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Fiscal Policy Effects on the EU Real Economy: Pooled Mean Group Approach

Abstract: This paper analyzes the key activities and scope of fiscal policy functioning, providing a balance between stimulating economic growth, as opposed to additional burden on economies due to the financing of public expenditure through borrowing. The subject of the econometric analysis is how the dynamics of public expenditure affect the real gross domestic product (*RGDP*) in the long-term on a sample of 27 member states of the European Union (EU) in the period 2004q1-2024q2. Based on the results of the research using the macro panel data method (Pooled Mean Group), the conclusion is drawn that there is a long-term positive equilibrium relationship between the increase in public expenditure and the growth of *RGDP*, confirming the theoretical assumption of the existence of Keynesian effects. However, the speed of adjustment of individual economies to the long-term equilibrium relationship is heterogeneous, due to the absence of a unified fiscal policy within the EU. Individual adjustments were the most intense in small open economies, Slovenia and Slovakia, which implies that in these economies the effects of public expenditure to stimulate the real economy were recorded to a greater extent. Less intense, but statistically significant adjustments were recorded in the central EU: France, Germany and Belgium, as well as the peripheral economies of the EU: Portugal, Spain and Italy. The observed effects imply economic policy makers reconsideration whether this measure of using the fiscal policy mechanism is justified, taking into account the sources of financing public expenditure.

Keywords: Fiscal policy, Public expenditure, GDP growth, Pooled Mean Group approach.

1. INTRODUCTION

Fiscal policy represents one of the most important instruments of economic policy, through which the state apparatus tries to ensure, first of all, economic stability, then economic growth, including the sustainability of

public finances. The structure of public expenditure is extremely important for providing the vitality of the economic system. Fiscal expansion mediated by the growth of public expenditure, and directed towards investments in infrastructure, economy and education, can have a long-term and positive impact on economic growth. However, activities of increased public expenditure aimed at administration may have fewer effective implications (Tcherneva, 2011). Also, it is essential to consider the relationship between the growth of public expenditure and the growth of real gross domestic product (*RGDP*). The increased level of public expenditure due to the accumulation of economic activities opens the problem of fiscal deficit, if it is not accompanied by a simultaneous increase in public revenues. The lack of financial resources in the state budget can be provided through various models of foreign borrowing. In that case, it is necessary to assess whether the expected rates of economic growth in the coming years will be sufficient to service the state's debt. Also, an excessively high level of public expenditure can have negative effects, generating excessive and uncontrolled aggregate demand, which would potentially open the issue of rising inflationary pressures. Economic policy, which is based on the Keynesian postulates, indicates that the increased level of public expenditure can stimulate production, that is, positive effects on economic growth. This effect is especially present at times when the macroeconomics of a country is faced with stagnant economic activities, which may be followed by a deepening crisis, i.e. economic decline (Alesina and Ardagna, 2013). Also, a generous fiscal policy can achieve positive repercussions even in those moments when there is an insufficient level of interest on the side of aggregate demand. However, the effectiveness of public expenditure depends on the size of the multiplier. If the multiplier level is high, it will mean that a small increase in public expenditure can have significant and far-reaching effects on the real economy and economic growth. However, if the level of the multiplier is low, then even a high level of public expenditure would produce smaller effects on the real economy. Stated implies that the accumulation of public expenditure and fiscally generous economic policy can achieve economic growth, but only under certain conditions (Ramey, 2011). It is of crucial importance that public expenditure is used efficiently and financed sustainably, in order to avoid the negative consequences of excessive debt levels and potential inflationary pressure. Public expenditure as an instrument of fiscal policy represents the most complex mechanism of action on the real economy, which is manifested through continuous debates between economic policy makers. Therefore, a comprehensive analysis and observation of the long-term effects of fiscal policy on GDP growth in EU countries can provide relevant insights into the effectiveness of this instrument of economic policy, as well as indicate potential risks associated with expansive fiscal policy (Brender and Drazen, 2008). The effects of fiscal policy on the real economy are the subject of numerous academic discussions, especially in the context of economic integration and the heterogeneity of fiscal strategies among EU member states. This paper has a three-fold objective: (1) to analyze and provide a theoretical interpretation of how the dynamics of public expenditure affects the real gross domestic product in the long run, (2) that descriptive statistics show the dynamics of public expenditure and its impact on *RGDP* growth in the period 2004q1-2024-q2 on a sample of 27 EU member states, (3) and that, using heterogeneous panel models analyze whether there is a long-term equilibrium relationship between public expenditure and *RGDP* growth in the period 2004q1-2024-q2 on a sample of 27 EU member states. The hypotheses analyzed in the paper are as follows:

H_1: Long-term equilibrium relationship exists between public expenditure growth and real gross domestic product (RGDP) growth in a sample of 27 EU member states in the period 2004q1-2024q2.
H_2: The speed of adjustment of individual economies to the long-term equilibrium relationship is heterogeneous in the sample of 27 EU member states in the period 2004q1-2024q2.

The rest of this paper is organized as follows: after the introductory part, the second section provides a literature review, the third section provides a descriptive analysis of the dynamics of public expenditure and *RGDP*, the fourth section provides an empirical analysis of the key determinant of *RGDP* based on Pooled Mean Group (PMG) estimator, while the last section interprets the key considerations.

2. LITERATURE REVIEW

The discussion of economic policy makers on the effects of fiscal expansion on the real economy and economic growth is one of the most important topics of economic doctrine. Ensuring strong and stable economic growth that will be a generator of unemployment reduction and accumulation of economic activities, while not endangering the stability of public finances and the level of indebtedness, is the key goal of fiscal policy. Among

the economists who provided a thorough theoretical and empirical framework, including a comprehensive analysis of expansionary fiscal policy measures, investigating the dynamics of public expenditure and debt levels with the aim of stimulating economic activities and the real economy, are Blinder and Solow (1976), De Constance, Cédex & Mihov (2001), Blanchard and Perotti (2002), Perotti (2004), Arpaia and Turrini (2007), DeLong and Summers (2012) and Glavaški and Becker Pucar (2020). Schumpeter and Keynes (1936) concluded in their research that the use of fiscal expansion as a tool can ensure the stimulation of economic activities, especially in periods of stagnation or economic decline. That is, that the growth of public expenditure directed towards investment activities can have a stimulating effect on the growth of aggregate demand and on the reduction of unemployment. In their work, Zagler and Dürnecker (2003) confirm the Keynesian thesis that the growth of public expenditures and revenues can have long-term and positive implications for productivity and economic growth. Kasasbeh (2021) indicates that the use of fiscal policy as an economic program in the form of adjusting public revenues and expenditures during different phases of the economic cycle can have positive effects on the real economy. It also indicates that positive effects in the form of an increase in total production, productivity, including economic growth itself, are possible only if fiscal policy measures are used in an efficient and appropriate manner. In their research, Galí, López-Salido & Vallés (2007) analyze the effects of growth in public expenditure and indebtedness on economic growth in developed countries. They conclude that an increase in the level of indebtedness in order to achieve greater public expenditure aimed at investments can ensure positive effects on the real economy and thereby fulfill the Keynesian assumptions. Battaglini and Coate (2008) point out that the global economy in the 21st century was hit by major crises, which directly contributed to the increasing participation of the state in economic activities. Deep economic crises have inevitably led to increasingly frequent state interventions in the form of increased public expenditure, in order to avoid economic stagnation and, at the same time, the collapse of the economic system. They also point out that government interventions can produce positive effects on the economy not only by increasing aggregate demand, but by contributing to raising productivity and the growth rate of the economy. In their research, Battaglini and Coate (2008) provide a valuable answer to the question of whether economic policymakers should implement fiscal expansion measures with the aim of stimulating the real economy or not, depending on the level of indebtedness of the analyzed country. It concludes that it is justified to increase the level of public expenditure and indebtedness, only if the resources are directed towards increasing productivity and improving economic results, as well as maximizing household well-being. This confirms the Keynesian thesis. Alesina (2012) in his work indicates that the financial crisis of 2008 affected a large number of countries, and that fiscal policy, as a reflex instrument, took a central position. His research analyzes the effectiveness of discretionary fiscal policy measures during crisis circumstances with the aim of stimulating the real economy. In his concluding remarks, he points out that the increase in public expenditure compared to the reduction in tax rates was more effectively reflected in the real economy and GDP growth. This confirms that the countercyclical action of the fiscal policy created positive consequences for the macroeconomics, meaning non-Keynesian effects. While on the other hand, authors like Barro (1974), in their research, developed the hypothesis of Ricardian equivalence, which suggests that increased public expenditure can be neutralized, if it occurs by a sharp decrease in private consumption due to negative expectations, and an increase in future tax burdens. Stated implies that rational individuals reduce current consumption due to future tax increases necessary to service the debt and thereby neutralize the effects of fiscal expansion. Camous and Gimber (2018) point out that if the public debt is at an optimal level, without endangering the fiscal parameters, tax policy can be countercyclical in the form of the government reacting to lower production with reduced tax rates and higher public expenditure. However, this creates the possibility of a "fiscal policy trap ". In periods when production is low and fiscal policy is very generous, rational individuals, i.e. households, can reduce the level of personal consumption and investment due to greater fiscal burdens in the future and thus threaten the actions of fiscal authorities on the real economy. In his work, Uhlig (2010) investigates the interaction of fiscal and monetary policy using Bayesian VAR models. Based on the research results, he concludes that the implementation of an expansionary fiscal policy can have fewer effective effects, if simultaneously, restrictive monetary policy is implemented.

Based on a comprehensive review of the literature, we can conclude that research on the effects of fiscal policy on the real economy indicates that there is significant heterogeneity of results, where the effectiveness of fiscal derivatives, including the degree of indebtedness of the economy, the level of cooperation with other economies, as well as the interaction with monetary policy itself, is of essential importance. Economists who advocate the Keynesian model of economic policy emphasize the positive and long-term effects of expansionary fiscal policy on real GDP. Whereas, supporters of neoclassical economic thought and Ricardian theory point to potential negative consequences, such as the growth of public debt and the reduction of private investment and consumption. In the context of EU analysis, where there is no single fiscal policy, the analysis of the effects of fiscal policy becomes far more complex, requiring careful empirical research, explaining the specific characteristics of each economy.

The contributions of this work are diverse, as they provide a detailed theoretical and empirical analysis, indicating the existence of a long-term and positive relationship between the growth of public expenditure and the growth of *RGDP* (Keynesian effects), during the analyzed period 2004q1-2024q2 on a sample of 27 EU member states.

3. DESCRIPTIVE STATISTICS - EFFECTS OF PUBLIC EXPENDITURE ON REAL GDP

Fiscal policy and its effects on the real economy represent one of the central issues in macroeconomics, especially in the context of the functioning of the EU. The very nature of the functioning of fiscal policy measures requires a thorough analysis. The key reasons are manifested through the fact that the EU member states are first of all facing different economic challenges, the goals they strive for in terms of economic indicators, but also due to heterogeneous fiscal policy. The question that arises is whether the increase in public expenditure contributes to the growth of *RGDP* or, on the contrary, causes long-term economic distortions, deepening the crisis (Alesina and Giavazzi, 2013).

Figure 1 shows the average movement of public expenditure and the movement of the average real GDP in a sample of 27 member states of the European Union during the period 2004-2024, using annual data. Namely, the dynamics of the movement of these variables are similar, which implies that one of the key factors in the growth of *RGDP* during the observed period was precisely the growth of public expenditure. Namely, not only did the growth of public expenditure have a positive effect on the functioning of the real economy and economic growth, but we can conclude that the interventions of economic policy makers, implemented through the growth of public expenditure, provided countercyclical effects during the two crisis periods of 2008-2010 (Global financial crisis) and 2020-2021 (Pandemic crisis) year. During the mentioned years, the level of *RGDP* decreased, but the fiscal authorities responded with an expansive fiscal policy through the growth of public expenditure. This economic intervention aimed to preserve production, investments and productivity, but also to minimize the negative effects of crisis periods.

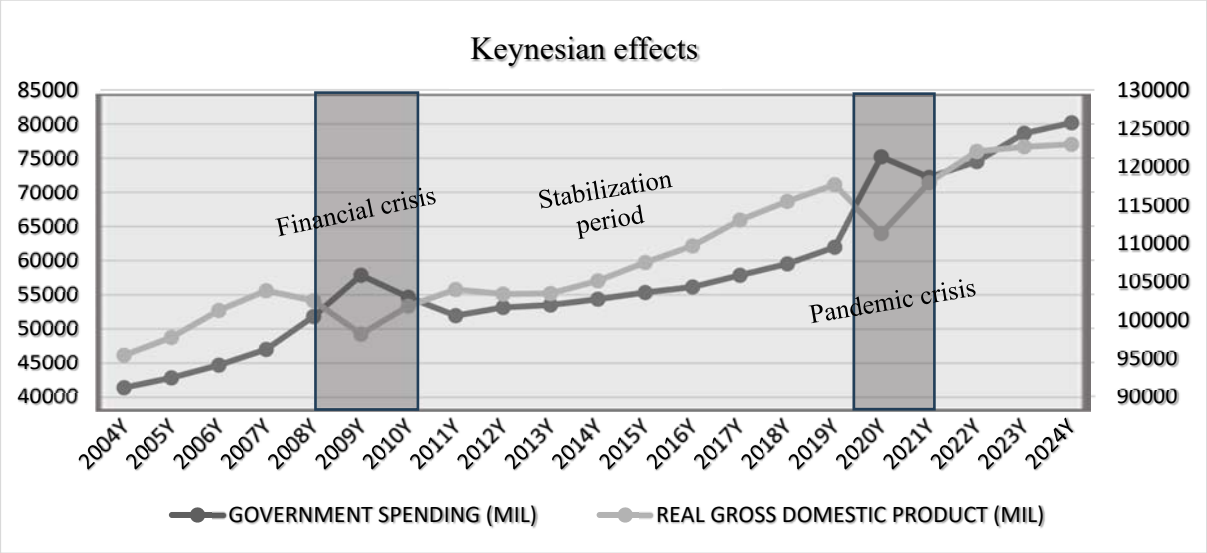

Figure 1: Average public expenditure and average *RGDP* in 27 European Union economies (2004-2024)

Source: Authors according to EUROSTAT.

Of course, it is necessary to point out that during the observed period 2004-2024, not all EU members implemented the same fiscal policy measures. During the observed period, countries such as Germany, Slovenia, Slovakia and France used public expenditure as a generator of economic growth, but also as a countercyclical factor during recessionary episodes.

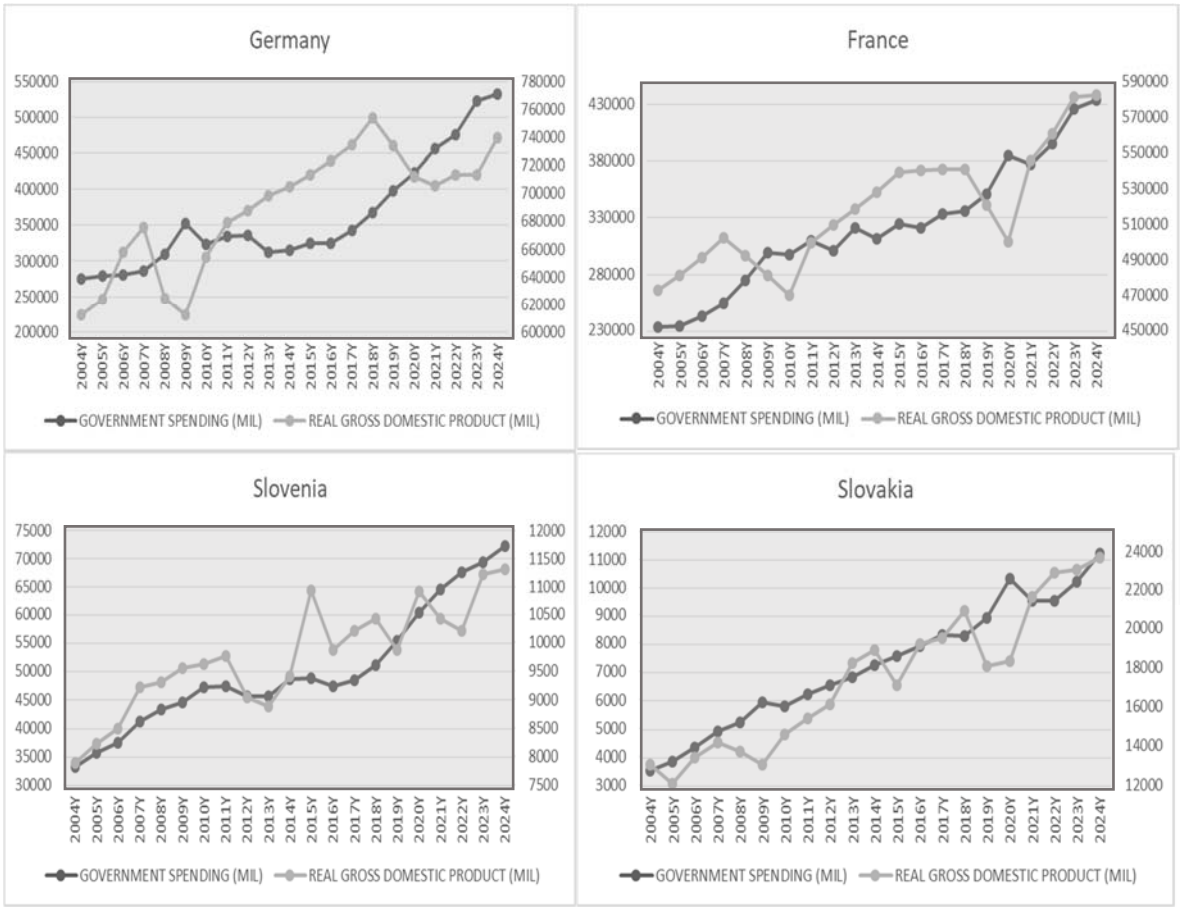

Figure 2: Pronounced Keynesian effects in Germany, Austria, Slovenia and Slovakia in the period (2004-2024)
Source: Authors according to EUROSTAT.

Also, on the other hand, it is necessary to point out that during the observed period, countries such as Portugal and Italy used public expenditure to a lesser extent as a mechanism of *RGDP* growth. One of the key reasons of the economic policy makers for this type of functioning of the fiscal policy is reflected in the fact that the aforementioned economies detected that an expansive fiscal policy can become unsustainable because it can lead to an increase in public debt and a fiscal crisis. Also, these countries have a traditionally high level of public debt, which can further burden the economy of these countries.

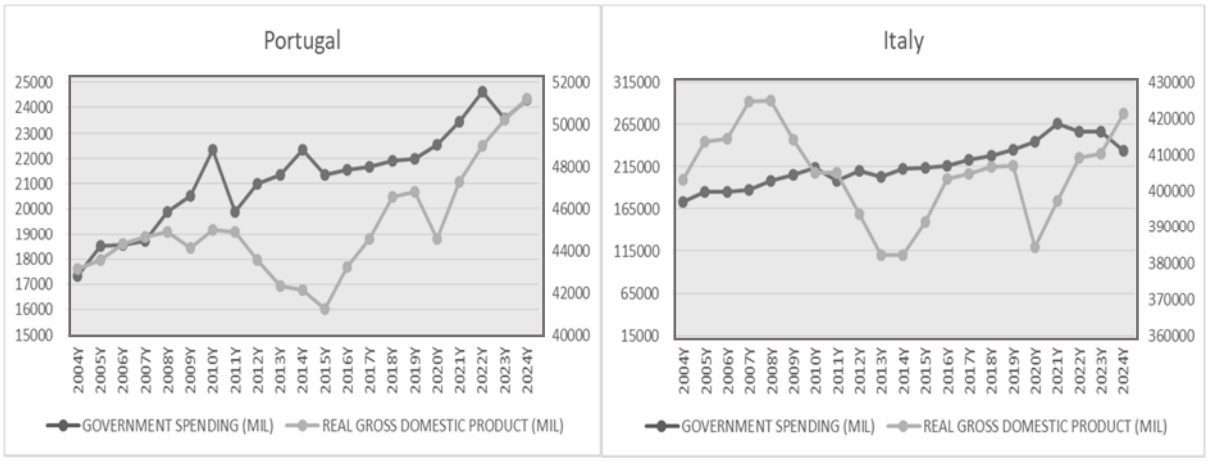

Figure 2: Less pronounced Keynesian effects in Portugal and Italy in the period (2004-2024)
Source: Authors according to EUROSTAT.

Based on the conducted research, it can be concluded that in the absence of a single fiscal union, economic policies should be adapted to the specifics of each country, in order to avoid the negative effects of borrowing and macroeconomic instability.

4. EMPIRICAL ANALYSIS IN EU MEMBER COUNTRIES

The empirical analysis is based on a panel analysis containing 27 cross-sectional units (27 EU member states) during the period 2004q1-2024q2. Thus, the number of observations included in the panel is 2187, where the variable *RGDP* represents the real gross domestic product used as the dependent variable. There are large differences in the case of minimum and maximum values of real gross domestic product, which is expressed in billions (mil). The lowest level of *RGDP* was recorded in the 1st quarter of 2004 in Malta (1378.6 million), while the highest level of *RGDP* was achieved in Germany in the 3rd quarter of 2022 (770584.3 million). The independent variable *PUBLIC EXPENDITURE*, also expressed in billions, recorded the minimum value in Malta (499 million) in the 1st quarter of 2004, while the highest level of *PUBLIC EXPENDITURE* was detected in Germany (553640 million) during the 3rd quarter of 2023.
Table 1 shows the Pesaran CD, Pesaran CIPS and Westerlund cointegration test. Based on the Pesaran CD test, we conclude that there is cross-sectional dependence (CSD) because the analyzed countries are mutually dependent. Based on unit root tests (Im et al. 2003), the analyzed variables: real gross domestic product and public expenditure are non-stationary, i.e. panel unit root tests fail to reject the null hypothesis of variable non-stationarity at the 5% significance level, which means that the variables *RGDP* and *PUBLIC EXPENDITURE* are non-stationary. Then, the stationarity of the first differences of the variables is tested. The results of the Pesaran CIPS test showed the stationarity of the variables in the first difference, that is, all the variables in the model are integrated of the first order, which is the basis for the cointegration relationship. Using Westerlund's (2007) test, it is estimated whether there is a cointegrating relationship. The null hypothesis indicates that there is no cointegrating relationship, compared to an alternative relationship that indicates the existence of cointegration between non-stationary variables. The results based on the Westerlund test show that the null hypothesis is rejected, which means that *RGDP* and *PUBLIC EXPENDITURE* are cointegrated. Mean Group (MG) and Pooled Mean Group (PMG) methods defined by Pesaran et al. (1997, 1999) are further used to assess the existence of a long-term equilibrium relationship between real gross domestic product and public expenditure, as well as the dynamics of adjustment of individual economies to the long-term relationship.

Table 1: Pesaran CD test, Pesaran CIPS test and Westerlund cointegration test

Variables	Pessary CD test	p-values	Lags	CIPS panel unit root test in the level	p-values	CIPS test at the first differences	p-values	Westerlund cointegration test		Robust p-values (bootstrap)
GDPR			0	-24.456	0.000	-5.076	0.000	Gt	-2.072	0.021
	49.16	0.000	1	-17.983	0.399	-0.257	0.000	Ga	-1.508	0.015
			2	-4.567	0.997	2,790	0.000			
PUBLIC EXPENDITURE			0	-19.567	0.000	-16.002	0.000			
	134.85	0.000	1	-14.321	0.481	-9.482	0.000	Pt	-3.069	0.012
			2	-6.798	0.999	-4.351	0.000	Pa	-0.207	0.029

Source: Author's calculation.

Table 2, using the MG and PMG methods, examines the existence of a long-term equilibrium relationship between real gross domestic product and public expenditure, as well as the speed of adjustment of individual economies to the long-term equilibrium relationship. Based on the results obtained in both cases, the cointegration ratio of the analyzed variables is statistically significant and positive: 0.6466 in the PMG model, and 0.7822 in the MG model. In comparing these two methods, a higher long-term coefficient is estimated in the MG method. Given that the error correction parameter is significant and negative, indicating the speed of adjustment towards long-term equilibrium, the total adjustment in the PMG model is -0.1094, indicating that 10.94% of the deviation is corrected in one year, while the adjustment in the MG model is -0.1357, indicating that on average, 13.57% of the deviation is corrected in one year. Moreover, short-term coefficients show that in average increase of public expenditure increase *RGDP* (average magnitude of influence is low, but still significant: 0.04 in PMG and 0.026 in MG specification). However, Hausman's test for the long-term homogeneity of the relationship showed that the PMG method provides an optimal specification, with efficient estimates, given the heterogeneous implementation

of the fiscal policy of the observed countries (heterogeneus adjustments) with common fiscal rules (homogeneous long-term relationship).

Table 2: Results of PMG and MG estimator for homogeneous coefficient for 27 European Union economies in the period from 2004q1-2024q2

Dependent Variable *GDP*	**Long-Term Equilibrium**		**Error Correction**		***Δ PUBLIC EXPENDITURE***		**μi**	
	Coef.	p-value	Coef.	p-value	Coef.	p-value	Coef.	p-value
PMG	0.6466	0.000	-0.1094	0.000	0.040	0.092	12770.99	0.071
MG	0.7822	0.000	-0.1357	0.001	0. 026	0.033	14755.31	0.048
Hausman test statistic	0.47	0.52						

Source: Author's calculation

Table 3 shows the heterogeneous impact of public expenditure growth on real gross domestic product using the PMG method. Based on the obtained results, we conclude that there is a heterogeneous long-term equilibrium relationship between the growth of public expenditure and real gross domestic product. This effect was most pronounced in France, Germany, Slovenia, Slovakia and Belgium, while a weaker but statistically significant effect was present in Italy, Spain, Bulgaria, Austria and Portugal.

Table 3: Results of the PMG Estimator for the heterogeneous coefficient for 27 European Union economies in the period from 2004q1-2024q2

PMG ESTIMATOR	**Error Correction**		**Δ*PUBLIC EXPENDITURE***		**μi**	
	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value
Belgium	**-0.2691**	**0.001**	-0.4276	0.111	16156.56	0.001
France	**-0.5929**	**0.000**	**-0.7912**	**0.039**	187698.4	0.000
Croatia	-0.0921	0.151	**-0.218**	**0.033**	779.9956	0.124
Italy	**-0.0919**	**0.014**	**-0.1654**	**0.018**	24561.78	0.015
Spain	**-0.1489**	**0.026**	**-0.2797**	**0.021**	29713.73	0.022
Greece	-0.0152	0.445	**-0.0539**	**0.023**	817,395	0.386
Ireland	-0.0046	0.813	-0.0442	0.033	436,810	0.543
Estonia	-0.0768	0.058	-0.1561	0.002	240.8054	0.050
Germany	**-0.5989**	**0.047**	**-0.5944**	**0.002**	47469.73	0.040
Denmark	-0.0106	0.729	0.0708	0.049	672.86	0.608
Czech Republic	-0.052	0.148	0.1230	0.018	1768,526	0.104
Bulgaria	**-0.0571**	**0.044**	**-0.1128**	**0.008**	437.3968	0.020
Cyprus	-0.0406	0.325	*-0.1128*	*0.102*	177.7878	0.235
Latvia	-0.0717	0.117	-0.1214	0.142	289.0418	0.085
Lithuania	-0.0067	0.793	-0.1614	0.119	103.9554	0.514
Luxembourg	-0.0614	0.156	**-0.0576**	**0.044**	547.8935	0.113
Hungary	-0.0784	0.091	**0.1463**	**0.023**	1590.293	0.067
Malta	-0.0209	0.219	**-0.1696**	**0.012**	4.6951	0.866
Netherlands	-0.0399	0.359	0.0124	0.064	5231.124	0.302
Austria	**-0.1629**	**0.007**	**-0.0125**	**0.045**	8127.048	0.007
Poland	-0.0011	0.947	-0.2819	0.438	755,683	0.531
Portugal	**-0.1612**	**0.006**	**-0.0311**	**0.033**	5026.93	0.006
Romania	-0.015	0.284	0.2768	0.445	125.6822	0.744

Slovenia	**-0.7881**	**0.000**	-0.5599	0.316	253,722	0.000
Slovakia	**-0.7994**	**0.000**	-0.0561	0.237	5403.411	0.000
Finland	-0.0262	0.458	-0.095	0.237	875,566	0.411
Sweden	-0.0468	0.101	-0.102	0.073	3497.966	0.062

Source: Author's calculation.

Also, based on the presentation in Table 2, it can be seen that the speed of adjustment of individual economies to the long-term equilibrium relationship is of a heterogeneous character. For example, individual adjustment to the long-term equilibrium relationship was most intense in small open economies: Slovenia, Slovakia, and in the central EU economies: France and Germany, which means that precisely those economies used fiscal expansion mechanisms to a greater extent as a generator of economic growth and a means of countercyclical action. While, on the other hand, a slower intensity of adjustment, i.e. a lower level of use of public expenditure as a mechanism of real gross domestic product growth, was recorded in peripheral EU economies: Portugal, Italy, Irealnd, Croatia, Greece and Spain. Moreover, short-term coefficients show that public expenditure has significant additional effects on *RGDP* growth in France and Poland, while, additional increase of public expenditure in Greece would lower *RGDP*, and *vice versa*, showing non-Keynesian effects. The conclusion is that during the analyzed period 2004q1-2024q2, all EU members used the mechanism of fiscal expansion, which was realized by an increased level of public expenditure, but with different intensity. The reasons that directly argue the interpreted results are: (1) the absence of a unified fiscal policy in the EU, which indicates the existence of heterogeneous behavior of economic policymakers within the EU member states. Cooperation between EU member states regarding key variables (public expenditure, taxes) is based only on flexible coordination, which provides the opportunity for Governments to independently make decisions on the functioning of public finances; (2) countries with a traditionally high level of indebtedness and fiscal deficit (Greece, Portugal, Spain, Italy and Ireland) did not use fiscal expansion mechanisms to a large extent during the analyzed period. One of the key reasons for this behavior is reflected in the fact that the additional growth of public expenditure would deepen the fiscal deficit, create a new burden in the form of public debt and thus further threaten the already threatened sustainability of public finances; (3) states that formulate their economic policy on expectations based on Keynesian effects, and which are not over-indebted, use the mechanism of public expenditure expecting positive effects on the real economy. Countries with high public expenditure: Finland and Denmark spend more than 50% of GDP on public expenditure (Eurostat, 2023); (4) states that expect non-Keynesian effects as the final consequence of the implemented measures of fiscal expansion, believe that if there is an increase in public expenditure, which is not accompanied by an increase in public revenues (increase in tax rates), they could face additional borrowing, and at the same time, a decrease in available capital directed to the private sector. On the other hand, the increase in taxes would depreciate the purchasing power of the household and negatively affect investments and production. Stated implies that high public debt, high taxes and fiscal deficit can potentially reduce economic growth and act as a disincentive for the real economy (Reinhart and Rogoff, 2010). Finally, we conclude that hypothesis 1 and hypothesis 2 are confirmed, i.e. that there is a long-term equilibrium relationship between the growth of public expenditure and the growth of real gross domestic product, as well as that the dynamic of adjustments of individual economies to the long-term equilibrium relationship is heterogeneous during the analyzed period 2004q1-2024q2 on a sample of 27 EU member states.

5. FINAL CONSIDERATIONS

Based on the conducted econometric analysis that investigates the scope of action, as well as the effects of expansive fiscal policy on the real economy, based on the use of heterogeneous panel models, more specifically, on PMG method in the period 2004q1-2024q2 on a sample of 27 EU member states. It showed that there is a long-term equilibrium relationship between the growth of public expenditure and real gross domestic product, which implies the confirmation of hypothesis (H_1). The obtained results confirm the Keynesian hypothesis about the stimulating effects of fiscal expansion, based on the growth of public expenditure. It is necessary to point out that the creators of economic policies used accumulated public expenditure, not only in periods of stable economic activities, as a generator of economic growth, but identical reactions of economic authorities were also detected during periods of crisis (Global financial 2008-2010 and Pandemic crisis 2020-2021), in order to mitigate economic shocks and thereby contribute to the stabilization of economic activities. Also, the research identified significant heterogeneities in the adjustment of individual countries to the long-term equilibrium relationship. The most intense effects of fiscal expansion on real gross domestic product were recorded in Slovenia and Slovakia,

which suggests that smaller, open economies with more flexible labor markets used fiscal stimulus more effectively to stimulate growth. The central economies of the EU (Germany, France) also showed positive effects of fiscal policy, while the peripheral economies of the EU (Portugal, Spain, Italy) had weaker but statistically significant effects. We can conclude that hypothesis (H_2) is also accepted, which indicates that the speed of adjustment of individual economies to the long-term equilibrium relationship is different in the sample of 27 EU member states in the period 2004q1-2024q2. The key interpretations that argue these results are reflected in the heterogeneous conduct of fiscal policy within the European Union, different levels of public expenditure, the tax system and the level of indebtedness, but also expectations based on Keynesian and non-Keynesian effects after the implementation of fiscal expansion measures. Countries with high public expenditures (France and Belgium) achieved more stable GDP growth, but with a greater fiscal burden. On the other hand, countries with a traditionally high level of public debt (Portugal, Italy) have limited the stimulating mechanisms of fiscal policy, due to the fear of creating additional debt. These results indicate the importance of the implications of fiscal policy on the real economy within the EU member states. Although fiscal expansion can be an effective mechanism for stimulating economic growth, it is necessary to ensure the sustainability of public finances and carefully balance between government spending, the level of indebtedness and tax policies. According to that, the choice of implemented fiscal policy activities is of crucial importance so that negative externalities do not occur. Economic policy makers must take into account the specifics of each country, including the dynamic of economic cycles, in order to make optimal decisions that will stimulate economic growth and at the same time preserve macroeconomic stability.

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