

DEVELOPMENTAL IMPACT OF TAXATION ON THE ECONOMIC PERFORMANCE OF SELECTED DEVELOPED ECONOMIES AROUND THE WORLD.

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Abstract: Taxation, the primary component of fiscal policy, definitely influences economic production because, in industrialized nations, the government uses the money from taxpayers to build fundamental infrastructure like reliable electricity, well-maintained roads, and water supplies. Therefore, the aim of this study is to investigate the developmental effect of taxes on the economic performance of developed economies around the world. Panel VAR application revealed a short-term correlation between taxation and the economic performance of industrialized countries. While the fitted FMOLS reveals a significant positive impact of taxation and foreign direct investment (FDI) on the long-term economic performance of developed nations, suggesting that higher levels of taxation and FDI return contribute to greater economic performance in the world's developed economies, the Hausman test specifies a random-effect regression model that confirms the significant positive impact of taxation and GNI on economic performance. As a result, the governments of industrialized nations should keep putting in place a sustainable tax system that is alluring enough to raise tax payments and promote the continuation of FDI and GNI growth, which would improve economic performance both now and in the future.

Keywords: Taxation, Economic performance, Panel VAR, Hausman test, FMOLS.

Introduction

Taxation implementation has had a significant impact on the economic growth of industrialized nations such as the United States, Canada, and Australia. Academic researchers are inclined to conduct studies that focus on the determinants driving economic advancement. Taxation is a highly scrutinized element due to its significant impact on a nation's economic policies (Shahmoradi et al., 2019). There are typically two main classifications of taxation that are commonly acknowledged: direct and indirect. Direct taxation refers to the imposition of taxation on the income and activities of taxpayers, which are then paid directly to the government. Transferring the direct tax

burden to another individual is not feasible. Indirect taxation refers to the imposition of tax obligations on products and services that can be transferred to a third-party. According to a prior study conducted by Thaçi and Gerxhaliu (2018), in developing countries, the revenue generated by taxes on foreign commerce surpasses that generated by direct taxation. Developing countries encounter greater challenges in establishing their tax systems and allocating domestic resources than wealthy nations. In contrast, industrialized nations generate a greater amount of money through direct taxation mechanisms such as income taxation, social insurance contributions and consumer taxation.

The existing body of literature has presented conflicting findings regarding the impact of taxation on economic growth. Domestic taxation, such as tariffs on goods and services, has contributed to the increase in GDP growth for both affluent and developing countries (Maganya, 2020; Mdanat et al., 2018; Vintilă et al., 2021). Contrary to popular belief, Thaçi and Gerxhaliu (2018) assert that a negative association exists between taxation and economic growth in developing nations. Moreover, it has been observed that there exists a positive and statistically significant relationship between income tax rates and GDP in developed countries, although this relationship is not observed in developing countries (Shahmoradi et al., 2019). Further investigation is required to comprehensively comprehend the influence of taxation on economic development in developed countries, considering the conflicting findings.

According to Korkmaz et al. (2019) and Nguyen (2019), empirical studies conducted in developing countries have provided evidence supporting the positive impact of indirect taxation on economic growth. Tariffs and domestic goods and services taxes are two additional tax forms that have a direct impact on a nation's economic growth (Maganya, 2020; Mdanat et al., 2018).

The empirical analysis conducted by Göndör and İzpençe (2014) examined the fiscal policies of Romania and Turkey throughout the crisis period. The authors presented empirical evidence to substantiate their assertion, illustrating the ineffectiveness of procyclical fiscal policy in mitigating GDP shocks. Given the study's emphasis on the cyclical patterns of macroeconomic aggregates, it is important to approach the conclusions with caution. Consequently, the outcome only presents notions on the underlying factors driving fiscal policy acts and their impact on macroeconomic activity. Korkmaz et al. (2019) arrived at comparable findings in their examination of the Turkish economy, indicating a significant and adverse correlation between taxation and economic growth.

Several studies conducted by Abdioglu et al. (2016), Ajetunmobi et al. (2019), Mohs et al. (2018), and Shafiq et al. (2021) have provided evidence that foreign direct investment (FDI) in developed nations is influenced by the taxation policies of the host country. These findings suggest that taxation plays a significant role in shaping investment patterns. Ahmad and Sial (2016) conducted a study utilizing annual time series data spanning 1974-2010 to examine the relationship between total tax receipts and economic growth. The autoregressive distributed lag (ARDL) bounds testing approach was employed to predict the long- and short-term relationships between the variables to assess co-integration. The results indicate that aggregate tax revenues have a lasting, adverse, and substantial influence on the expansion of the economy. Research indicates that a 1% increase in taxation will lead to a 1.25% decline in economic growth. In their study on developing nations, Thaçi and Gerxhaliu (2018) provided empirical evidence supporting the existence of a negative association between taxation and economic growth.

Shahmoradi et al. (2019) observed a significant and negative correlation between the ratio of tax collections to GDP and industrialized nations. Research has shown that direct taxation has a favorable impact on economic growth, but the consequences of indirect taxation remain uncertain (Hakim, 2020; Korkmaz et al., 2019). Research conducted in developing countries suggests that the implementation of indirect taxation has a favorable impact

on overall economic growth. According to Nguyen (2019), direct taxation has an indirect effect. Integrating both direct and indirect taxes into a unified study would provide further evidence to validate or disprove the previous research's conclusion of inconsistency.

Two more indicators of economic development are employment and investment. The existing body of literature on investments has presented divergent findings on the influence of taxation on investment outcomes. Several studies (Abdioglu et al., 2016; Ajetunmobi et al., 2019; Mohs et al., 2018; Shafiq et al., 2021) have found that taxation has an impact on investment in both developed and developing countries. In contrast, alternative research conducted by Goodspeed et al. (2011) and Mercer-Blackman & Camingue-Romance (2020) yielded conflicting results when examining different country cohorts. Furthermore, various types of taxation can potentially have distinct impacts on investment outcomes (Appiah-Kubi et al., 2021).

In addition, endogenous growth theory and neoclassical growth theory serve as the foundation for this investigation. According to Solow and Swan's neoclassical growth theory, taxes have no impact on the steady state. That is to say, taxes have no long-term impact on economic growth. Romer's endogenous growth theory, on the other hand, contends that taxes on economic growth can impact it over time (Romer et al., 2010).

By examining the developmental impact of taxation on the economic performance of a few global economies, such as Canada, the United States, and Australia, and accounting for inflation, foreign direct investment (FDI), and gross national income (GNI) using the most recent annual data from 1999 to 2023, this study will make a unique contribution to closing the gap left by earlier research.

Materials and Methods

This study used secondary data, specifically a panel of recent periods from 1990 to 2023, from three developed countries: Canada, the United States, and Australia. These countries were selected on the basis of their economic performance and consistent data availability among the world's developed economies. The econometrics approach, suitable for the panel, included Panel Var, the Hausman test to specify either a fixed effect or a random effect estimator, and FMOLS. We also performed diagnostic checks, such as the normality of the residuals and the endogeneity test, to assess the accuracy and validity of the econometrics model.

Panel VAR

The proposed panel VAR model helps to examine the short-run connection between the variables of interest and it is given by

$$Y_{it} = \mu_i + B(M)Y_{it} + \alpha_i + \delta_t + \varepsilon_{it} \quad (1)$$

Where Y_{it} represents the vector of the endogenous stationary series, such as gross domestic product (GDP), Taxation (Tax), Inflation (Inf), Foreign direct investment (FDI), and gross national income (GNI) while μ_i represents the matrix of country-specific fixed effects. The subscripts, defined as i and t , refer to country and time, respectively. $B(M)$ denotes the matrix polynomial in the lag operator with $B(M) = B^1M_1 + B^2M_2 + \dots + M_pL^p$, α_i indicates the vector that determines the specific effects of the country found in this regression, δ_t represents the dummy variables for the country's specific time and ε_{it} denotes the residual vector.

The matrix form of the proposed VAR in equation 1 treated as endogenous can be expressed as follows:

$$\begin{aligned} \Delta(\ln GDP_{it}) &= \mu_{1i} + \sum_{j=1}^p \alpha_{1j} \Delta(\ln GDP_{it-j}) + \sum_{j=1}^p b_{1j} \Delta(Tax_{it-j}) + \sum_{j=1}^p c_{1j} \Delta(Inf_{it-j}) \\ &+ \sum_{j=1}^p d_{1j} \Delta(FDI_{it-j}) + \sum_{j=1}^p e_{1j} \Delta(GNI_{it-j}) + \alpha_{1i} + \delta_{1t} \\ &+ \varepsilon_{1it} \end{aligned} \quad (2)$$

$$\begin{aligned} \Delta(Taxation_{it}) &= \mu_{2i} + \sum_{j=1}^p \alpha_{2j} \Delta(\ln GDP_{it-j}) + \sum_{j=1}^p b_{2j} \Delta(Tax_{it-j}) + \sum_{j=1}^p c_{2j} \Delta(Inf_{it-j}) \\ &+ \sum_{j=1}^p d_{2j} \Delta(FDI_{it-j}) + \sum_{j=1}^p e_{2j} \Delta(GNI_{it-j}) + \alpha_{2i} + \delta_{2t} \\ &+ \varepsilon_{2it} \end{aligned} \quad (3)$$

$$\begin{aligned} \Delta(Inf_{it}) &= \mu_{3i} + \sum_{j=1}^p \alpha_{3j} \Delta(\ln GDP_{it-j}) + \sum_{j=1}^p b_{3j} \Delta(Tax_{it-j}) + \sum_{j=1}^p c_{3j} \Delta(Inf_{it-j}) \\ &+ \sum_{j=1}^p d_{3j} \Delta(FDI_{it-j}) + \sum_{j=1}^p e_{3j} \Delta(GNI_{it-j}) + \alpha_{3i} + \delta_{3t} \\ &+ \varepsilon_{3it} \end{aligned} \quad (4)$$

$$\begin{aligned} \Delta(FDI_{it}) &= \mu_{4i} + \sum_{j=1}^p \alpha_{4j} \Delta(\ln GDP_{it-j}) + \sum_{j=1}^p b_{4j} \Delta(Tax_{it-j}) + \sum_{j=1}^p c_{4j} \Delta(Inf_{it-j}) \\ &+ \sum_{j=1}^p d_{4j} \Delta(FDI_{it-j}) + \sum_{j=1}^p e_{4j} \Delta(GNI_{it-j}) + \alpha_{4i} + \delta_{4t} \\ &+ \varepsilon_{4it} \end{aligned} \quad (5)$$

$$\begin{aligned} \Delta(GNI_{it}) &= \mu_{5i} + \sum_{j=1}^p \alpha_{5j} \Delta(\ln GDP_{it-j}) + \sum_{j=1}^p b_{5j} \Delta(Tax_{it-j}) + \sum_{j=1}^p c_{5j} \Delta(Inf_{it-j}) \\ &+ \sum_{j=1}^p d_{5j} \Delta(FDI_{it-j}) + \sum_{j=1}^p e_{5j} \Delta(GNI_{it-j}) + \alpha_{5i} + \delta_{5t} \\ &+ \varepsilon_{5it} \end{aligned} \quad (6)$$

Hausman Test

The Hausman test, also known as the Hausman specification test, identifies endogenous regressors within a regression model. We identify these regressors as predictor factors that correlate with the error term. Other factors in the system to which endogenous variables belong have an impact. Ordinary least-squares estimators assume uncorrelated error terms and predictor variables, which restricts their usefulness in models with endogenous regressors. In this case, instrumental variable estimators are a useful choice. Finding the endogeneity of the predicting variables is essential before selecting the optimal regression strategy. Using the Hausman test, one can determine whether an estimator is more suitable for a given regression model by assessing the statistical significance of the difference between the two estimators (Zulfikar and STp, 2018). This diagnostic technique is often used to identify possible issues in model definition. Panel data analysis uses the Hausman test to determine which fixed effects (FE) and random effects (RE) models to use. As to Adebajo and Morufu (2022), the alternative hypothesis holds that the preferred model includes fixed effects, whereas the null hypothesis holds that random effects exist. The main goal of the tests was to determine the relationship between the specific errors

noted and the predictors in the model. The premise that there is no association between the error term and the predictor variables implies that endogeneity has no effect on the model.

The Hausman statistic can be computed as follows:

$$H = (\hat{\beta}^{RE} - \hat{\beta}^{FE})' [Var(\hat{\beta}^{RE}) - Var(\hat{\beta}^{FE})]^{-1} (\hat{\beta}^{RE} - \hat{\beta}^{FE}) \quad (7)$$

The hypothesis is therefore stated as follows:

H₀: Select RE (p > 0.05)

H₁: Select FE (p < 0.05)

The generalized model in panel data analysis considers individual intercepts to evaluate the connection between variables. This formula clarifies the intricate relationships between factors both inside and between businesses, thus facilitating a more thorough comprehension of the factors affecting economic performance. There are several ways to express the equation:

$$y_{it} = \alpha_i + \beta' X_{it} + \varepsilon_{it}; \quad i = 1, 2, \dots, N \text{ and } t = 1, 2, \dots, T. \quad (8)$$

Where N = number of individuals or cross-section and T = the number of periods.

According to Shahmoradi et al. (2019), the panel model can take the following form:

$$\ln GDP_{it} = \alpha + \beta_1(Tax)_{it} + \beta_2(Inf)_{it} + \beta_3(FDI)_{it} + \beta_4(GNI)_{it} + \varepsilon_{it} \quad (9)$$

The dependent variable in this study is the economic performance of the three selected developed economies of the world, which is measured by their gross domestic product (GDP). We used the natural logarithm of the dependent variable to improve the performance of the model. The main independent variable is taxation, which is measured by tax revenue, whereas the control variables include inflation, foreign direct investment, and gross national income, which could also influence the developmental impact of taxation on economic performance. The coefficient estimates of the independent variables are β_1 to β_4 . The random error term, denoted as ε_{it} , the with unit represents the panel unit, which represents the selected developed economies of the world, and the time in years, denoted as t.

FMOLS Estimator

Developed by Phillips and Hansen to provide an optimal co-integrating regression estimation, the fully modified least square (FMOLS) (Olofin et al., 2019). In contrast, this study used the Pedroni heterogeneous FMOLS estimator for panel co-integration regression. This estimator can eliminate serial correlation and endogeneity bias. FMOLS works well with the panel because it helps determine whether the long-term effects of the predictor variables are positive or negative on the dependent variable and takes into account heterogeneous cointegration (Rahman et al., 2021). Thus, we can express the panel FMOLS estimator (β) of the coefficient as follows:

$$\beta^* - \beta = \left(\sum_{i=1}^N L_{22i}^{-2} \sum_{t=1}^T (\chi_{it} - \bar{\chi}_{it})^2 \right) \sum_{i=1}^N L_{11i}^{-1} L_{22i}^{-2} \left(\sum_{t=1}^T (\chi_{it} - \bar{\chi}_{it}) \mu_{it}^* - T \hat{\gamma}_i \right) \quad (10)$$

Where;

$$\mu_{it}^* = \mu_{it} - \frac{\hat{L}_{21i}}{\hat{L}_{22i}} \Delta \chi_{it}, \hat{\gamma}_i = \hat{\Gamma}_{21i} \hat{\Omega}_{21i}^0 - \frac{\hat{L}_{21i}}{\hat{L}_{22i}} (\hat{\Gamma}_{22i} + \hat{\Omega}_{22i}^0)$$

And \hat{L}_i was the lower triangulation of $\hat{\Omega}_i$.

The asymptotic distribution of the dynamic OLS estimator was the same as that of Pedroni’s panel FMOLS estimate (Pradhan, 2016). As demonstrated, FMOLS estimations were carried out to verify the consistency of the results. The endogenous growth theory of Romer indicates that taxes may have a long-term impact on economic growth (Romer et al., 2010). Thus, the following can be the supporting hypothesis for the endogenous growth theory:

H1: Taxation has a positive long-run effect on the economic performance of selected developed economies around the world.

Table 1: Variable definitions, measurements, and sources

| Variables | Definition | Measurement | Sources |
|-----------|--|------------------|--|
| GDP | GDP is a metric used to determine how much money is spent overall on all goods and services produced over a given time within a nation. GDP stands for the general economic performance of a nation. | Billions of US\$ | World Bank, Statista, Countryeconomy.com |
| Taxation | Taxation is a crucial component of fiscal policy as it functions as a mechanism for governments to produce income and foster economic performance (Korkmaz et al., 2019). | % of GDP | World Bank, www.ceicdata.com |
| Inflation | Inflation is a phenomenon that refers to the rise in the general level of prices of commodities and services because of the large amount of money in circulation. When gasoline and oil prices rise, inflationary pressures typically follow. | Percentage (%) | World Bank |
| FDI | A foreign direct investment (FDI) is the acquisition of ownership in a foreign company or project by an investor, company, or government organization coming from a different country. By creating long-lasting, safe links between economies, foreign direct investment | Billions of US\$ | World Bank |

| | | | |
|-----|--|------------------|------------|
| | (FDI) is essential to promote global economic integration. | | |
| GNI | Gross National Income (GNI) refers to the aggregate monetary earnings generated by individuals and enterprises within a given nation. It is employed to quantify and monitor a country's economic prosperity over successive years. The calculation of GNI involves adding the income from foreign sources to GDP. | Billions of US\$ | World Bank |

Source: Author's computation

Results

Table 2: Descriptive Statistics

| | GDP | TAXATION | INFLATION | FDI | GNI |
|--------------|----------|----------|-----------|-----------|----------|
| Mean | 5423.659 | 15.55996 | 2.535802 | 100.1701 | 5415.688 |
| Median | 1554.749 | 13.25800 | 2.269150 | 48.57084 | 1520.700 |
| Maximum | 27356.40 | 29.20000 | 8.002800 | 511.4340 | 27560.00 |
| Minimum | 311.4205 | 7.903518 | -0.355500 | -25.09314 | 295.9904 |
| Std. Dev. | 7007.169 | 5.352293 | 1.481598 | 127.2057 | 7090.685 |
| Observations | 102 | 102 | 102 | 102 | 102 |

Source: Author's computation

Table 2 shows that the average GDP of the three selected developed economies of the world is approximately US\$5424 billion with a variability of approximately US\$7007 billion during the period under review; the average taxation is approximately 15.6% of GDP with a variability of approximately 5.4% of GDP; the average inflation rate is approximately 2.5% with a variability of approximately 1.5%; the average FDI is approximately US\$100 billion with a variability of approximately 127 billion US dollars; and the average GNI is approximately US\$5416 billion with a variability of approximately 7091 billion US dollars.

Table 3: Panel VAR

| | Coefficient | Std. Error | t-Statistic | Prob. |
|--|-------------|------------|-------------|-------|
|--|-------------|------------|-------------|-------|

| | | | | | |
|-------|--------|-----------|----------|-----------|--------|
| InGDP | C (1) | 1.007985 | 0.010684 | 94.34943 | 0.0000 |
| | C (2) | 0.004157 | 0.002798 | 1.485704 | 0.1380 |
| | C (3) | 0.011811 | 0.007066 | 1.671616 | 0.0953 |
| | C (6) | -0.101077 | 0.115450 | -0.875509 | 0.3817 |
| Tax | C (7) | -0.050260 | 0.209249 | -0.240191 | 0.8103 |
| | C (8) | 1.029766 | 0.027297 | 37.72425 | 0.0000 |
| | C (11) | 4.40E-05 | 3.72E-05 | 1.182653 | 0.2375 |
| | C (12) | -0.200369 | 1.698740 | -0.117952 | 0.9062 |
| Inf | C (13) | 0.055339 | 0.166248 | 0.332870 | 0.7394 |
| | C (15) | 0.356041 | 0.087329 | 4.077020 | 0.0001 |
| | C (16) | 0.000222 | 0.001841 | 0.120591 | 0.9041 |
| | C (18) | 1.101120 | 1.166850 | 0.943669 | 0.3458 |
| FDI | C (19) | 3.855047 | 10.34953 | 0.372485 | 0.7097 |
| | C (22) | 0.289386 | 0.099692 | 2.902806 | 0.0039 |
| | C (23) | 0.011455 | 0.002551 | 4.489842 | 0.0000 |
| | C (24) | -15.62439 | 69.77611 | -0.223922 | 0.8229 |
| GNI | C (25) | -34.78782 | 50.49331 | -0.688959 | 0.4912 |
| | C (28) | -1.360146 | 0.486376 | -2.796488 | 0.0054 |
| | C (29) | 1.077280 | 0.012448 | 86.54449 | 0.0000 |
| | C (30) | 239.5507 | 340.4239 | 0.703684 | 0.4820 |

Source: Author’s computation

Table 3 shows that the first lag of lnGDP is statistically significant at the 1% level, the second lag of taxation is statistically significant at the 1% level, the second lag of inflation is statistically significant at the 1% level, the second and third lags of FDI are statistically significant at the 1% level, and the second and third lags of GNI are statistically significant at the 1% level, implying that at least one of the series is statistically significant. This suggests a short-run relationship between the series consisting of GDP (which is a proxy for economic performance), taxation, inflation, FDI, and GNI.

Table 4: Correlated Random Effects: Hausman Test

| Test Summary | Chi-Sq. Statistic | Chi-Sq (d. f) | Prob. |
|----------------------|-------------------|---------------|--------|
| Cross-section random | 0.4386 | 4 | 0.7140 |

Cross-sectional random effect test comparisons:

| Variable | Fixed (A) | Random (B) | Diff(A-B) | Prob. |
|----------|-----------|------------|-----------|--------|
| TAXATION | 0.01787 | 0.08905 | -0.07118 | 0.6148 |

| | | | | |
|-----------|----------|----------|----------|--------|
| INFLATION | -0.00713 | -0.01217 | 0.00504 | 0.5311 |
| FDI | 0.00159 | 0.00119 | 0.00040 | 0.3359 |
| GNI | 0.00006 | 0.00013 | -0.00124 | 0.0661 |

Source: Author’s computation

Table 4 shows that the Hausman test result ($P = 0.7140$) indicates that the random-effect estimator is suitable for the analysis of panel data. Meanwhile, none of the independent variables are statistically significant for the random effect comparison to identify the ones with endogeneity issues, indicating that none of the explanatory variables suffer from the endogeneity problem. This suggests that the specified random-effects model by the Hausman test does not have the problem of endogeneity.

Table 5: Random-effects regression

| lnGDP | Coefficient | Std. Error | t-Statistic | Prob. |
|--------------------|-------------|------------|-------------|-------|
| C | 7.76129 | 0.222045 | 34.95 | 0.000 |
| TAXATION | 0.08905 | 0.012011 | 4.90 | 0.000 |
| INFLATION | -0.01217 | 0.036164 | -0.34 | 0.736 |
| FDI | 0.00119 | 0.000929 | 1.29 | 0.198 |
| GNI | 0.00013 | .000018 | 7.31 | 0.000 |
| R-squared | 0.898 | | | |
| Adj. R-Squared | 0.891 | | | |
| F-statistic | 138.84 | | | |
| Prob (F-statistic) | 0.000 | | | |

Source: Author’s computation

Table 5 indicates the overall $P = 0.000$ for the random-effects model, indicating a significant relationship between taxation and economic performance while controlling for inflation, FDI, and GNI. According to the model results, the coefficient estimates of taxation and GNI are statistically significant at the 1% level and have a significant positive effect on economic performance. This means that a high level of taxation and GNI will lead to better economic performance in the world’s developed economies. This supports the work of Korkmaz et al. (2019) and Nguyen (2019), who found that taxation has a positive effect on economic growth. The R-squared of 0.898 suggests that taxation, inflation, FDI, and GNI account for 89.8% of the variation in economic performance.

Table 6: Panel Fully Modified Least Squares (FMOLS)

| lnGDP | Coefficient | Std. Error | t-Statistic | Prob. | VIF |
|-----------|-------------|------------|-------------|--------|----------|
| TAXATION | 0.042948 | 0.060307 | 0.712160 | 0.0482 | 1.170193 |
| INFLATION | -0.000601 | 0.062403 | -0.009631 | 0.9923 | 1.109935 |

| | | | | | |
|--------------------|----------|----------|----------|--------|----------|
| FDI | 0.002731 | 0.001451 | 1.882798 | 0.0329 | 2.228070 |
| GNI | 3.17E-05 | 3.52E-05 | 0.901841 | 0.3695 | 2.142718 |
| <hr/> | | | | | |
| R-squared | 0.896082 | | | | |
| Adjusted R-squared | 0.889305 | | | | |
| S.E. of regression | 0.454215 | | | | |
| Long-run variance | 0.585706 | | | | |
| <hr/> | | | | | |

Source: Author’s computation

Table 6 shows that the coefficient estimate of taxation and FDI has a long-term significant positive effect on developed nations’ economic performance at the 5% level. This means that, in the long run, a high level of taxation and FDI will help developed nations do better economically. This supports the research hypothesis and endogenous growth theory, but it contradicts the work of Shahmoradi et al. (2019), which states that taxation has a significant negative effect on the economic performance of developed nations in the long run.

Figure 1 shows the graph of GDP for the three selected developed economies of the world, and we can see that the United States demonstrated the highest GDP level among the developed nations under review. The figure 2 shows the graph of taxation for the three selected developed nations under review. Australia demonstrated the highest taxation proxy by tax revenue among the three developed economies of the world and figure 3 shows the normality test for the residual of the fitted FMOLS using the Jarque-Bera test. The result shows that $P > 0.05$, suggesting that the model’s residual is normally distributed.

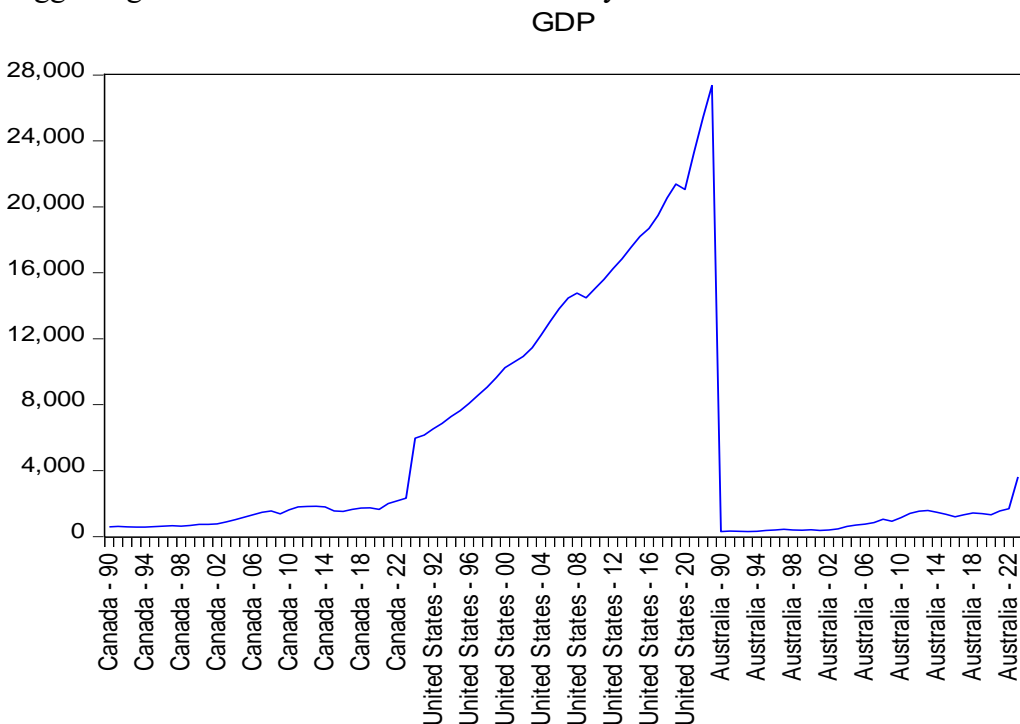


Figure 1: GDP of selected developed economies during the period under review

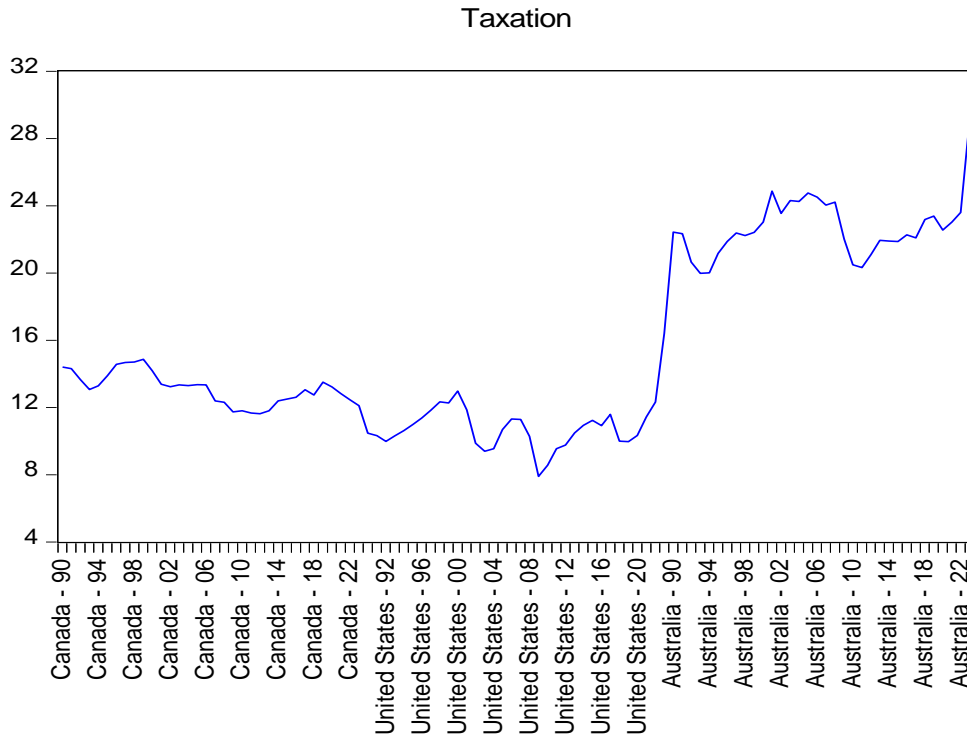


Figure 2: Taxation of selected developed economies during the period under review

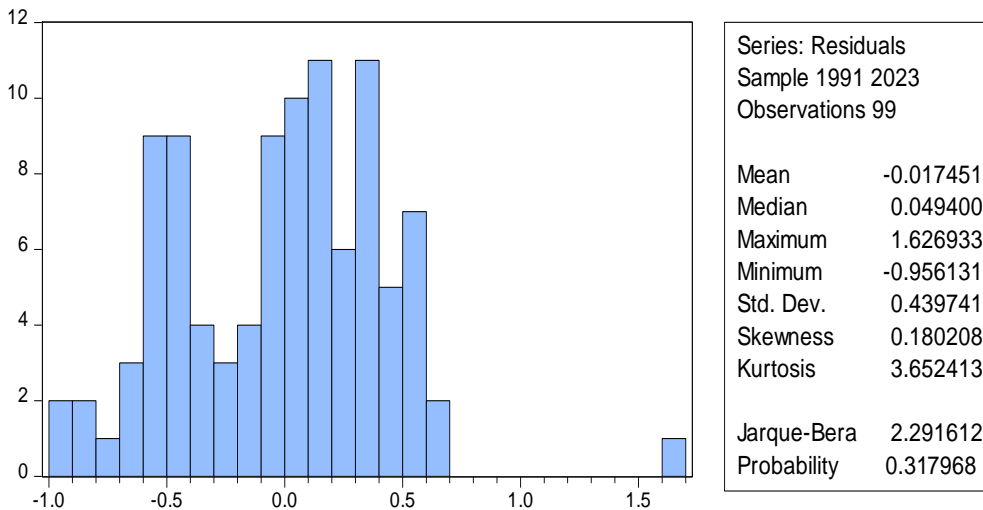


Figure 3: Normality test for the residuals of FMOLS

Conclusion

Taxation, a fundamental component of fiscal policy, undeniably exerts an influence on economic production due to the allocation of taxpayer funds, particularly in industrialized nations, toward the provision of essential infrastructure such as reliable electricity, well-maintained roads and sufficient water supply, among other necessities. Hence, the objective of this research is to examine the extent to which taxes influence the economic performance of developed economies globally. The analysis reveals a correlation between taxation and the economic success of developed nations in the near term. The analysis’s findings suggest that taxation and foreign

direct investment (FDI) have a statistically significant positive relationship with developed nations' long-term economic performance. This implies that higher levels of taxation and increased returns on foreign direct investment contribute to enhanced economic performance in developed economies worldwide. Therefore, governments in developed economies should persist in implementing a sustainable tax policy that is sufficiently appealing to augment tax revenue and foster the sustained expansion of foreign direct investment (FDI) and gross national income (GNI). This, in turn, would improve economic performance in both the short and long term.

References

- Abdioglu, N., Binis, M., & Arslan, M. (2016). The effect of corporate tax rate on foreign direct investment: A panel study for OECD countries. *EGE Academic Review*, 16(4), 599–630.
- Adebajo, S. A., & Morufu, A. O. (2022). Transparency and global initiatives in the face of natural resource depletion in Sub-Saharan Africa. *Journal of Environmental Science and Economics*, 1(2), 13–24.
- Ahmad, S., & Sial, M. (2016). Taxes and economic growth: An empirical analysis of Pakistan. *European Law Review*, 8(6), 01. <https://doi.org/10.21859/eulawrev-08062>
- Ajetunmobi, O., Uwuigbe, U., Uwuigbe, O. R., Lanre, N., & Omoyiola, A. (2019). Taxation, exchange rate and foreign direct investment in Nigeria. *Banks and Bank Systems*, 14(3), 76–85. [https://doi.org/10.21511/bbs.14\(3\)](https://doi.org/10.21511/bbs.14(3))
- Appiah-Kubi, S. N. K., Malec, K., Phiri, J., Maitah, M., Gebeltová, Z., Smutka, L., Blazek, V., Maitah, K., & Sirohi, J. (2021). Impact of tax incentives on foreign direct investment: Evidence from Africa. *Sustainability*, 13(15), 8661. <https://doi.org/10.3390/su13158661>
- Göndör, M., & Özpençe, Ö. (2014). An empirical study on fiscal policy in crises time: Evidence from Romania and Turkey. *Procedia Economics and Finance*, 15, 975–984.
- Goodspeed, T., Martinez-Vazquez, J., & Zhang, L. (2011). Public policies and FDI location: Differences between developing and developed countries. *Public Finance Analysis*, 67(2), 171–191. <https://doi.org/10.2307/41303586>
- Hakim, T. A. (2020). Direct versus indirect taxes: Impact on economic growth and total tax revenue. *International Journal of Financial Research*, 11(2), 146–153.
- Korkmaz, S., Yilgor, M., & Aksoy, F. (2019). The impact of direct and indirect taxes on the growth of the Turkish economy. *Public Sector Economics*, 43(3), 311–323. <https://doi.org/10.3326/pse.43.3.5>
- Maganya, M. H. (2020). Tax revenue and economic growth in developing country: An autoregressive distribution lags approach. *Central European Economic Journal*, 7(54), 205–217. <https://doi.org/10.2478/ceej-2020-0018>

- Mercer-Blackman, V., & Camingue-Romance, S. (2020). The impact of United States tax policies on sectoral foreign direct investment to Asia. *Asian Development Bank (ADB), Economic Working Paper Series*, 628. <https://doi.org/10.22617/WPS200388-2>
- Mdanat, M. F., Shotar, M., Samawi, G., Mulot, J., Arabiyat, T. S., & Alzyadat, M. A. (2018). Tax structure and economic growth in Jordan, 1980–2015. *EuroMed Journal of Business*, 13(1), 102–127. <https://doi.org/10.1108/EMJB-11-2016-0030>
- Mohs, J. N., Wnek, R., & Galloway, A. (2018). The impact of taxes on foreign direct investments. *International Journal of Accounting and Taxation*, 6(2), 54–63. <https://doi.org/10.15640/ijat.v6n2a6>
- Nguyen, H. H. (2019). Impact of direct tax and indirect tax on economic growth in Vietnam. *Journal of Asian Finance, Economics and Business*, 6(4), 129–137. <https://doi.org/10.13106/jafeb.2019.vol6.no4.129>
- Olofin, O. P., Aiyegbusi, O. O., & Adebayo, A. A. (2019). Analysis of foreign direct investment and economic growth in Nigeria: Application of spatial econometrics and fully modified ordinary least square (FMOLS). *Foreign Trade Review*, 54(3), 159-176.
- Pradhan, K. C. (2016). Does remittance drive economic growth in emerging economies: Evidence from FMOLS and Panel VECM. *Theoretical & Applied Economics*, 23(4).
- Rahman, M. M., Hosan, S., Karmaker, S. C., Chapman, A. J., & Saha, B. B. (2021). The effect of remittance on energy consumption: Panel cointegration and dynamic causality analysis for South Asian countries. *Energy*, 220, 119684.
- Romer, C. D., & Romer, D. H. (2010). The macroeconomic effects of tax changes: Estimates based on a new measure of fiscal shocks. *American Economic Review*, 100, 763–801.
- Shahmoradi, M., Mohamadi Molqarani, A., & Moayri, F. (2019). Tax policy and economic growth in the developing and developed nations. *International Journal of Finance and Managerial Accounting*, 4(14), 15–25. <https://www.researchgate.net/publication/352787977>
- Shafiq, M. N., Hua, L., Bhatti, M. A., & Gillani, S. (2021). Impact of taxation on foreign direct investment: Empirical evidence from Pakistan. *Pakistan Journal of Humanities and Social Sciences*, 9(1), 10–18. <https://doi.org/10.52131/pjhss.2021.0901.0108>
- Thaçi, L., & Gerxhaliu, A. (2018). Tax structure and developing countries. *European Journal of Economics and Business Studies*, 4(1), 213–220. <https://doi.org/10.26417/ejes.v10i1.p220-227>
- Vintilă, G., Gherghina, Ș. C., & Chiricu, C. Ș. (2021). Does fiscal policy influence the economic growth? Evidence from OECD countries. *Economic Computation and Economic Cybernetics Studies and Research*, 55(2), 229–246. <https://doi.org/10.24818/18423264/55.2.21.14>

Zulfikar, R., & STp, M. M. (2018). Estimation model and selection method of panel data regression: An overview of common effect, fixed effect, and random effect model. JEMA: Journal Ilmiah Bidang Akuntansi, 1-10.