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Dynamic Linkages between Social Expenditures and Economic Growth: the Most Important Conclusions for Central European Countries

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Abstract

The role of the state within the neoliberal system is discussed in the approaches developed for social expenditures. Accordingly, the question of whether the state should stand back or provide the support needed by individuals has shaped the literature on social expenditures. It is thought that the increase in social expenditures affects public expenditures, and public expenditures may indirectly cause budget deficits. In addition, it is said that there is a decrease in social spending during periods of economic growth. All these dilemmas show that the idea that the country needs both producers and consumers while realizing economic growth has been pushed into the background. Here, the analyses of the relationship between social spending and economic growth are the arguments for the accuracy of this assumption.

The aim of this study is to empirically analyze the long-term relationship between the economic growth and social expenditures of eight Central European countries and the causality relationship for 1999 and 2019. In the empirical findings, the cointegration relationship was determined between economic growth and social spending. Based on the findings of the causality analysis, it has been concluded that there is a bidirectional causality relationship between economic growth and social expenditures. Policy proposals are given in the conclusion section of the article.

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Introduction

With industrialization and the social changes that followed, a number of legal and institutional arrangements were realized, led by the UK and then Germany. The reason for these arrangements is shaped by the need for workers that emerged due to industrialization and the fact that the population working in agriculture migrates to the cities in the face of new technologies. The social aid mechanism that the traditional structure contains melted and the need for new institutions emerged instead (Rakıcı and Kurşun 2016, p. 138). In addition, while new needs and interventions that may emerge under new working conditions make the need for new institutions felt, this situation also contributed to the emergence of the welfare state (Özdemir 2007, p. 185).

The welfare state approach is defined as a structure that aims to maintain capitalism in the long term by reducing the effects of the 1929 economic depression. The welfare state process that emerged along with the 1929 economic depression imposed restrictions on the generous spending of states with the crises that emerged in the 1970s (Gümüş 2018, p. 33). Along with globalization, the impact of the welfare state approach still affects the economy today, though not as much as in the past (Rakıcı and Kurşun 2016, p. 135).

While the 1929 economic depression expressed states role control over the economy, the state became responsible for protecting public from conditions such as poverty, unemployment, or disease along with the second World War (Türk 1979, p. 8). The support that must be given by the state was determined by the Beveridge Report (Beveridge 1942). Thus, the effect of the state on the social structure increased, and social expenditures emerged as an extension of the understanding of the welfare state (Ersin and Baş 2019, p. 193).

In brief, social expenditures assumed regulatory roles in all areas of social life. For example, it aimed to intervene in the market on issues arising in education and health, where the free market is insufficient. With these interventions and with economic supports and interventions under state control, it hoped to eliminate the social problems that may arise (Kaymaz 2018, p. 118).

With the transition from the period when state intervention was seen as the solution to problems to the period where the state intervention was seen as the problem, interest in understanding the welfare state also decreased (Özdemir 2007, p. 245). The state's lowering of taxes for capital also led to a reduction in the financial support that pays for social expenditures (Rakıcı and Kurşun 2016, p. 139). Nowadays, there is an increase in social spending. Of course, this increase is incomparable with the peri-

od before 1970, while there is an incompatibility among countries in the rates of increase. The reason for this is related to the various definitions of what social expenditures are.

Today, according to the definition by the Turkish Statistical Institute, social expenditures are classified as spending on education, health, and social protection (Arısoy, Ünlükaplan, and Ergen 2010, p. 400). According to the OECD definition, social expenditures are the income support to the retired and working populations, and health spending and all other social spending other than health (Arısoy, Ünkükaplan, and Ergen 2010, p. 401). The differentiation of these definitions also affects the findings and results of the research.

The same situation is experienced between welfare models and their success. Thus, with the withdrawal of the state after 1980, the impact of the welfare state is not measured only by its social expenditure. At the same time, the economic effects of social expenditures can also lead to differences in the economic growth of different welfare models and the countries where they are applied (Ersin and Baş 2019, p. 194). Thus, the benefit of individuals from social expenditures can also be considered as a social welfare measurement unit.

Two basic approaches have been developed in the relationship between social expenditures and economic growth. The first approach is the classical economic approach, which is the reason behind the 1929 economic depression. According to this approach, the state refrains from economic activities and only intervenes or supports initiatives when necessary. The failure of the classical economic approach caused the rise of Keynesian economics, in which the intervention of the state is at the forefront. This approach led to the emergence of different welfare models with different application areas.

Ferrera (1996) added the Southern European welfare model to Esping-Andersen's (1990) classification of welfare models as a liberal, conservative, and social democratic welfare state. Turkey is a part of this model and is similar to the characteristics of this model. In the South European welfare model, there are irregularities in terms of social expenditures, e.g., fragmented structures, such as the large difference in pensions (Yıldırım and Şahin 2019, p. 2536).

The relationship between social expenditures and economic growth can be seen through its relationship with public expenditures. Accordingly, social spending affects public spending, and public spending affects budget deficits. Thus, during a period of economic growth, a decrease in budget deficits and social expenditures is observed (Ersin and Baş 2019, p. 198).

Finally, when Turkey's social expenditure data is evaluated, its declining social expenditures in 2017 and 2018 are noteworthy. According to TurkStat social protection statistics, the share of social protection expenditures in GDP in 2018 was 11.9%. The share of social protection benefits in GDP is 11.7% (2018 Sosyal Koruma İstatistikleri 2019).

Related literature

Social expenditure is a public expenditure, as seen in studies focusing on the relationship between social expenditures and economic growth. For example, in the study by Kar and Taban (2003) titled "The Effects of Public Expenditure Types on Economic Growth," while examining the impact of social spending on economic growth, public expenditures were classified as health, education, social security, and infrastructure expenditures. Using the cointegration method, it was revealed that education and social security spending had a positive effect on economic growth in Turkey between 1971 and 2000. On the other hand, health expenditures had a negative impact on economic growth.

Following that study, Arısoy, Ünlükaptan, and Ergen (2010) used the concept of social expenditure in their study "Social Expenditures and Economic Growth Relationship: A Dynamic Analysis of The Turkish Economy for The Period 1960–2005." They used cointegration and error correction models to explain social spending like education, health, and social protection, revealing the positive effects of social spending on economic growth.

In another study conducted in Turkey, Romania, and Bulgaria, Altunc and Aydın (2013) drew attention to the increase in public expenditures by using the expression public expenditures instead of social expenditures with the ARDL test approach. They found that economic growth was negatively affected by public expenditures.

Finally, Ersin and Baş (2019) applied Pedroni panel cointegration and DH panel causality tests in their study titled "An Analysis on The Effectiveness of Mediation System in Collective Labor Disputes in Turkey: Examination of the Relationship Between Social Expenditures and Economic Growth in Southern European Welfare Countries". By analyzing the data between 1980–2016, it was revealed that social spending decreased during periods of economic growth. In addition, the causality effect from social expenditures to economic growth is not in question.

In recent studies, it has been suggested that investments in the health sector in Turkey will act as a locomotive for economic growth (Tutar and Ekici 2020). It has been suggested that increasing spending on education will also impact Turkey's economic growth (Cinel 2021). Meanwhile, in a study conducted by Torun, Eroğlu, and Bayrak (2021) on NATO countries, including Turkey, it was concluded that defense spending may negatively affect economic growth. Finally, Alataş and Sarı (2021) revealed that investments in education, health, and economic activities in Turkey are not sufficient in terms of economic growth.

In studies that examine the relationship between economic growth and social expenditures around the world, public expenditures again draw attention. Glomm and Ravikumar (1997) revealed that public spending on education has a positive effect on economic growth. However, the number of studies investigating the relationship between spending on education abroad and economic growth should be increased. For example, Landau (1986) revealed that he could not clearly observe the impact of edu-

cation spending between 1961 and 1976 on economic growth. In addition, Otanı and Villanueva (1989) mentioned that there may be a weak positive relationship between education spending and economic growth. Webber (2002) suggested that the education levels of individuals positively affect the economic growth of the country, while Kutluay Şahin's (2020) study on EU countries revealed that social spending on education has a positive effect on economic growth. There are also examples of Poland and the USA, which state that spending on education has a positive effect on economic growth (Konopczynski 2021; Wing 2021).

Among the studies investigating public spending on health, the study conducted by Kelly (1997) stands out. Using the regression method over seventy-three countries, he revealed that there was no significant relationship between health expenditure and economic growth between 1970 and 1989. However, the same study concluded that public spending might have an impact on economic growth in total. A recent study by Wang and Wang (2021) that focused on OECD countries revealed that higher health expenditure can be avoided as a result of appropriately allocating resources for the health of elderly individuals, and thus a positive contribution to economic growth can be made.

Using a regression method in a study of twelve EU countries for the period 1970–1994, Herce, Sosvilla-Rivero, and De Lucio (2000) revealed that spending on social security (i.e., social protection) positively contributes to economic growth. Accordingly, social protection expenditures positively affect economic growth. By contrast, in a study of fifty-eight countries, Baum and Lin (1993) concluded that social protection spending did not have a significant impact on economic growth. Meanwhile, Devarajan, Swaroop, and Zou (1996) examined forty-three countries for the period 1970–1990 with panel data analysis and OLS and found that social protection expenditures have a negative effect on economic growth under certain conditions. Finally, Ünal and Afşar (2021) concluded that social security spending has a positive effect on economic growth, although they revealed that economic growth does not positively affect social security expenditures. Other recent studies (e.g. Chantzaras and Yfantopoulos 2018; Hajamini and Falahi 2018; Wang et al. 2018; Trofimov 2020) concluded that social spending affects economic growth, although the studies differed in terms of year intervals, analysis methods, and countries analyzed.

Data and research methodology

Data

In this study, the relationship between economic growth and social expenditures between 1999 and 2019 was investigated by selecting eight Central European countries.[1] Social expenditure is taken as its share in GDP, and GDP per capita (current US dollars) is used to represent economic growth. Social expenditures are taken from the OECD database and economic growth data from the World Bank database.

Research methodology and application

In order to select the unit root and cointegration tests for the empirical analysis, first, test the cross-sectional dependence in the countries. When there is a cross-sectional dependence between countries, using unit root (Levin, Lin, and Chu 2002; Im, Pesaran, and Shin 2003) and cointegration tests (Kao 1999; Pedroni 1999), which do not care about cross-sectional dependence, may lead to false results. In addition, when there is no cross-sectional dependence between countries, the unit root (Moon and Perron 2004; Pesaran 2007) and cointegration tests (McCoskey and Kao 1998; Westerlund 2008), used in cross-sectional dependence situations, may lead to errors in analysis results. For this purpose, the cross-sectional dependencies of the countries were tested by the following methods.

$$\text{Breusch and Pagan (1980) } \mathrm{CD}_{\mathrm{BP}} : \sum\nolimits_{i=1}^{N-1} \sum\nolimits_{j=i+1}^{N} \hat{\rho}_{ij}^2 . \tag{1}$$

$$\text{Pesaran (2020) } \mathrm{CD}_{\mathrm{LM}} : \left(\frac{1}{N(N-1)} \right)^{\frac{1}{2}} \sum\nolimits_{i=1}^{N-1} \sum\nolimits_{j=i+1}^{N} (T\hat{\rho}_{ij}^2 - 1) . \tag{2}$$

$$\text{Pesaran (2020) } \mathrm{CD} : \left(\frac{2T}{N(N-1)} \right)^{1/2} \sum\nolimits_{i=1}^{N-1} \sum\nolimits_{j=i+1}^{N} \hat{\rho}_{ij}^2 . \tag{3}$$

$\hat{\rho}_{ij}$: the estimates of cross-section correlations between residues.

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1 Austria, Czech Republic, Germany, Hungary, Poland, Slovakia, Slovenia, Switzerland.

Table 1. Cross-sectional dependence test results

Variables	Test statistics					
	CD_{BP}		CD_{LM}		CD	
	Statistics	p-value	Statistics	p-value	Statistics	P-Value
GDP	560.172	0.000	71.114	0.000	23.664	0.000
SE	115.813	0.000	11.734	0.000	6.397	0.000

Source: own elaboration.

The cross-sectional dependence test results are presented in Table 1. Based on the results, since CD_{BP}, CD_{LM}, and CD test statistics of the GDP and SE variables were significant at the level of 5%, the cross-sectional dependence was determined by rejecting the zero hypothesis "no cross-section dependency." Since there is a cross-sectional dependence on the variables, the unit root test that should be selected should be one of the second generation unit root tests.

Since there is a cross-sectional dependence on the variables (Table 1), the unit root test to be used in the study should be selected in accordance with cross-section dependency. Therefore, the CADF panel unit root test developed by Pesaran (2007) was used in this study. Cross-sectional extended regression:

$$\Delta x_{it} = z_{it}^{'}\gamma + \rho_i x_{it-1} + \sum_{j=1}^{k_i}\phi_{ij}\Delta x_{it-j} + \alpha_i \bar{x}_{t-1} + \sum_{j=0}^{k_i}\eta_{ij}\Delta \bar{x}_{t-j} + \nu_{it}, \qquad (4)$$

where $\bar{x}_t$, x_{it} is the cross-section average and $\bar{x}_t = N^{-1}\sum_{i=1}^{n}x_{it}$. The CADF statistics are averaged when calculating the unit root test across the panel. CIPS statistics are calculated with the formula below.

$$CIPS = t - bar = N^{-1}\sum_{i=1}^{N_i}t_i. \qquad (5)$$

Table 2. Panel unit root test results

Variables	CIPS test statistics	
	Level	First differences
GDP	–2.234	–2.667*
SE	–2.275	–3.140*

Note: * indicates the significance at 1%.
Source: own elaboration.

Table 2 presents the panel unit root test results. The null hypothesis of this test is in the form of "the variable has a unit root," and the alternative hypothesis is in the form "the variable is stationary," When the table* is analyzed, since the test statistics of GDP and SE variables are insignificant at 5% level, the zero hypothesis cannot be rejected.

Therefore, the variables have a unit root at the level. When the first difference of the variables was taken, the alternative hypothesis was accepted since the test statistics were significant at the level of 5%. Thus, it was concluded that the variables are stationary in their first differences.

The homogeneity values of the slope coefficients in cointegration equations were analyzed by the delta test developed by Pesaran and Yamagata (2008). The Pesaran and Yamagata (2008) delta test is calculated with the following formulas:

$$\tilde{\Delta} = \sqrt{N} \frac{N^{-1}\tilde{S} - k}{\sqrt{2k}}, \tag{6}$$

$$\tilde{\Delta}_{adj} = \sqrt{N} \frac{N^{-1}\tilde{S} - k}{\sqrt{Var(t,k)}}. \tag{7}$$

$\tilde{\Delta}$ test is used for large samples and $\tilde{\Delta}_{adj}$ test is used for small samples.

Table 3. Cross-sectional dependence and homogeneity tests

	Statistics	p-value
Cross-Sectional Dependence Tests		
CD_{BP}	554.87	0.000
CD_{LM}	70.406	0.000
CD	23.551	0.000
Homogeneity Tests		
$\tilde{\Delta}$	3.927	0.000
$\tilde{\Delta}_{adj}$	4.226	0.000

Source: own elaboration.

In order to choose the panel cointegration test, the cross-sectional dependence and homogeneity test of the panel should be performed. The cross-sectional dependence and homogeneity test results of the panel are given in Table 3. According to Table 3, CD_{BP}, CD_{LM}, and CD test statistics, the 5% level null hypothesis was rejected, and an alternative hypothesis was accepted. Thus, there is a cross-sectional dependence on the panel. The homogeneity test results are also given in Table 3. According to these results, the slope coefficients in the cointegration equation were found to be heterogeneous.

The cointegrated relationship of variables was analyzed using Westerlund's (2008) Durbin-Hausman cointegration test. To apply the Durbin-Hausman test, the variables must be stationary at the first difference. Since the stationarity of the variables was detected at the first difference (Table 2), this condition of the Durbin-Hausman test was satisfied. This test is analyzed by the following formula:

$$DH_G = \sum_{i=1}^{n} \hat{S}_i \left(\tilde{\phi}_i - \hat{\phi}_i \right)^2 \sum_{t=2}^{T} e_{it-1}^2. \tag{8}$$

DH_G test statistics are used in the case of heterogeneity of the sections.

Table 4. Panel cointegration test results

	Statistics	p-value
DH$_G$	−1.717	0.043

Source: own elaboration.

Table 4 presents the result of the Durbin-Hausman panel cointegration test. Based on the results, the alternative hypothesis was accepted by rejecting "there is no cointegration relation in the variables," which is a null hypothesis of 5%. Thus, it was concluded that the variables are cointegrated.

This study also used Emirmahmutoglu and Kose's (2011) panel causality test. The maximum delayed VAR model in heterogeneous mixed panels ($k_i + d$) used for this test is as follows:

$$x_{it} = \mu_i^x + \sum_{j=1}^{k_i + dmax_i} A_{11,ij} x_{i,t-j} + \sum_{j=1}^{k_i + dmax_i} A_{12,ij} y_{i,t-j} + u_{i,t}^x, \tag{9}$$

$$y_{it} = \mu_i^y + \sum_{j=1}^{k_i + dmax_i} A_{21,ij} x_{i,t-j} + \sum_{j=1}^{k_i + dmax_i} A_{22,ij} y_{i,t-j} + u_{i,t}^y, \tag{10}$$

where $dmax_i$ is the maximum degree of integration that can occur in the system for each i. In Equation 9, the focus is on the causality test from x to y, while in Equation 10, the focus is on the causality test from y to x.

Table 5. Emirmahmutoglu and Kose's panel causality results

	GDP ↛ SE	SE ↛ GDP
Fisher Statistics	45.260	52.260
P-Value	0.000	0.000

Source: own elaboration.

The analysis results of the causality relationship between social expenditure and economic growth using Emirmahmutoglu and Kose's (2011) panel causality test are given in Table 5. Based on Table 5, from economic growth to social expenditure and vice versa, the null hypothesis was rejected, and the alternative hypothesis was accepted. As a result, in the empirical analysis, a two-way causality relationship was found between economic growth and social expenditures.

Concluding remarks

This study investigated the relationship between social expenditures and economic growth of eight Central European countries from 1999 to 2019. The long-term relationship was tested with the help of the Durbin-Hausman cointegration test, while the causality relationship between the variables was analyzed with Emirmahmutoglu and Kose's panel causality test. In the results, the cointegration relationship between social spending and economic growth was determined. Thus, the variables will act together in the long term. As a result of the panel causality analysis, it was concluded that economic growth was the causative of social expenditures and social expenditures were the causative of economic growth. Thus, the growth of these countries' economies will positively affect social expenditures. The implementation of policies to increase social expenditures by countries whose economies are developing will increase demand, which will revive the markets.

In the literature, no study was found that examined the relationship between social spending and economic growth for eight Central European countries. This study found that social spending, which helps the growth of the eight Central European countries, will increase the welfare level of the countries. Along with this study, which is important in terms of contributing to the literature, social expenditures are a factor that will contribute to the development of countries.

Failure to address social spending while determining the policies to increase economic growth runs the risk of not reaching the desired growth figures in the economy. Therefore, policymakers also need to develop policies for social expenditures while shaping economic growth policies. In particular, such policies, which will increase demand, will also allow for the revival of the markets.

Policies to be developed for education expenditure, which is one of the social expenditures that are directly related to social welfare, will affect the welfare of the society in the short term. In addition, considering that spending on education has an effect that will reduce crime in society, the grounds for raising better quality individuals in society will be established.

The support share to be allocated for health expenditure, which represents a significant part of social expenditures, will enable individuals to be more effective within the social system, such as the positive effects it creates in educational institutions. Healthy individuals are important parts of the system in terms of being productive and positively affecting the production system. While diseases prevent individuals from performing their duties in the social and economic system, they may also cause incompatibilities and delays within the system in terms of functionality. For this reason, the social expenditure on health institutions actually serves to make every institution that the individual belongs to become more functional.

Finally, social protection expenditure, another aspect of social expenditure, is also important for the functionality of both the social and economic systems. Aid policies developed within the system are especially necessary for individuals who need pro-

tection. The reason behind the orientation towards policies regarding social protection expenditures around the world is the need to protect individuals from the effects of the globalization of neoliberal policies on the flexibility of markets. Consequently, the active participation of the individual in the production and consumption processes within the economic system is essential for the welfare of the country. It is known that the degree of development of a country results from the well-being of the individuals living in that country. Thus, social spending on the welfare of individuals will positively affect the economic and social development of the country.

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Dynamiczne powiązania między wydatkami socjalnymi a wzrostem gospodarczym: najważniejsze wnioski dla krajów Europy Środkowej

Rola państwa w systemie neoliberalnym jest omawiana w ramach koncepcji opracowanych dla wydatków społecznych. W związku z tym pytanie, czy państwo powinno pozostawać bierne, czy też udzielać obywatelom potrzebnego wsparcia, ukształtowało piśmiennictwo dotyczące zagadnienia wydatków socjalnych. Uważa się, że wzrost wydatków socjalnych wpływa na wydatki publiczne, a wydatki publiczne mogą pośrednio powodować deficyty budżetowe. Ponadto mówi się, że w okresach wzrostu gospodarczego następuje spadek wydatków socjalnych. Wszystko to wskazuje, że teoria mówiąca, że dla realizacji wzrostu gospodarczego państwo potrzebuje zarówno producentów, jak i konsumentów, została zepchnięty na dalszy plan. Analizy relacji między wydatkami socjalnymi a wzrostem gospodarczym są argumentami potwierdzającymi słuszność tego stwierdzenia.

Celem niniejszego opracowania jest empiryczna analiza długookresowego związku między wzrostem gospodarczym a wydatkami socjalnymi ośmiu państw Europy Środkowej oraz związku przyczynowego dla lat 1999 i 2019. Za pomocą badań empirycznych ustalono związek kointegracji między wzrostem gospodarczym a wydatkami socjalnymi. Na podstawie wyników analizy przyczynowości stwierdzono, że istnieje dwukierunkowa zależność między wzrostem gospodarczym a wydatkami socjalnymi. Sugestie dla polityki są podane w końcowej części artykułu.

Słowa kluczowe: wydatki socjalne, wzrost gospodarczy, ekonomia polityczna, państwa Europy Środkowej, dane panelowe