total	158,782	207,035	299,919	428,051	514,866	603,550	559,851	762,974	860,084	990,742	1,244,715	1,307,883	1,453,767
Agriculture, forestry and fishing	4,048	7,671	13,698	20,482	20,864	21,695	36,058	56,646	68,822	85,006	73,685	86,997	102,797
Agriculture, hunting and services	3,787	6,863	12,841	19,436	19,796	21,145	35,775	56,083	68,219	84,425	72,989	85,931	101,288
Growing, exploitation of forests and services	261	633	765	974	974	470	226	480	525	496	569	766	1,201
Fishery	/	175	92	72	94	80	57	83	78	85	127	300	308
Mining	715	1,016	1,467	2,362	3,340	2,670	2,211	3,420	6,688	6,605	7,445	6,986	5,673
Manufacturing industry	94,391	196,229	281,320	400,140	484,217	553,198	493,794	660,551	744,300	856,898	1,113,455	1,178,604	1,312,237
Electricity, gas and water	690	493	2,252	4,836	6,272	20,118	21,611	36,154	34,053	34,510	46,989	27,081	24,823
Information and communication	13,933	/	/	/	2	5,288	5,361	5,461	5,541	6,992	5,727	7,751	7,802
Other service activities	24,726	209	563	92	43	450	603	594	540	623	248	282	330
Unclassified	20,279	1,418	618	138	130	134	172	150	140	109	136	151	104

Source: Statistical office of the Republic of Serbia (2005-2016). Statistical Yearbook.

Table 9 The value of Serbian exports, according to the classification of activities, in mill.RSD for the period 2003-2015

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Republic of Serbia, total	429,503	629,838	702,280	878,227	1,115,746	1,340,088	1,064,271	1,280,676	1,452,140	1,665,009	1,749,932	1,815,996	1,978,653
Agriculture, forestry and fishing	2,588	17,212	18,461	21,831	21,807	27,812	26,489	38,544	42,347	50,764	50,600	55,787	65,853
Agriculture, hunting and services	2,480	14,213	15,294	17,477	17,638	22,758	25,511	37,376	41,209	49,483	49,087	54,017	63,903
Growing, exploitation of forests and services	108	896	815	1,688	2,353	2,637	429	575	491	440	574	710	856
Fishery	/	2,103	2,352	2,666	1,816	2,417	549	593	647	841	939	1,060	1,094
Mining	1,571	82,475	120,245	151,804	140,573	198,848	124,943	168,647	183,357	169,090	190,351	173,482	178,643
Manufacturing industry	147,555	524,291	560,599	698,746	737,152	827,324	690,024	971,646	1,134,224	1,304,507	1,369,241	1,428,782	1,543,860
Electricity, gas and water	/	1,648	562	4,751	10,095	11,515	11,117	18,887	17,264	26,066	23,275	23,467	20,552
Information and communication	154,292	/	/	/	/	/	6	8,145	5,364	5,884	6,787	6,382	6,198
Other service activities	5,880	63	86	74	66	171	39	1,400	75	169	93	107	65
Unclassified	117,617	4,132	2,053	951	206,054	274,417	205,840	73,408	69,509	108,529	109,584	127,985	163,481

Source: Statistical office of the Republic of Serbia (2005-2016). Statistical Yearbook.

Table 10 Share of agriculture, manufacturing and services in Serbian exports and imports, for the period 2003-2015

Year	Agriculture		Manufacturing		Service sector		Nonaligned	
	Export	Import	Export	Import	Export	Import	Export	Import
2003	2.55%	0.60%	60.33%	34.72%	24.35%	37.29%	12.77%	27.38%
2004	3.71%	2.73%	95.51%	96.60%	0.10%	0.01%	0.68%	0.66%
2005	4.57%	2.63%	95.04%	97.03%	0.19%	0.01%	0.21%	0.29%
2006	4.78%	2.49%	95.16%	97.39%	0.02%	0.01%	0.03%	0.11%
2007	4.05%	1.95%	95.91%	79.57%	0.01%	0.01%	0.03%	18.47%
2008	3.59%	2.08%	96.43%	44.43%	0.95%	0.01%	0.02%	20.48%
2009	6.44%	2.49%	92.46%	77.62%	0.07%	0.55%	0.03%	19.34%
2010	7.42%	3.01%	91.76%	90.51%	0.79%	0.75%	0.02%	5.73%
2011	8.00%	2.92%	91.27%	91.92%	0.71%	0.37%	0.02%	4.79%
2012	8.58%	3.05%	90.64%	90.07%	0.77%	0.36%	0.01%	6.52%
2013	5.92%	2.89%	93.83%	90.45%	0.48%	0.39%	0.01%	6.26%
2014	6.65%	3.07%	92.72%	89.52%	0.61%	0.36%	0.01%	7.05%
2015	7.07%	3.33%	92.36%	88.09%	0.56%	0.32%	0.01%	8.26%

Source: Statistical office of the Republic of Serbia (2005-2016). Statistical Yearbook.

The share of agriculture in the total export of Serbia increased from 2.55% in 2003 to 7.07% in 2015 (Table 10). Also, agriculture has slightly increased its share in total imports (3.33% in 2015 compared to 0.60% in 2003). Manufacturing is constantly registering a significant share in exports (on average 90%) and in imports (on average 85%) of Serbia. The service sector, on the other hand, has an extremely low share in total exports and imports throughout the analyzed period. With a relative share in exports and imports of around 1%, the tertiary sector has the least share in Serbian exports and imports compared to primary and secondary sectors.

4. CONCLUSION

Structural changes can be considered as a result of a process in which economies, both national and global, but also sectors and regions, show their ability to survive in conditions of fierce competition and respond to new market challenges. Structural changes, above all, represent a change in the relative importance of the economic sectors over a certain period of time, measured by their participation in the national product and overall employment. There is a whole set of factors that lead to a change at different levels. Bearing this in mind, there is no single and unique factor that causes structural changes, but they are most often the result of a combination of determinants.

In the long term, structural changes show a strong correlation with changes in the competitiveness of the economy and therefore its development, as well as changes in economic results at the micro and macro level. There is a constant process of economic restructuring as a result of technological and social changes, combined with competitive and comparative advantages, constantly changing the sectoral and spatial dynamics of economic activity in the global economy. The rapid economic development, in general, is driven by structural changes in the economy, as well as structural changes in its

various sectors. These fundamental changes are characterized by shifting resources from primary production, such as agriculture and mining, to manufacturing, and within manufacturing from those based on natural resources to those more sophisticated, more intense in terms of skills and technology, and further towards the tertiary sector.

Intersectoral structural changes in Serbia were examined in the paper on this base. As of the sector's share in the gross domestic product, the tertiary sector accounts for about 60% of GDP in the analyzed period, followed by a secondary sector with around 30% and a primary sector that records the share of around 10%. When it comes to the share of sectors in the overall employment in Serbia, the conducted analysis shows that the dominant share in the total employment has a tertiary sector with over 60%, followed by a secondary sector with over 30% and a primary sector that participates with less than 5% in overall employment. Therefore, it can be concluded based on the results that the tertiary sector has the biggest contribution to the economic growth of Serbia, then secondary sector and the least contribution has the primary sector. However, the share of sectors in the exports and import values indicates slightly different results. Namely, almost all exports and imports in Serbia relate to the secondary sector which participates with about 90%. The primary sector accounts for less than 10% in exports and imports, and the tertiary sector records a negligible share in exports and imports of around 1%.

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MEĐUSEKTORSKE VEZE I NJIHOV DOPRINOS EKONOMSKOM RASTU U REPUBLICI SRBIJI

Visok nivo međusobne povezanosti privrednih sektora, odnosno agrarnog, industrijskog i sektora usluga, ukazuje na potrebu razumevanja međusektorskih strukturnih promena i transfera resursa između sektora, a u cilju sagledavanja njihovog doprinosa ekonomskom razvoju. Međusektorske strukturne promene Republike Srbije, kao jedne od tranzicionih privreda, analiziraju se sa različitih aspekata na osnovu bogate informacione osnove koju čine podaci iz domaćih i međunarodnih statističkih izvora. U radu se, pre svega, sagledava učešće privrednih sektora u bruto domaćem proizvodu. Zatim se ukazuje na udeo privrednih sektora u ukupnoj zaposlenosti, ali i u međunarodnoj trgovini. Cilj istraživanja jeste da se analiziraju strukturne promene u privredi Republike Srbije, identifikuje pravac transfera resursa između sektora, kao i utvrdi njihov doprinos ekonomskom razvoju mereno različitim indikatorima.

Ključne reči: *međusektorske veze, strukturne promene, ekonomski rast, Republika Srbija*.