University of Economics in Katowice

Journal of Economics and Management

ISSN 1732-1948 Vol. 36 (2) • 2019

Małgorzata Gawrycka
https://orcid.org/0000-0002-0933-4889
Department of Economic Analysis and Finance
Faculty of Management and Economic
Gdańsk University of Technology,
Gdańsk, Poland
mgaw@zie.pg.gda.pl

Anna Szymczak
https://orcid.org/0000-0002-2410-6809
Faculty of Social and Economic Research
Sopot University of Applied Science,
Sopot, Poland
aszymczak@ssw.sopot.pl

Reasons behind changes in the share of labour in national income in the Polish economy: Selected aspects

doi: 10.22367/jem.2019.36.01

Accepted by Editor Ewa Ziemba | Received: June 27, 2018 | Revised: October 20, 2018; November 25, 2018; December 20, 2018; January 5, 2019; January 22, 2019 | Accepted: January 25, 2019.

Abstract

Aim/purpose – The aim of this paper is to examine the impact of structural changes taking place in the Polish economy on the share of labour in national income.
Design/methodology/approach – The scope of this study includes a review of the literature dedicated to the issue and an empirical analysis of data available on this topic. The study uses elements of descriptive statistics and the method of induction.
Findings – The conducted analysis shows that in the years 2005-2016, a relation contrary to that reported by de Serres, Scarpetta, & de la Maisonneuve (2002), concerning shifts of employee groups between sectors of the national economy, prevailed in Poland. No research results on the impact of the decrease in the share of self-employed on the decrease in the share of labour in the national income have been confirmed. At the same time, the effect of changes in the relation between employee remuneration and the added value, resulting from their transition between sectors of the national economy, was positively verified.
Research implications/limitations – The results related to changes in the share of self--employed in the national economy should be treated with caution, as there are also economically inactive entities listed in the Central Statistical Office (GUS) register.
Originality/value/contribution – To date, in Poland comprehensive research into the influence of structural changes on the share of labour in national income has not been conducted.

Keywords: labour share, national economy, employment structure, average salary.
JEL Classification: E20, E24, J21.

1. Introduction

Economic development is associated with both positive and negative implications, manifesting themselves in different life aspects, economy included. By broadening access to consumer goods and new technologies, it creates an opportunity for social welfare to increase and for living conditions to improve. At the same time, economic development often fails to meet society's expectations given the uneven distribution of its effects. A subjective assessment of individual's standard of living depends on their participation in the distribution of the generated income. Thus, issues related to the share of labour in national income seem to constitute an important research problem of the last decade. This share can be measured as the ratio of employees' wages to gross domestic product.

Many international researchers to date have investigated the share of labour in national income: Gollin (2002), de Serres, Scarpetta, & de la Maisonneuve (2002), Bentolila & Saint-Paul (2003), Harrison (2005), Lee & Jayadev (2005), Arpaia, Pérez, & Pichelmann (2009), Lawless & Whelan (2011), Raurich, Sala, & Sorolla (2011, pp. 1-26). Their analyses were aimed at exploring the trend of decreasing shares of labour in national incomes observed since 1980s in different countries. The scale of this phenomenon depended on the structure and development level of specific economies. The above-referenced research has covered many determinants of the capital-labour relationship in the context of the resulting income distribution.

According to Bentolila & Saint-Paul (2003), both the capital intensity of production and the price of imported materials condition differences in the share of labour in national income. The analysis by Harrison (2005), scoping over 100 countries, has shown that before 1993, the share of labour in national income had been decreasing at a rate of one percentage point over a decade. These conclusions, however, have been drawn for countries characterised by a lower level of development. After 1993, the share of labour in national incomes was decreasing at a faster rate of three percentage points over a decade. Based on the study conducted over the time period 1973-1995, Lee & Jayadev (2005) have concluded that country's financial openness can lower the share of labour in national income both in developed and developing economies. Measuring labour incomes may be challenging in countries, where many people are self-employed or work for family businesses. In fact, the analysis by Gollin (2002) has shown that self-employment and country's level development can substantially affect the share of labour in national income.

MOST WIEDZY Downloaded from mostwiedzy.pl

Research into the share of labour in national income has also been led by Guscina (2006). Studying a sample of 18 OECD countries, Guscina (2006) has observed that shares of labour in nation incomes were at the highest level in 1960s and 1970s, before dropping by 5 percentage points. This observation is in line with the general descending trend reported in other investigations for that time period. According to Slaughter (2001), opening national economy, associated with an increased availability of production factors and prevailing price elasticity of market goods' demand, contributes to an increase in price elasticity of labour demand. This elasticity depends on the effect of both the supply and substitution. In their study, de Serres, Scarpetta, & de la Maisonneuve (2002) have concluded that a decrease in the share of labour in national income may be prompted by changes in selected structure areas of the economy.

A similar evaluation for the time period discussed in the above-mentioned research was impossible in Poland given its different economic system in 1980s (planned economy) and the transformation period associated with fundamental structural changes that followed. Post-transformation years of Polish economy development not only have allowed it to near modern economies, but have also emphasised certain phenomena these economies are characterised by, such as a decrease in the share of labour in national income; thus, posing a research question to what extent determinants of the share of labour in national income discussed in international literature have prevailed in Poland.

Economic development is associated with both positive and negative implications, manifesting themselves in different life aspects, economy included. By broadening access to consumer goods and new technologies, it creates an opportunity for social welfare to increase and for living conditions to improve. At the same time, economic development often fails to meet society's expectations given the uneven distribution of its effects. A subjective assessment of an individual's living standard depends on their participation in income distribution through the use of labour and capital.

The share of labour in national income is, thus, an important research question of the last decade. It can be measured as the ratio of employees' wages to gross domestic product. Until now, however, comprehensive research into the share of labour in national income focusing on selected determinants has been lacking in Poland. Consequently, the aim of this study is to examine the impact of the structural changes taking place in the Polish economy on the share of labour in national income, in particular the flow of employee groups between sectors of the national economy, changes in the structure of employee groups and changes in the relationship between employees' remuneration and the added value resulting from their transition between sectors.

MOST WIEDZY Downloaded from mostwiedzy.pl

The present study covers a review of the literature dedicated to the issue of the share labour in national income as well as an empirical analysis of the determinants discussed by de Serres, Scarpetta, & de la Maisonneuve (2002) and their influence on the decrease of the share of labour in national income in the Polish economy in the period 2005-2016. The study was guided by investigative deduction; elements of descriptive statistics, including graphics, tables, parametrical characteristics of statistical groups, time series analyses and group structure analyses, have been subject to a comprehensive investigation.

The aim of this study is to examine the impact of the structural changes taking place in the Polish economy on the share of labour in income, in particular on the flow of employee groups between the sectors of the national economy, changes in the structure of employees and the changes in the relationship between employee remuneration and the added value resulting from their transition between sectors.

The paper is structured as follows. The second section reviews the literature on the labour share in the national income. The third section describes the methodology of the present study and procedures. The fourth section contains the research results and discussion. The final one provides conclusions of the analysis carried out.

2. Literature review

The neoclassical theory of the enterprise, defining the path of expansion, suggests that the optimal combination of means of production takes place when the marginal rate of technical substitution of capital for labour is equal to the relative price of the labour factor (labour-capital). The fall in the relative price of capital (ceteris paribus) leads to an increase in the demand for capital and a fall in the demand for labour (depending on elasticity and substitution). An increase in the scale of production usually results in an increase in labour and capital consumption, provided that they are treated as equivalent factors (Houthakker, 1955; Jones, 2005). Numerous economists have recognised that the assumptions of the so-far prominent neoclassical theory of economics, suggesting that every means of production determines national income in accordance with its marginal productivity, ignored other factors affecting the importance of labour in the growth of national income.

According to Bentolila & Saint-Paul (2003), the diversified capital intensity of production and the price of imported materials explain differences in the share of labour in national income. The bargaining power of labour related to the intensifying globalisation processes may also play an important role. Harrison (2005) has dealt with this question in her research, pursuing models indicating

MOST WIEDZY Downloaded from mostwiedzy.pl

determinants of the share of labour in national income. In her opinion, financial openness, enabling the flow of capital between individual countries (inflow of foreign direct investment) reduces the importance of labour. This means that as far as the influence on national income is concerned, capital is more important than labour. If there are restrictions on the capital flow, then the share of labour increases. Also currency fluctuations that lead to a reduction in the share of labour in national income have proven to be an important factor.

Lee & Jayadev (2005), based on research conducted in the years 1973-1995, have concluded that financial openness of a country reduces the share of labour, both in highly developed countries and in those at earlier stages of development. This effect is independent of the effects of financial crises. During financial crises, and in the short period that follows, the share of labour decreases and remains low even when national income 'recovers' to the level from before the crisis. All empirical studies indicate that financial openness and financial crises reduce the share of labour in national income.

Empirical research also provides some explanations regarding changes in the share of labour in national income related to specific employee protection policies. A policy conducive to labour protection contributes to maintaining high importance of the labour factor for national income. In this respect, it should be remembered that wages or employment fail to keep pace with economic growth. If the share of labour in national income was constant (and not decreasing), economic growth would have an impact on higher wages or reduced employment (or both). A slow increase in wages and low employment flexibility are the reasons behind a decrease in the share of labour in national income.

Measuring income from labour can be difficult in countries where many people achieve income from self-employment or work in family enterprises. A study carried out by Gollin (2002) has shown that the percentage of self-employed and the level of development have a large impact on the share of labour in national income in individual countries.

It is worth noting that the conclusions of the studies by de Serres, Scarpetta, & de la Maisonneuve (2002) have indicated that a decrease in the share of labour in national income may result from:

- shifts of employee groups between sectors of the national economy – transition from sectors with high labour costs to sectors with low labour costs,
- changes in the employment structure – a decrease in the share of self-employed in the total employment,
- changes in the relation between employee remuneration and the added value resulting from their transition between sectors.

MOST WIEDZY Downloaded from mostwiedzy.pl

According to the study by Arpaia, Pérez, & Pichelmann (2009, p. 14), the share of labour in national income increases in cases where capital and skills of (highly qualified) employees are complementary. An increase in assets increases the relative need for qualified labour resources, which in turn contributes to an increase in the wage premium. In the case of substitution between skilled and unskilled workers there will be a surplus in the supply of skilled workers, which will lead to a strong reduction in their relative wages and, consequently, a decline in the share of labour in national income. If capital and unskilled labour are highly substitutable, the surplus of capital increases and the ratio of the price of capital to the price of unskilled labour decrease. Replacing unskilled workers with capital reduces the share of unskilled workers in revenues.

The complementarity of capital and employee qualifications will contribute to an increase in the remuneration bonus for qualified employees. In this case, demand for skilled labour, as well as relative wages, will be higher, while the share of labour in national income will decrease. Considering with many various reasons behind changes in the share of labour in national income indicated in the literature, it is worth examining how it affected development in the Polish economy. In particular, the present study took into account the flows of employee groups between sectors of the national economy, changes in the structure of employment resulting from the decrease in the share of self-employed and changes in the relation between employee remuneration and the added value resulting from their transition between sectors.

3. Research methods and procedure

The scope of this study covers a review of the literature dedicated to the issue of the share of labour in national income and an empirical analysis of data available on this topic. The investigation was started by looking at the changes in the share of labour in national income in the Polish economy against the background of the rate of GDP changes in the years 1995-2016. Then, taking into account the objective of the study, factors determining the share of labour in national income in the Polish economy were selected, i.e. changes in the flow of employee groups between sectors of the national economy, changes in the structure of employment resulting from the reduction in the share of self-employed and changes in the relation between employee remuneration and the added value resulting from their transition between sectors. In this case, the research period was limited to years 2005-2016. The research period had to be shortened due to

MOST WIEDZY Downloaded from mostwiedzy.pl

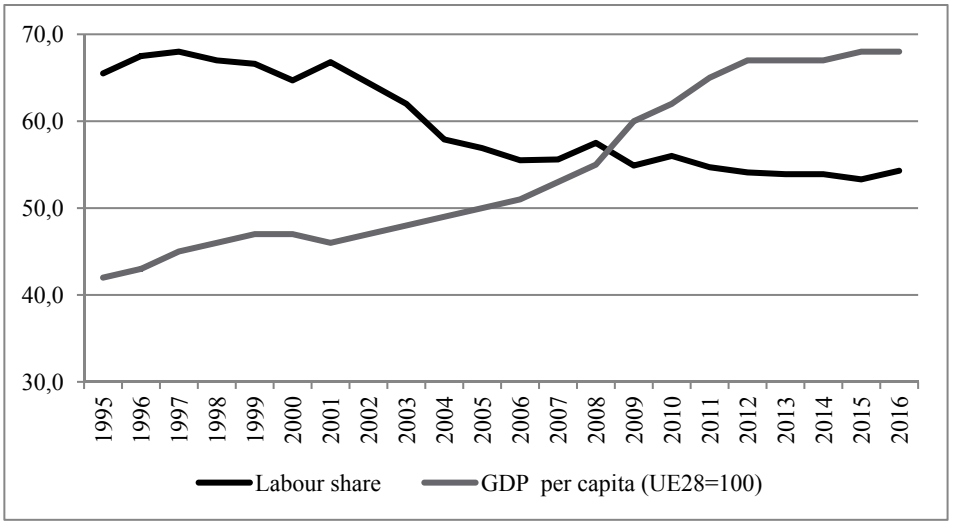
changes introduced by the Central Statistical Office in the Polish Classification of Activities (PKD) and due to the lack of compatibility of available statistical data.

The study incorporates elements of descriptive statistics, such as graphics, tables and parametric characteristics of the statistical groups, time series analyses and group structure analyses, which allowed for the presentation of changes in the share of labour in national income against the background of the above-mentioned determinants, as well as their comparison with the results reported by de Serres, Scarpetta, & de la Maisonneuve (2002).

4. Research findings and discussion

Transformation of the economic system in Poland after 1989 and the associated restructuring of the economy had an impact on its dynamic growth. Against this background, it is worth exploring the share of labour in national income in relation to gross domestic product per capita (Figure 1).

Figure 1. Share of labour in national income vs. GDP per capita (EU = 100) in Poland in the years 1995-2016



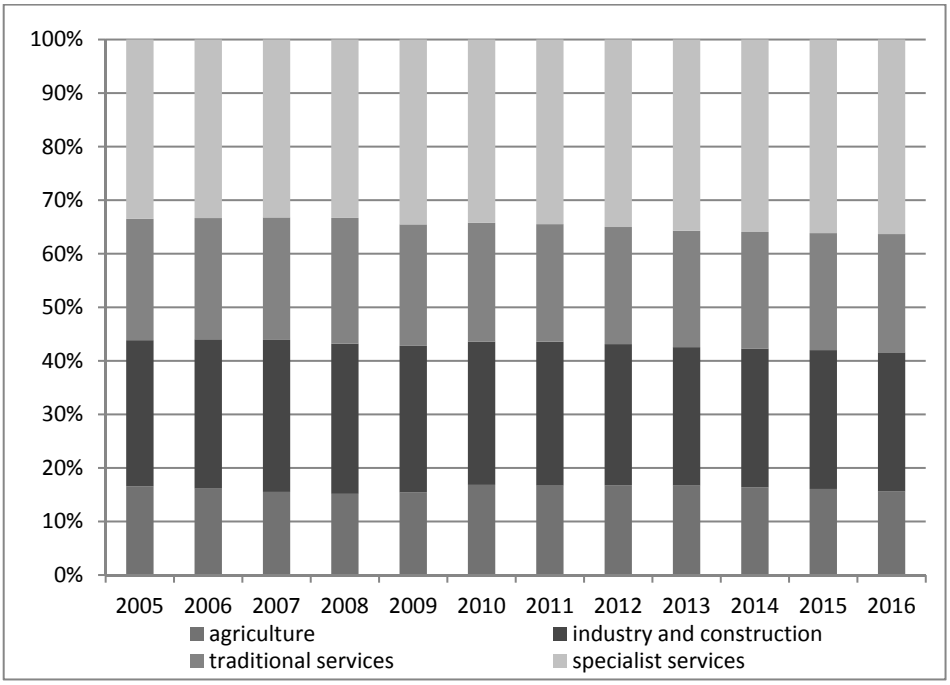
Source: Adapted from: OECD (2018ab) and GUS (2018) data.

Between 1995 and 2016, GDP per capita (assuming that the EU-28 = 100) grew steadily. Between 1995 and 2004, GDP in Poland amounted to less than 50% of the EU-28 average. In 2016, GDP per capita was 26 percentage points higher than in 1995, which may confirm an increase in social welfare and an improvement of living conditions for the Polish population. In 2016, the share of

MOST WIEDZY Downloaded from mostwiedzy.pl

labour in national income was 11.2 percentage points lower than in 1995. This confirms the reduction in the share of labour in national income observed in many world economies and described by the researchers mentioned in this study. The study conducted by de Serres, Scarpetta, & de la Maisonneuve (2002) has shown that a decrease in the share of labour in national income may be caused by shifts of employee groups between sectors of the national economy, a reduction in the share of self-employed and changes in the relation between employee remuneration and the added value, resulting from their transition between economy sectors. Firstly, changes in the employment structure of the national economy in Poland in the years 2005-2016 were examined (Figure 2).

Figure 2. The structure of employment in sectors of the national economy in the years 2005-2016



Source: Adapted from GUS (2018) data.

The structure of employment in the Polish economy was calculated following the concept of Clark (1951) and Fisher (1939). Sector I covers agriculture, fishery, forestry and hunting. Sector II is industry and construction. However, sector III comprises services divided into two groups. One includes economic entities operating in the sector providing traditional services, which often do not

MOST WIEDZY Downloaded from mostwiedzy.pl

require highly qualified labour resources (trade, transport and accommodation). The other includes industries which have been figuratively defined as 'specialist', as they require the use of modern technologies and high, often specialist, professional qualifications of employees. This group includes information and communication services, financial and insurance activities, real estate market services, professional activities, public administration and national defence, education as well as cultural, entertainment and recreation activities (GUS, 2016).

In the investigated research period, as far as the sectors of the national economy are concerned, changes in the structure of employment took place (Table 1). In 2016, compared to 2005, the percentage of individuals employed in the first sector decreased by 1 percentage point, in the second sector by 1.3 percentage point and in the so-called traditional services by 0.6 percentage point. Only in the specialised services sector the share of employed over the period increased by almost 3 percentage points. The observed situation is consistent with the theory presented in the literature.

It should be emphasised that by 2016, employment in the Polish economy increased by 18.6% as compared to 2005. The dynamics of employment growth in particular sectors and sections of the national economy was diversified. A high growth rate was recorded in construction (32.9%). This was connected with the construction of broadly understood infrastructure of the economy, co-financed from EU funds (e.g. construction of road infrastructure or stadiums for the UEFA European Football Championships – Euro 2012).

In the services sector, significant differences are visible. The highest growth rate was recorded for the information and communication services – an increase of 86.5%, as well as in professional and technical activities – an increase of almost 61%. It follows that in the years 2005-2016, the highest increase in the number of employees was observed in the so-called specialist services. It can be assumed that the examined decline in the share of labour in national income will be reduced through the action of factors discussed in the literature by Arpaia, Pérez, & Pichelmann (2009), namely the complementarity of capital and skills possessed by highly qualified workers.

MOST WIEDZY Downloaded from mostwiedzy.pl

Table 1. The rate of employment changes and the average remuneration

Specification	The rate of change in 2016, compared to 2005 (%)		Average remuneration in 2016
	Total employment	Average remuneration	
Total	**18.6**	–	–
including:			
agriculture	11.8	87.3	4,468.8
industry	8.3	74.1	4,111.3
construction	32.9	72.8	3,348.6
trade	10.7	81.4	3,471.3
transport	29.3	52.6	3,551.5
accommodation and catering	23.3	73.9	2,618.6
information and communication	**86.5**	**67.3**	**7,059.7**
financial and insurance activities	19.3	57.1	6,659.2
real estate market services	24.6	63.9	4,223.8
professional, scientific and technical activities	**60.4**	**63.9**	**5,007.7**
administration and support activities	**67.2**	**87.5**	**2,967.1**
public administration and national defence	12.1	64.7	5,042.2
education	10.5	69.2	4,178.8
healthcare and social services	25.7	92.4	3,752.0
culture, entertainment and recreation	15.0	65.9	3,644.4
other activities	**52.0**	**47.8**	**3,238.8**

Source: Adapted from OECD (2018a) and GUS (2018) data.

In relation to a decrease in the share of labour in the national income resulting from the transfer of groups of employees between sectors of the national economy, i.e. the transition from sectors with high labour costs to sectors with low labour costs, it is worth exploring the relation between changes in the number of employees and labour costs measured by the average remuneration of employees in particular sectors and sections of the national economy. Calculations show (Table 1) that the sections with the highest labour costs, i.e. information and communication, professional and technical activities experienced a large increase in total employment. A smaller increase in employment was observed in the sections with lower labour costs. This fails to confirm the results of de Serres, Scarpetta, & de la Maisonneuve (2002) on the decline in the share of labour in national income. It can be assumed that this situation is an outcome of structural changes in the national economy, converging with the most developed economies.

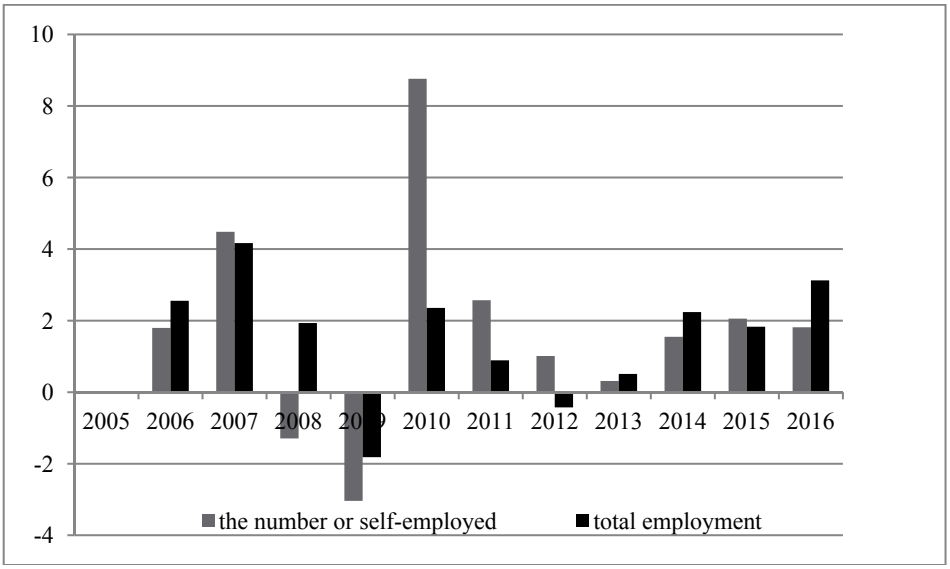
In comparison to 2005, the highest increase of the average remuneration by 2016 was recorded in the healthcare (increase by 92.4%), agriculture (increase by 87.3%) and trade (increase by 81.4%) sections. The lowest growth was re-

MOST WIEDZY Downloaded from mostwiedzy.pl

corded in transport (51.6%) and finance and insurance (57.1%) sections. The pressure to increase the minimum wage, the decrease in unemployment and simultaneous increase in employment, as well as demographic changes most probably contributed to the increase in wages in the sectors and sections with relatively low qualifications of employees.

Taking into account another factor determining the decrease in the share of labour in the national income, it is worth looking at the change in the employment structure from the point of view of the share of the self-employed in the national economy.

Figure 3. Rate of changes in the number of self-employed and total employment in the years 2005-2016 (%, previous year = 100)



Source: Adapted from GUS (2018) data.

By 2016, the number of self-employed increased by over 20% in comparison to 2005. The share of self-employed grew by 0.6 percentage points over the same period. Thus, it cannot be confirmed that the decrease in the share of labour in national income was caused by the decrease in the share of self-employed in national economy. The presented survey results should, however, be treated with caution, as the statistical data on self-employment are based on the records of the Central Statistical Office (GUS), which also include entities which no longer conduct business activity.

MOST WIEDZY Downloaded from mostwiedzy.pl

The change in relation between employee remuneration and the value added by their transition between sectors is another determinant of the decline in the share of labour in national income indicated by de Serres, Scarpetta, & de la Maisonneuve (2002). Table 2 presents the relation between these variables.

Table 2. Changes in the added value and average wages in selected sectors of the Polish economy in 2016, compared to 2005 (in %)

Specification	The rate of change (2005 = 100)	
	Average remuneration	Added value
agriculture, forestry	87.3	54.4
industry	74.1	98.9
construction	72.8	72.5
services in general	72.4	88.7

Source: Adapted from GUS (2018) data.

Data show that in the industry and services, a relatively lower increase of the average remuneration in relation to the increase of the added value was observed. This reflects the pressure to reduce the share of labour in national income. This is in line with the findings of de Serres, Scarpetta, & de la Maisonneuve (2002) studies. In the case of agriculture, an opposite tendency is observed, with a relatively high increase in the average remuneration accompanied by a lower increase in the added value. Direct payments from EU funds offer the most likely justification for this observation.

5. Conclusions

The present study has explored shifts in the share of labour in national income, in an attempt to identify reasons behind the changes observed in the Polish economy. The authors have broadened the scope of to date research to include determinants discussed in international literature, which have not yet been studied in the context of the Polish economy.

The array of determinants of changes in the share of labour in national income discussed in international literature can be best described as multi-faceted. It, thus, requires comprehensive and rigorous analysis. Contrary to the conclusions of Serres, Scarpetta, & de la Maisonneuve (2002), labour groups shifted between economy sectors in Poland in the time period 2005-2016. The conclusions of Gollin (2002) about the influence of a decreasing share of self-employed in national income have also not found their reflection in actual developments. Serres, Scarpetta, & de la Maisonneuve (2002) have, however, accurately reflected on changes in the relation between employee remuneration and the added-value of labour groups moving between economy sectors.

MOST WIEDZY Downloaded from mostwiedzy.pl

To date, in Poland, comprehensive research into changes in the share of labour in national income, focusing on selected determinants, has been lacking. This study could prompt future investigations exploring the topic of labour in national income more thoroughly, in the context of specific characteristics of a given economy. The applied research methodology could also serve as reference for future studies in this area. As demonstrated by the results of this study, this research topic is complex and requires an exhaustive and far-reaching analysis.

The present study indicates that demonstrating causality between certain determinants and shifts in the share of labour in national income is not universally possible. The impact of a given determinant depends on the origin, development level and structure of the economy.

Further research into the topic of the share of labour in national income is especially relevant for the economic policy, in particular social policy. Any shifts affect market participants differently, depending on their profile, i.e. employers and employees. They can also influence income differentiation.

Nonetheless, further research is limited by access to compatible data sets that enable conducting comparative analyses in the context of national economies. Moreover, statistics of the Central Statistical Office in Poland prove insufficient to adequately characterise shifts prevailing during the investigate time period.

Research informing this study shows that future investigations can deepen our understanding of the determinants of the share of labour in national income. Collected data as well as analyses published internationally reaffirm the need to approach this research topic comprehensively in order to capture its multi--faceted character.

References

Arpaia, A., Pérez, E., & Pichelmann, K. (2009, May). *Understanding labour income share dynamics in Europe* (Economic Papers No. 379). Brussels: European Commission. doi: 10.2765/37596

Bentolila, S., & Saint-Paul, G. (2003). Explaining movements in the labour share. *Journal of Macroeconomics, 3*(1), 650-670. Retrieved from https://www.researchgate.net/publication/227378091_Explaining_Movements_in_the_Labor_Share, doi: 10.2202/1534-6005.1103

Clark, C. (1951). *The conditions of economic progress*. London: MacMillan.

Fisher, A. G. (1939, June). Production, primary, secondary and tertiary. *The Economic Record, 15*(1), 24-38. doi: 10.1111/j.1475-4932.1939.tb01015.x

Gollin, D. (2002, April). Getting income shares right. *Journal of Political Economy, 110*(2), 458-474. Retrieved from https://www.jstor.org/stable/10.1086/338747, doi: 10.1086/338747

MOST WIEDZY Downloaded from mostwiedzy.pl

GUS. (2016). *Nauka i technika w 2015*. Warszawa. Retrieved from https://stat.gov.pl/obszary-tematyczne/nauka-i-technika-spoleczenstwo-informacyjne/nauka-i-technika/nauka-i-technika-w-2015-r-,1,12.html

GUS. (2018). *Polska – wskaźniki makroekonomiczne*. Retrieved April 27, 2018, from https://stat.gov.pl/wskazniki-makroekonomiczne/

Guscina, A. (2006). *Effects of globalization on labor's share in national income* (Working Papers No. 06/294). Washington, DC: IMF. Retrieved from https://www.imf.org/~/media/Websites/IMF/imported-full-text-pdf/external/pubs/ft/wp/2006/_wp06294.ashx

Harrison, A. E. (2005). *Has globalization eroded labor's share? Some cross-country evidence* (MPRA Paper No. 39649). CA, Berkeley: University of California at Berkeley and NBER. Retrieved from https://mpra.ub.uni-muenchen.de/39649/

Houthakker, H. S. (1955). The Pareto distribution and the Cobb-Douglas Production Function in activity analysis. *Review of Economic Studies, 23*(1), 27-31. Retrieved from http://hdl.handle.net/10.2307/2296148, doi: 10.2307/2296148

Jones, Ch. I. (2005). The shape of production functions and the direction of technical change. *Quarterly Journal of Economics, 120*(2), 517-549. Retrieved from http://nbn-resolving.de/urn:nbn:de:101:1-201101312892

Lawless, M., & Whelan, K. T. (2011). Understanding the dynamics of labor shares and inflation. *Journal of Macroeconomics, 33*(2), 121-136. Retrieved from https://www.ecb.europa.eu/pub/pdf/scpwps/ecbwp784.pdf?4773db3b4470278767ffeadef148825d

Lee, K., & Jayadev, A. (2005). The effects of capital account liberalization on growth and the labor share of income: Reviewing and extending the cross-country evidence. In G. Esptein (Eds.), *Capital flight and capital controls in developing countries* (pp. 15-50). Cheltenham: Edward Elgar.

OECD. (2018a). *Income distribution and poverty*. Retrieved from https://stats.oecd.org/Index.aspx?DatasetCode=IDD

OECD. (2018b). *Income inequality*. Retrieved from https://data.oecd.org/inequality/income-inequality.htm

Raurich, X., Salah, H., & Sorolla, V. (2011, September). *Factor shares, the price market up, and the elasticity of substitution between capital and labor* (Discussion Paper No. 5992). Bonn: IZA. Retrieved from http://ftp.iza.org/dp5992.pdf

de Serres, A., Scarpetta, S., & de la Maisonneuve, Ch. (2002). *Sectoral shifts in Europe and the United States: How they affect aggregate labour shares and the properties of wage equations* (Economics Department Working Papers No. 326). Paris: OECD Publishing. Retrieved from ttps://www.oecdilibrary.org/docserver/763626062738.pdf?expires=1541685526&id=id&accname=guest&checksum=2A8E82CF27D1CB9187A0341EE425D2F8

Slaughter M.J. (2001, October). International trade and labour-demand elasticities. *Journal of International Economics, 54*(1), 203-228. doi: 10.1016/S0022-1996(00)00087-8

MOST WIEDZY Downloaded from mostwiedzy.pl