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ASSESSING THE EFFECTIVENESS OF THE FISCAL POLICY TOOLS IN FACILITATING INCLUSIVE ECONOMIC GROWTH

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Introduction. Fiscal policy aims to promote economic growth and ensure inclusive growth in reaching low-income populations and benefit from economic activity. Therefore, fiscal policy instruments should be appropriately chosen to achieve inclusive growth. Maintaining the financial system's stability determines the critical role of fiscal policy, especially given its impact on economic growth and the reduction of income inequality. Therefore, it is crucial to identify targeted fiscal measures to promote economic development and reduce income inequality simultaneously.

Aim and tasks. This study investigates the effects of fiscal policy instruments on inclusive growth in several selected countries, including EU members and EU candidate countries. The analysis covers the period from 1996 to 2022, using a Bayesian VAR model to examine data on direct and indirect taxation and current and capital spending, with GDP per capita (or GDP growth) and the GINI index serving as the impact variables.

Results. The results indicate that capital spending positively affects GDP growth while reducing the GINI index, which causes inclusive growth but does not have an immediate impact. Current spending is a fiscal policy instrument that does not positively affect inclusive growth, as it does not promote economic growth but only increases income equality. Direct taxes increase GDP but do not always reduce the GINI index. As for indirect taxes, this policy instrument is frequently used for inclusive growth. It promotes economic growth, reduces the GINI index, and creates more equally distributed income among the population. Therefore, achieving inclusive economic growth is more feasible for the selected EU members and candidate countries through increased capital spending or indirect taxes.

Conclusions. The study found that indirect taxes can reduce income inequality with inclusive growth. Capital expenditures play a crucial role in the medium and long term in helping to achieve inclusive economic growth in a country. For developing countries, direct taxes and capital expenditures can effectively achieve inclusive growth. In contrast, developed countries can achieve similar results using a combination of tax measures and expenditures.

Keywords: fiscal policy, economic growth, inclusive growth, inequality, capital spending, taxation.

1. Introduction.

Fiscal policy, as a system of regulating the economy, includes using government spending and tax policies to influence macroeconomic stability. On the one hand, managing government spending helps regulate government spending by ensuring and financing it (Afonso et al., 2008). On the other hand, tax policy can influence the increase or decrease of tax revenues to the state budget and impact economic growth.

However, another question is whether this growth is inclusive. In other words, does this fiscal policy positively affect the country's population, and is the economic growth distributed to the country? It is necessary to examine inequality statistics to answer these questions, given the importance of assessing fiscal measures to promote sustainable economic growth while reducing national inequality and benefiting the entire population. The importance of fiscal policy has increased during the global financial crisis and is manifested through its impact on economic growth.

In particular, it is crucial to study the policy measures that are more effective in promoting economic growth. Simultaneously, in financial crises, it is necessary to analyse the redistributive impact of fiscal policy further and assess how fiscal policy affects poverty or income inequality (Oseni & Akpa, 2023). This also requires a more detailed consideration of the trade-off between economic growth and income inequality in fiscal policy implementation (Castello-Climent, 2010; Calderon & Serven, 2016).

Therefore, this study aims to identify fiscal instruments that can significantly affect inclusive economic growth in selected countries: EU Member States (Ireland, Latvia, Lithuania and Estonia) and EU accession countries (Georgia and Moldova). In this regard, questions related to the impact of fiscal policy on the macroeconomics conditions become important.

This study aims to determine how different fiscal policy measures affect economic growth and income inequality and whether fiscal policy can achieve the intended results.

2. Literature review.

When discussing fiscal policy implications, it is often shown that there is a trade-off between economic growth and income equality. Policies can be directed toward higher economic growth, but mainly, high-income people benefit from it. Moreover, some policies can be oriented toward income equality, but these can worsen economic activity. This proves that working with both objectives during fiscal policy implementation might be challenging.

Pashourtidou et al. (2014) found that output declines more when fiscal consolidation is achieved through spending cuts rather than revenue increases. Mikeladze (2023) examines how government spending affects GDP and demonstrates that capital spending is a crucial driver of economic growth. Numerous studies have examined how fiscal policies affect the income distribution. For instance, Bastagli et al. (2012) contended that public spending and progressive income taxes effectively reduce income inequality.

According to David and Petri (2013), Martinez-Aguilar et al. (2017) and Musibau et al. (2024), social protection expenditures, subsidies, or government expenditures help reduce inequality, while progressive income taxes and public revenue have a negligible impact on income distribution.

Malla and Patranarakul (2022) argued the potential and benefits of income taxes in reducing income inequality, especially in middle- and low-income countries. At the same time, Nguyen (2023) found that combining progressive taxation with social transfers can also reduce income inequality. Mawejje and Odhiambo (2021) investigate the effects of fiscal policy on various macroeconomic variables, showing that the impact differs between the short run and long run.

Liu and Martinez-Vazquez (2015) and Khan and Padda (2021) found several advantages in combining direct and indirect taxes to balance economic growth and reduce income inequality. Yeboua (2021) found that current spending reduces inequality but can slow economic growth, while capital spending contributes to economic development and income gap reduction.

Muinelo-Gallo and Roca-Sagales (2014) confirmed that capital spending simultaneously stimulates economic growth and helps reduce income inequality. Several studies have suggested that capital spending is better for managing the trade-off between growth and inequality. Calderon and Serven (2016) analysed the positive impact of infrastructural development on economic growth while reducing inequality. Similarly, López (2003) analyses the impact of spending on infrastructure and education and concludes that it leads to growth and progressive distributional change.

Muinelo-Gallo and Roca-Sagalés (2013) conclude that distributive expenditures and direct taxes cause a reduction in GDP growth while simultaneously reducing inequality. These studies show that the results can be contradictory; however, current spending tends to reduce income inequality and economic growth, while capital spending usually stimulates economic growth. Claus et al. (2012) analysed that taxation had a significant impact on income distribution. Yeboua (2021) indicated that while higher current spending undermines economic growth, it reduces income inequality.

However, capital spending and direct taxes were found to promote more inclusive growth. Calderon and Serven (2016) also analysed the impact of capital expenditure and found that it positively impacts economic growth and reduces income inequality. Beyond fiscal policy, there are structural policies that can benefit from both growth and equality, but others may involve trade-offs.

Moreover, inequality can affect economic growth, and policies targeting the reduction of inequality might positively affect the economy (Castello-Climent, 2010; Dabla-Norris et al., 2015; Islam et al., 2017).

However, the results might differ according to country characteristics such as income level. For example, Castello-Climent (2010) concluded that the impact of inequality on economic growth is lower and may even become positive in high-income countries.

3. Data Description and Methodology.

3.1. Data.

GDP data and the Gini index were used to measure economic growth and income inequality for selected EU Member States and candidates to assess whether any fiscal measures lead to inclusive growth (SWIID, 2024). The fiscal policy variables include direct and indirect taxes and current and capital spending as a percentage of GDP.

Data were collected from four EU member countries (Estonia, Ireland, Latvia, and Lithuania) and two EU candidate countries (Georgia and Moldova). The EU member countries are treated as benchmark nations for candidates. The decision to choose these countries is also because they are post-Soviet countries, such as Georgia and Moldova, which makes the comparison more relevant.

Table 1 below presents the real GDP and population of these countries as basic characteristics.

Table 1. Real GDP and number of populations in the selected countries*.

Country	Number of population (mln.)	GDP (constant 2015 mln. US dollars)
Estonia	1.36	27,659
Georgia	3.81	22,888
Ireland	5.26	483,000
Latvia	1.87	31,887
Lithuania	2.86	52,308
Moldova	3.03	9,165

** Population data is provided as of 2024, while GDP is provided for 2023.*
Source: based on Worldometer (n.d.), World Bank (2024).

For simplicity, this paper uses the following abbreviations for the variables: GDP (Gross Domestic Product), GINI (GINI Index), CurExp (Current Expenditure), CapExp (Capital Expenditure), DirRev (Direct Revenue), and IndirRev (Indirect Revenue).

Table 2 below provides a detailed explanation of the variables and their corresponding abbreviations used throughout this study. Table 3 below presents the descriptive statistics of the variables used in this study.

Table 2. Abbreviations of used variables.

Variable	Abbreviation
GDP per capita by Purchasing Power Parity	GDP
GINI index	GINI
Current spending (% of GDP)	CurExp
Capital spending (% of GDP)	CapExp
Revenue from Direct Taxes (% of GDP)	DirRev
Revenue from Indirect Taxes (% of GDP)	IndirRev

Table 3. Descriptive statistics of used variables.

Variable		Estonia	Georgia	Ireland	Latvia	Lithuania	Moldova
GDP	Mean	20,303	11,867	242,609	23,679	35,402	6,437
	Min	10.761	5,332	19,252	12,670	18.837	3,858
	Max	28,648	21,296	498,960	31,977	52,485	9,574
GINI	Mean	33.0	39.5	30.6	34.1	33.9	35.0
	Min	30.7	35.9	28.3	29.9	31.4	30.8
	Max	35.4	42.2	32.9	35.6	36.2	38.6
CurExp	Mean	34.5	23.0	31.9	44.7	35.1	29.1
	Min	29.2	14.6	19.8	36.0	31.0	22.2
	Max	41.1	31.3	62.4	55.3	49.0	38.0
CapExp	Mean	2.3	3.4	1.3	-0.6	0.6	3.9
	Min	0.4	-0.1	0.3	-4.9	-1.6	2.3
	Max	4.0	7.0	3.6	2.4	3.0	6.7
DirRev	Mean	7.7	6.6	11.7	4.1	7.4	1.6
	Min	6.3	2.0	9.7	2.0	4.3	0.2
	Max	10.2	9.9	13.5	5.9	9.9	3.9
	Mean	12.9	11.7	10.8	17.4	11.4	15.1
	Min	11.3	5.9	6.3	14.8	10.7	10.6
	Max	14.3	14.6	13.9	19.7	13.3	20.0

3.2. Theoretical Framework.

Policymakers should carefully select fiscal policy instruments to facilitate inclusive economic growth. As reviewed above, there needs to be more research regarding fiscal policies' impact on economic growth and inequality in EU members and candidate countries. The challenge lies in addressing inequality while focusing on economic growth during the fiscal policy implementation. This highlights the need for additional research on this aspect.

Therefore, this study analyses the impact of fiscal policy on inclusive growth in selected EU member and candidate countries. In the context of confrontational globalization and economic uncertainty (Bedianashvili, 2023, 2024; Papava, 2022), this study aims to define fiscal policy instrument causes inclusive growth by increasing economic performance while supporting income distribution within the EU region, specifically among several selected EU members and candidate countries. Figure 1 presents the conceptual framework of the hypotheses.

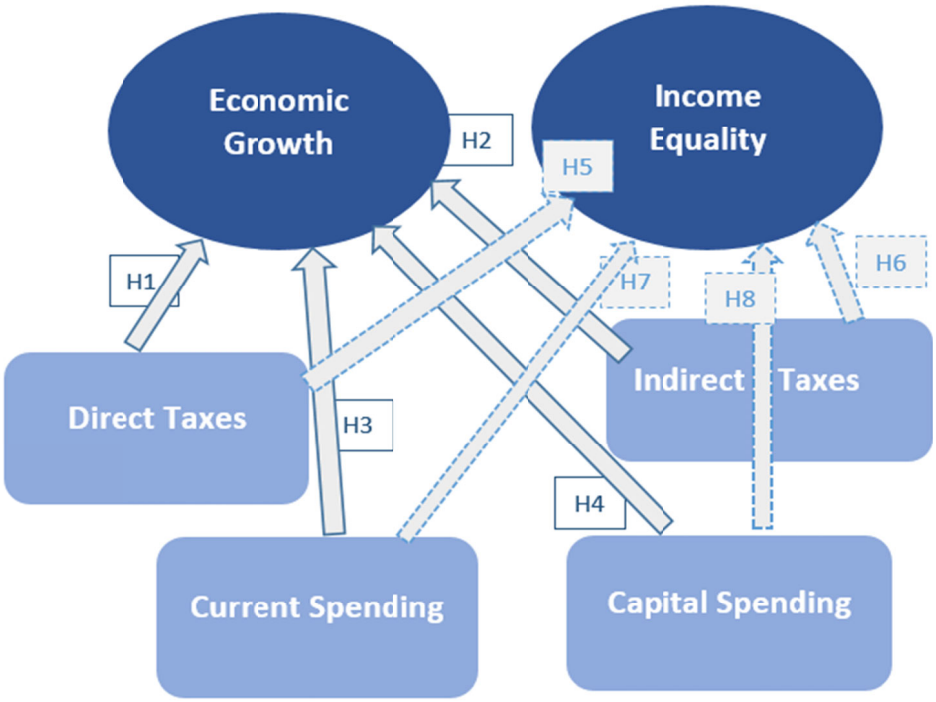


Fig. 1. Conceptual Framework.

The conceptual framework uses GDP per capita to indicate economic growth, whereas the GINI index indicates income inequality. Direct and indirect taxes and current and capital spending represent fiscal policy instruments. Based on this, the following hypotheses were put forward:

H1: Direct taxes have a significant impact on the GDP.

H2: Indirect taxes have a significant impact on the GDP.

H3: Current spending has a significant impact on GDP.

H4: Capital spending has a significant impact on GDP.

H5: Direct taxes have a significant effect on income equality.

H6: Indirect taxes have a significant effect on income equality.

H7: Current spending has a significant effect on income equality.

H8: Capital spending has a significant effect on income equality.

Inclusive growth can be achieved when one of the following occurs: H1 or H5, H2 or H6, H3 or H7, or H4 or H8.

Considering the need to investigate how fiscal policy measures affect economic growth and income inequality, or in other words, which fiscal policy instruments promote inclusive growth, a Vector Auto-Regressive (VAR) model is preferred.

However, as the used data consists of only 27 annual observations (1996–2022), which is relatively small dataset, the Bayesian Vector Auto-Regression (BVAR) model can be more effective.

The main reason this study uses the BVAR method is that it prevents the overfitting problem of the data, which can cause inaccurate estimates, especially when working with small datasets with multiple variables. BVAR also uses prior information, which results in more realistic estimations than standard VAR models (Karagöz & Keskin, 2016).

The standard VAR model can be represented as:

$$Y_t = B_1 Y_{t-1} + B_2 Y_{t-2} + \ldots + B_p Y_{t-p} + D z_t + \varepsilon_t \quad (1)$$

$$y_t' = c + \sum_{p=1}^{t} y_{t-p}' b_i + D z_t + \varepsilon_t' \quad (2)$$

Where y is a vector of endogenous variables, D is the set of the parameters, z consists of exogenous variables, ε is the error term, and p is the lag length of the variables.

Given the small dataset of 27 years, the BVAR model is preferable to the VAR model because it controls for overfitting, used prior information, and is resulted in more reliable estimates. To implement Bayesian VAR estimation and avoid imprecise results, the above equation can be adapted as follows:

$$Y_t = X_t\beta + \varepsilon_t \quad (3)$$

Where, $X_t = (I_n \otimes W_{t-1})$, which is the matrix of $n \times nk$ and $W_{t-1} = (Y'_{t-1}, Y'_{t-2}, \dots, Y'_{t-p}, z'_t)'$ is $k \times 1$, $\beta = vec(B_1, B_2, \dots, B_P, D)$ is $nk \times 1$. In this BVAR specification, prior distributions are introduced to shrink parameters, ensuring more robust estimations even in small sample sizes.

For the BVAR estimation model, one of the most commonly used prior distributions is multivariate normal prior for the *B* coefficient matrix and an independent inverse Wishart prior for the covariance matrix ∑ (Karagöz, & Keskin, 2016).

The posterior distribution will follow a Normal – Wishart form. Another frequently used prior distribution is the "Minnesota prior" (Litterman, 1980), which transforms the VAR model into a random walk process for each variable (Luetkepohl, 2011). This study derives the posterior parameter estimates for the BVAR model using Minnesota priors, as Moreira et al. (2015) mentioned.

These priors include μ_1, $\lambda_1, \lambda_2,$ and λ_3, which are explained as follows:

- μ_1 is the prior mean of the first lag coefficient, set to 1.0, which follows a random walk process.
- λ_1 controls the overall tightness of the prior distribution around the first lag of other variables set to 0.2.
- λ_2 governs the relative tightness of the priors on the coefficients for lags of other variables, set to 1.0, and
- λ_3 adjusts for the lag length, representing the lag decay, also set to 1.0.

These priors ensure that the BVAR model effectively incorporates prior information to help estimate the small dataset more accurately.

4. Results

Using BVAR model estimation techniques and theoretical economic intuition, we examine how fiscal policy variables such as direct and indirect taxes and current and capital spending affect economic growth and income inequality. This analysis helps to determine which policy instruments help in inclusive growth, considering that direct taxes may be more beneficial for equality than indirect taxes.

Indirect taxes (VAT, excise duty and import tax) can promote economic growth but increase income inequality. In contrast, direct taxes (personal income tax, corporate income tax (CIT) and property tax) can reduce inequality but undermine economic growth. As for the spending measures, we separate current and capital spending, as they differ according to their intention.

Capital spending (expenditures) is infrastructure spending that promotes economic growth more than current spending. However, compared to capital spending, current spending might positively impact inequality, as it includes wages, subsidies, and social benefits.

This study employs cointegration techniques to uncover long-term equilibrium connections among fiscal variables, GDP, and income inequality. The Granger causality test was used to determine which fiscal variables impacted economic growth or income inequality before generating impulse-response functions. This involved formulating and evaluating both the null and alternative hypotheses. The cointegration analysis investigates whether fiscal instruments are linked to economic growth or income inequality, with the null hypothesis suggesting no such link.

In some instances, the null hypothesis could not be rejected, signifying a lack of relationship between the examined time series. However, the impulse-response function is still performed, since cointegration implies a long-run equilibrium relationship between the time series. At the same time, impulse response is valuable for more short-term dynamics and the immediate effects of shocks.

Therefore, it was used 1 to 10 years as in the impulse response. It was considered a short-term, long-term relationship lasting 10 years or more. The estimation techniques in this study include determining the BVAR ordering using Schwarz information (SC) and the Hannan-Quinn (HQ) information criterion. It was taken into account that if SC and HQ suggest different lag orders, we rely on SC criteria as we are using the results for the economic analysis where SC is preferred. These criteria indicate that the optimal lag for Latvia is one, whereas there are two lags for the remaining countries. The properties of the residuals were checked to ensure that the model was free from serial correlations and satisfied the stability condition.

Using the posterior parameter estimations for the BVAR model, using the Minnesota priors, were used more common values for the priors: $\mu_1 = 1.0$ (indicating a random walk process), $\lambda_1 = 0.2$, $\lambda_2 = 1.0$, and $\lambda_3 = 1.0$.

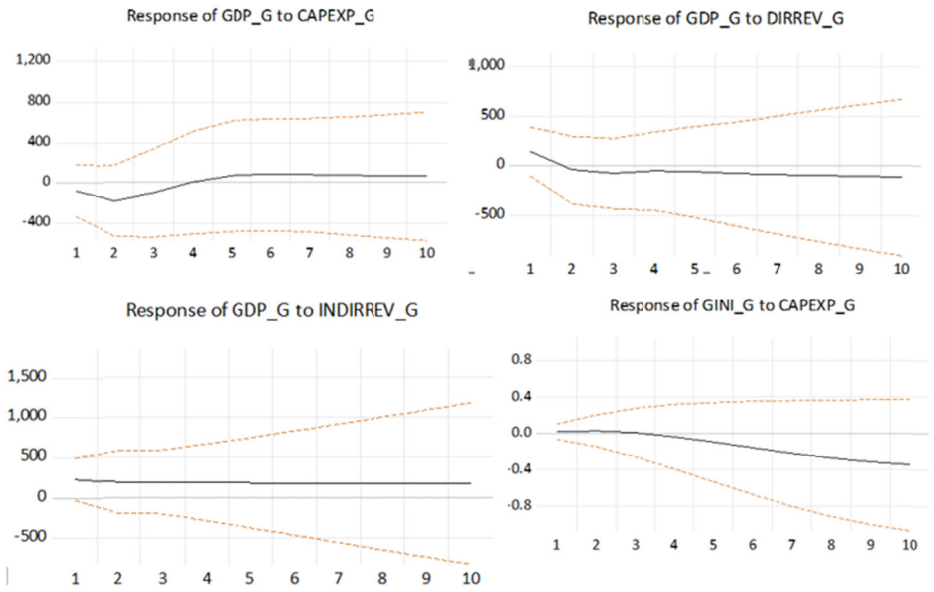
The impulse-response functions show the impact of one standard deviation shock in each fiscal variable (direct tax to GDP, indirect tax to GDP, capital spending to GDP, and current spending to GDP) on economic growth and income equality. This shows whether the conceptual framework works for the six selected countries.

The impulse-responses for each country (Fig. 2) below show how changes in fiscal policy affect economic growth and income inequality.

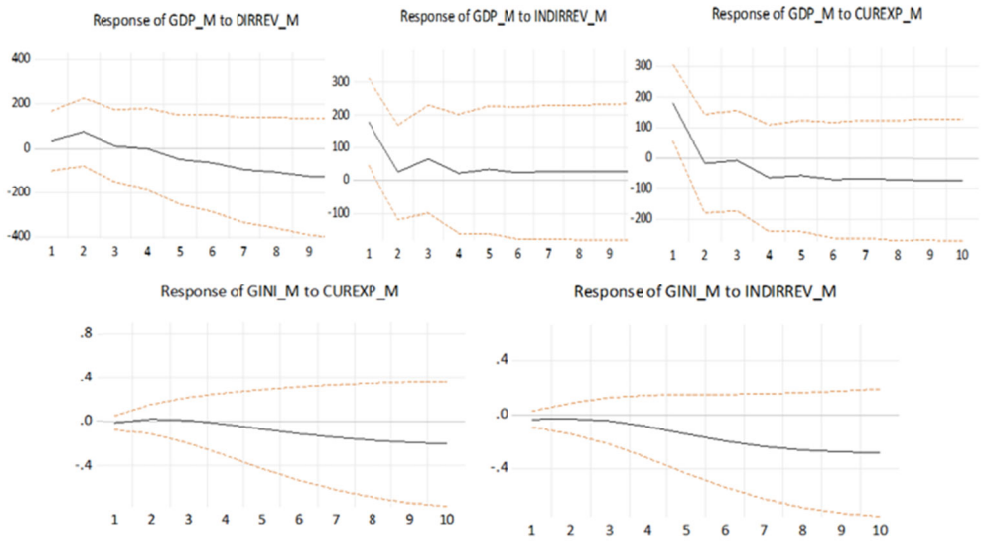
Table 4. Analysis of the hypothesis.

Hypothesis	Georgia	Moldova	Ireland	Latvia	Lithuania	Estonia
H1. Direct taxes have a significant impact on the GDP	Yes *	Yes *		Yes *	Yes	
H2. Indirect taxes have a significant impact on the GDP	Yes	Yes		Yes		Yes
H3. Current spending has a significant impact on GDP		Yes *				
H4. Capital spending has a significant impact on GDP	Yes *			Yes	Yes *	
H5. Direct taxes have a significant effect on income equality					Yes *	
H6. Indirect taxes have a significant effect on income equality		Yes	Yes *	Yes	Yes	Yes
H7. Current spending has a significant effect on income equality		Yes *			Yes	Yes
H8. Capital spending has a significant effect on income equality	Yes *		Yes *	Yes *		Yes *

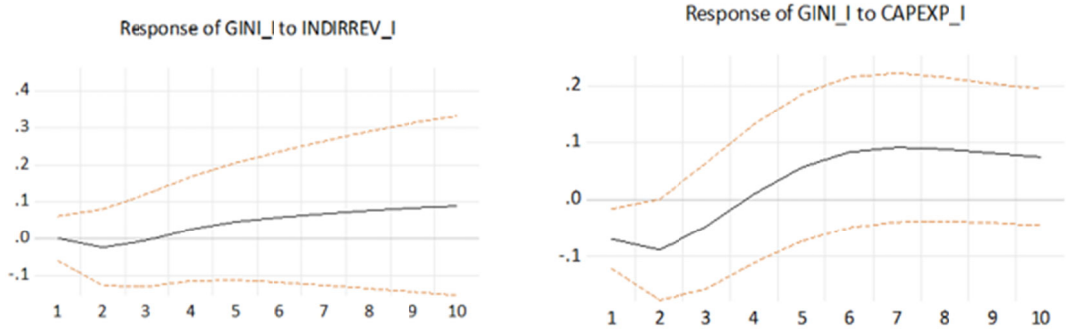
**means that the impact lasts for several years.*



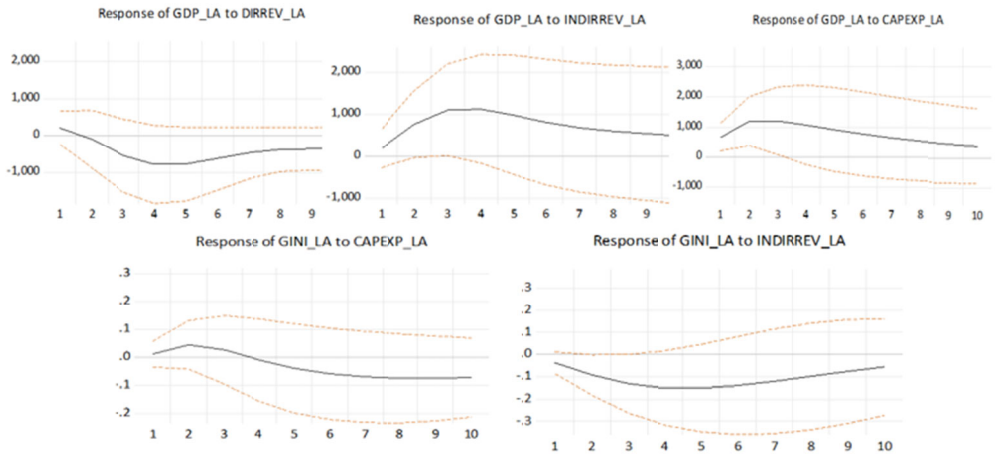
a) Impulse-response for Georgia.



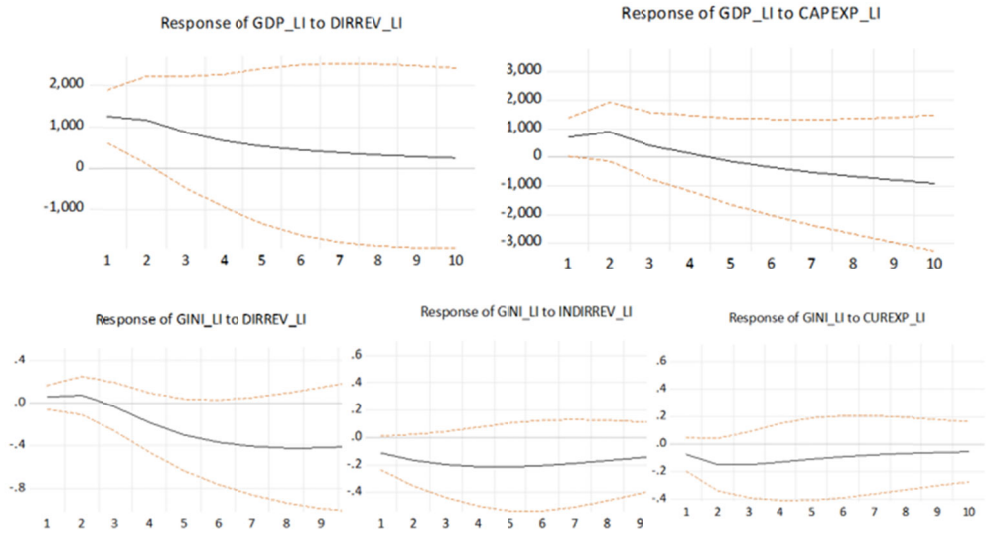
b) Impulse-response for Moldova.



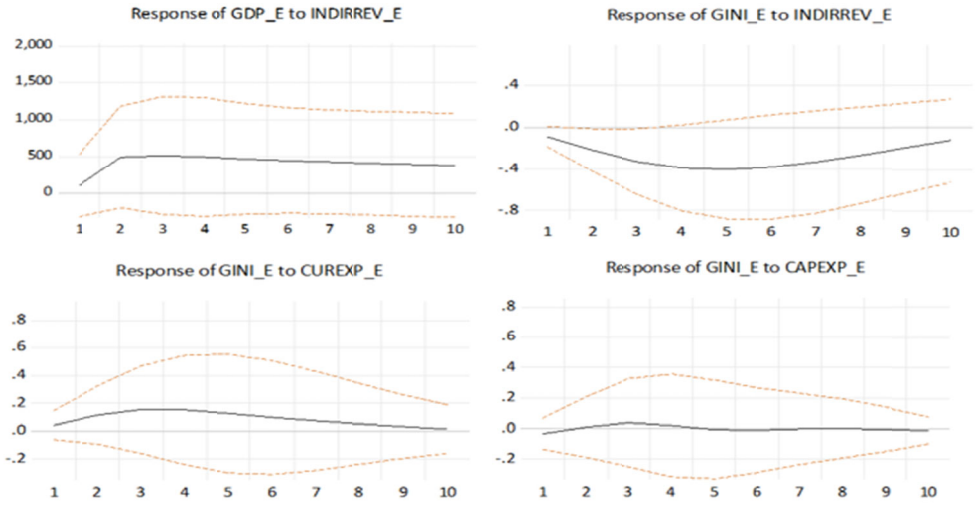
c) Impulse-response for Ireland.



d) Impulse-response for Latvia.



e) Impulse-response for Lithuania.



f) Impulse-response for Estonia.

Fig. 2. Impulse responses (a-f): the impact of fiscal policy on growth and inequality.
Source: based on International Monetary Fund (2024).

The impulse-response analysis for EU candidate Georgia shows that capital spending reduces GDP for the first 4 years and then increases while reducing the GINI index after 3 years. Current spending reduces GDP and increases GINI; direct taxes increase GDP in the first year but also increase GINI for seven years; and indirect revenue raises GDP by a constant amount but also increases GINI. Overall, the impact on inclusive growth is visible after three years, when capital spending increases.

For Moldova, the impulse response shows that capital spending reduces GDP and increases the GINI index; current expenditure increases GDP in the first year and then decreases, while it decreases GINI after 4 years, while direct taxes increase GDP during the first 4 years but also increase GINI, and indirect revenue increases GDP and decreases GINI. Conversely, indirect tax revenue positively affects GDP and contributes to the reduction in the GINI index. Thus, increased indirect tax revenue primarily drives inclusive growth.

The impulse-response analysis for Ireland, an EU member state, indicates that capital spending initially leads to a decline in GDP while simultaneously lowering the GINI index during the first 4 years. On the other hand, current spending reduces GDP and raises GINI, while direct taxes decrease GDP and increase GINI, and indirect taxes decrease GDP and GINI only for 3 years. Overall, the instruments could have helped with inclusive growth.

The impulse-response analysis for EU member Latvia shows that capital spending raises GDP and reduces the GINI index after 3 years; current spending reduces GDP and raises GINI; direct taxes increase GDP in the first year but also increase GINI, and indirect revenue raises GDP and decreases GINI. Therefore, the effect on inclusive growth is visible when the indirect tax revenue and capital spending increase after 3 years. Therefore impact on inclusive growth in Latvia is observable when indirect tax revenue and capital spending increase, with a notable effect after 3 years.

The impulse-response analysis for Lithuania indicates that capital spending boosts GDP over the first 4years but also raises the GINI index, suggesting an increase in inequality. However, current spending reduces both GDP and the GINI index, indicating a decrease in inequality and a lower GDP. Direct taxes increase GDP and decrease GINI after 2 years, while indirect taxes decrease GINI. This shows that the impact on inclusive growth is visible after 2 years of increasing the direct tax revenue.

During the analysis of EU members, Estonia's impulse response shows that capital spending decreases GDP and decreases the GINI index only in the first year. In contrast, current spending reduces GDP and reduces GINI. Conversely, direct taxes decrease GDP while raising the GINI index, indicating a potential increase in inequality. On the other hand, indirect tax revenue positively influences GDP and reduces the GINI index. Thus, inclusive growth is supported by higher indirect tax revenue.

The findings suggest that higher indirect tax revenues foster inclusive growth in Moldova, Latvia, and Estonia, whereas, in Lithuania, this goal is achieved through increased direct tax revenues. In Georgia and Latvia, inclusive growth is driven by capital spending but only after a three-year delay. But, for Ireland, the fiscal policy instruments are unaffected by inclusive economic growth (Irish Fiscal Advisory Council, 2022). The idea behind this might be the stage of development for Ireland, as it already has a higher GDP and lower inequality.

Consequently, Ireland's fiscal policies may focus more on innovation and economic stimulation than inclusivity. Furthermore, Ireland faces unique challenges, such as the economic implications of Brexit, which heightens economic uncertainty and slows growth. Although government spending increased in response to Brexit's impact, it was directed more toward fiscal stability than income equality or inclusive growth. Current spending does not positively affect inclusive growth, which makes sense as current spending is usually directed toward the targeted population regarding social benefits and assistance, which causes equal income distribution rather than higher economic growth.

Findings also demonstrate that direct and indirect taxes have a more positive impact on economic growth. However, indirect taxes play a more positive role in income equality, which is consistent with our intuition. Current spending also positively impacts income equality but fails to support economic growth. In contrast, capital spending affects both but only during the 10-year period.

5. Conclusions.

The findings of the analysis of fiscal policies in countries at different levels of development led to the conclusion that current government spending reduces inequality but does not promote growth, creates distortions, and crowds out private investment. Simultaneously, public investment can stimulate inclusive growth, increase GDP, and reduce inequality. Capital spending includes infrastructure and investment in education and healthcare, which creates human capital.

Before conducting this analysis, it was anticipated that indirect taxes would stimulate economic growth but worsen income inequality. The findings also showed no strict distinction between the results of the selected EU members and candidate countries, considering that no impact on inclusive growth was observed in the case of Ireland, which has the highest real GDP among the selected countries. This highlights that in addition to GDP, a country's level of development also play a crucial role in the impact of fiscal policy on the economy.

This analysis shows that each country should evaluate its fiscal policy instruments and their impact on growth for a more in-depth analysis. In developing countries, direct taxes and capital expenditures may be more effective in achieving high growth and reducing income inequality.

On the other hand, developed countries can achieve similar goals using a combination of tax and expenditure policies. The results of this study offer implications for the formulation of policies in both the EU and candidate countries that promote economic growth and inclusion, with a focus on supporting low-income populations.

Additionally, the findings provide valuable perspectives for researchers studying the impact of fiscal policies on economic growth and income inequality in different countries. The findings of this study suggest that while higher GDP per capita may influence policy choices, fiscal instruments remain relevant tools for fostering inclusive growth regardless of a country’s development level.

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