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The Effect of Budget Transparency and Democratization on Tax Revenues: Evidence from OECD Countries

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Article

Keywords: Budget Transparency, Democratization, Tax Revenues, Open Budget Index, OECD Countries, Panel Data

Posted Date: August 28th, 2026

DOI: https://doi.org/10.21203/rs.3.rs-10396192/v1

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Additional Declarations: No competing interests reported.

Abstract

Although governance quality is widely recognized as an important determinant of fiscal performance, limited evidence exists on how budget transparency and democratization jointly affect tax revenues. This study examines their direct effects on tax revenues across OECD countries within a unified empirical framework. The study uses panel data for 12 OECD countries covering the period 2008–2023. Budget transparency is measured by the Open Budget Index, while democratization is proxied by the Economist Intelligence Unit's Democracy Index. GDP per capita and foreign direct investment are included as control variables. Following panel diagnostic tests, the relationships are estimated using the Prais–Winsten Panel Corrected Standard Errors (PCSE) estimator.

Both budget transparency and democratization have positive and statistically significant effects on tax revenues. Democratization exerts the strongest influence, while budget transparency represents an important complementary institutional mechanism that strengthens tax capacity through greater public trust, lower information asymmetries, and improved voluntary tax compliance. The effects of the economic control variables are comparatively weaker. This study is among the first cross-country analyses to jointly examine the direct effects of budget transparency and democratization on tax revenues. By integrating governance-related institutional indicators into a single empirical framework, it extends the public budgeting literature beyond expenditure-oriented transparency research and provides new evidence on the institutional determinants of tax capacity.

1. Introduction

Tax revenues constitute the primary source of financing that enables governments to perform their fundamental functions and provide public goods and services. Over time, the transformation of the role of the state and the expansion of public responsibilities have substantially increased the demand for public revenues, particularly tax revenues. Consequently, governments have increasingly sought policy instruments capable of enhancing tax revenues to ensure the sustainable financing of public services (Addison & Levin, 2012; Kutbay, 2019). However, achieving adequate and equitable tax revenues cannot be explained solely by economic dynamics. Rather, tax performance is shaped by the interaction of political, socio-economic, socio-cultural, institutional, administrative, and environmental factors (Sağdıç, 2019). Within this broader institutional context, governance-related factors—most notably budget transparency and democratization—have emerged as important determinants of tax revenues.

Among these institutional factors, budget transparency plays a central role in shaping both the level and sustainability of tax revenues. It refers to the timely, comprehensive, and comprehensible disclosure of budgetary information to the public and represents a fundamental governance principle that enables public scrutiny throughout the budget cycle, including budget formulation, implementation, and oversight (Badun, 2009; Tüğen, 2017). Since the beginning of the twenty-first century, international initiatives aimed at strengthening fiscal transparency and accountability have positioned budget transparency as a core component of modern public financial management systems (Gaventa & McGee, 2013). In this study,

budget transparency is operationalized using the Open Budget Index (OBI), one of the most widely accepted indicators of fiscal transparency.

Beyond improving accountability and reducing corruption, budget transparency contributes to the more efficient use of public resources, enhances the quality of public services, supports macroeconomic stability, and strengthens citizens' trust in government (Sedmihradská & Haas, 2013; Beydemir, 2024). These outcomes are expected to improve tax morale and encourage voluntary tax compliance by reducing information asymmetries and reinforcing institutional trust, ultimately contributing to higher tax revenues (Bates & Lien, 1985; Kirchler, 2007; Ortega et al., 2016; Petrie & Shields, 2010; Capasso et al., 2021; Zvereva et al., 2021).

Another important institutional determinant of tax revenues is the level of democratization. Democratization strengthens the relationship of trust between governments and citizens by expanding political participation, reinforcing accountability mechanisms, and constraining the exercise of public authority through constitutional and institutional arrangements (Vanhanen, 2003; Welzel, 2007). In this respect, democratization complements budget transparency by fostering openness, accountability, and public oversight in governance. Strong democratic institutions reinforce citizens' commitment to the fiscal social contract, thereby encouraging voluntary tax compliance. Consequently, democratization provides an important institutional explanation for variations in tax revenues beyond purely economic determinants (Persson & Tabellini, 2007; Garcia & Haldenwang, 2016).

Although an extensive body of research has examined the effects of budget transparency and democratization on corruption, fiscal discipline, and public expenditure efficiency, empirical evidence on their direct effects on tax revenues remains limited. Existing studies generally investigate these institutional dimensions separately or focus on indirect transmission mechanisms, leaving limited cross-country evidence on their joint contribution to tax revenue performance. This fragmentation restricts a comprehensive understanding of how institutional quality influences tax capacity and therefore reveals an important gap in the literature.

To address this gap, the present study examines the effects of budget transparency and democratization on tax revenues in a sample of OECD countries over the period 2008–2023 using panel data analysis. Budget transparency is measured through the Open Budget Index, while democratization is captured using a democracy index within a unified empirical framework. By jointly examining these two governance-related institutional factors, the study extends the existing literature beyond fragmented approaches that consider them separately. The empirical findings are expected to contribute to the public budgeting and public finance literature by providing new cross-country evidence on the institutional determinants of tax revenues and by offering policy-relevant implications for strengthening tax capacity through improvements in governance quality.

Beyond examining whether these institutional variables affect tax revenues, the study also evaluates their explanatory power relative to conventional macroeconomic determinants. In doing so, it provides

new evidence on whether governance quality constitutes a more influential driver of tax capacity than economic conditions across OECD countries.

2. Literature Review

2.1. Budget Transparency

The Open Budget Index (OBI), developed by the International Budget Partnership, is one of the most widely used indicators of budget transparency. Unlike perception-based measures, the OBI is constructed from independently verified budget documents, providing greater methodological rigor and cross-country comparability (De Renzio & Masud, 2011). As emphasized by De Renzio and Masud (2011), budget transparency strengthens accountability, enhances public oversight, and improves fiscal performance, highlighting its importance as a key governance mechanism for understanding fiscal capacity and tax revenues. In the present study, budget transparency is operationalized using the Open Budget Index.

A growing body of literature has documented the contribution of budget transparency to a wide range of economic and fiscal outcomes. Higher levels of transparency have been associated with improved public debt management (Alt & Lassen, 2006), stronger fiscal performance (Sedmihradská & Haas, 2013), greater budget efficiency (Jung, 2022), enhanced fiscal sustainability (Cuadrado-Ballesteros & Bisogno, 2022), better public expenditure outcomes (Bronić et al., 2022), more accurate budget revenue forecasting (Prijaković, 2023), and higher tax awareness and voluntary tax compliance (Al Maghrebi et al., 2016). Collectively, these studies identify budget transparency as a core governance mechanism that shapes fiscal outcomes by promoting accountability, reducing information asymmetries, and strengthening public oversight.

Despite this growing body of evidence, empirical research examining the direct relationship between budget transparency and tax revenues remains limited, particularly at the central government level. Most existing studies focus on expenditure-related outcomes or examine transparency within subnational governments, such as municipalities, thereby limiting the generalizability of their findings to national tax systems. Consequently, systematic cross-country evidence on the extent to which budget transparency directly influences central government tax revenues remains scarce.

Early cross-country studies primarily examined the relationship between budget transparency and fiscal discipline. Alt and Lassen (2006) demonstrate that greater budget transparency is associated with lower budget deficits and public debt levels among OECD countries, while Benito and Bastida (2009) report a positive relationship between transparency and fiscal balance, suggesting that transparent budgeting constrains opportunistic fiscal behavior. In contrast, Sedmihradská and Haas (2013), using data from 18 countries, find that although budget transparency significantly reduces corruption, its effects on budget deficits and public debt are statistically insignificant. Taken together, these findings suggest that the

fiscal consequences of budget transparency vary across different fiscal outcomes and should be interpreted with attention to the underlying transmission mechanisms.

More recent research has expanded the literature beyond fiscal discipline by examining fiscal sustainability and budget efficiency. Cuadrado-Ballesteros and Bisogno (2022), using data from 110 countries, provide robust evidence that budget transparency contributes positively to fiscal sustainability. Likewise, Jung (2022) argues that transparency-enhancing instruments, including online open budget systems, improve budget efficiency by mitigating principal–agent problems, encouraging public participation, and strengthening external oversight. These studies collectively indicate that transparency improves fiscal performance not only by promoting fiscal discipline but also by enhancing the quality of budgetary decision-making.

Another strand of the literature focuses on budget credibility and revenue forecasting, predominantly at the subnational level. Rios et al. (2018) show that greater transparency among municipalities reduces deviations between budget forecasts and actual tax revenues and current expenditures. Similarly, Prijaković (2023) and Guillamón et al. (2024) find that more transparent local governments exhibit more reliable revenue forecasting practices. Although these studies provide valuable insights into the mechanisms through which transparency influences fiscal outcomes, their emphasis on local governments limits the extent to which their findings can be generalized to central government tax revenues.

Direct empirical evidence linking budget transparency to tax revenues remains particularly scarce. Cifuentes Faura et al. (2024) report a positive relationship between municipal transparency and tax collection in Spain, while Al Maghrebi et al. (2016) argue that greater transparency enhances tax awareness and voluntary tax compliance. Nevertheless, these studies do not provide cross-country evidence at the central government level. Overall, the literature consistently demonstrates that budget transparency strengthens fiscal governance and improves a variety of fiscal outcomes; however, whether these institutional improvements translate directly into higher national tax revenues remains an unresolved empirical question.

Against this background, the present study seeks to address this gap by providing cross-country evidence on the relationship between budget transparency and central government tax revenues. By focusing on OECD countries and examining budget transparency within a unified empirical framework, the study extends the existing literature beyond expenditure-oriented and subnational analyses and contributes new evidence on the role of fiscal transparency in strengthening national tax capacity.

2.2. Democratization

Democratization constitutes another fundamental institutional determinant of fiscal capacity and tax revenue performance. Beyond its political implications, democratic governance influences economic outcomes by strengthening trust, stability, and policy credibility, thereby encouraging investment, economic activity, and ultimately higher tax revenues (Sasmaz, 2019; Ozcan & Ozmen, 2019). From a

theoretical perspective, democratic institutions enhance accountability, constrain rent-seeking behavior, and reinforce the fiscal social contract between governments and citizens. Consequently, democratization has increasingly been recognized as an important institutional driver of tax capacity.

Empirical evidence generally supports a positive relationship between democratization and tax revenues, although the magnitude of this relationship varies across countries and empirical approaches. Using data from 108 countries over the period 1970–1990, Cheibub (1998) finds that democratic regimes collect substantially higher tax revenues as a share of GDP than autocratic regimes. Similarly, Ehrhart (2012) reports a statistically significant positive effect of democracy on tax revenues in developing countries, while Acemoglu et al. (2015) provide further evidence that democratization increases tax revenues by approximately 16 percent of GDP. Collectively, these studies highlight the important contribution of democratic institutions to strengthening national tax capacity.

Subsequent research has refined these findings by emphasizing heterogeneity across political systems and tax structures. Ashraf and Sarwar (2016) demonstrate that democratic development positively affects tax revenues, whereas autocratic governance has the opposite effect, particularly in developing economies. Rashid et al. (2021) further show that the influence of democracy differs across tax categories, with the strongest effects observed for personal income taxes in developed countries. These findings suggest that democratization affects not only the overall level of tax revenues but also the composition of national tax systems.

Other studies emphasize the conditional and contextual dimensions of this relationship. Balamatsias (2018) finds that regional waves of democratization strengthen domestic democratic institutions and positively influence direct taxation. Andersson (2018) argues that the impact of democracy on tax structures depends on the distribution of societal tax preferences, highlighting the importance of country-specific institutional conditions. Focusing on OECD countries, Sasmaz (2019) identifies bidirectional causality between democracy and tax revenues, suggesting that political and fiscal institutions reinforce one another over time. Taken together, these studies indicate that the relationship between democratization and tax performance is dynamic, context-dependent, and institutionally embedded.

Despite this extensive body of research, the relationship between democratization and tax revenues has largely been examined independently of other governance-related institutional factors. In particular, budget transparency has rarely been incorporated as a complementary mechanism through which democratic institutions may influence fiscal outcomes. Consequently, the interaction between democratization and fiscal transparency—and their combined effects on tax revenues—remains insufficiently understood.

Overall, the literature provides substantial evidence that both budget transparency and democratization independently contribute to stronger fiscal performance. Budget transparency enhances accountability, reduces information asymmetries, and strengthens public trust, whereas democratization reinforces the fiscal social contract through political participation, accountability, and institutional checks and

balances. Nevertheless, existing studies generally examine these institutional dimensions separately, focus on indirect transmission channels, or rely on subnational evidence. As a result, cross-country analyses that jointly investigate the direct effects of budget transparency and democratization on central government tax revenues remain extremely limited, particularly in the context of OECD countries. Addressing this gap, the present study integrates both institutional dimensions within a unified empirical framework and provides new cross-country evidence on their combined contribution to national tax capacity. Moreover, existing studies rarely compare the relative importance of institutional and macroeconomic determinants within a unified empirical framework. Consequently, it remains unclear whether governance quality explains tax revenue performance more effectively than conventional economic factors.

2.3. Research Hypotheses

The literature reviewed above suggests that budget transparency and democratization influence fiscal performance through distinct but complementary institutional mechanisms. Budget transparency is expected to enhance tax capacity by reducing information asymmetries, strengthening public accountability, and fostering citizens' trust in government. Democratization, in turn, is argued to reinforce the fiscal social contract by promoting political participation, institutional accountability, and government legitimacy, thereby encouraging voluntary tax compliance. Although previous studies generally report positive associations between these governance dimensions and fiscal outcomes, empirical evidence examining their direct and joint effects on central government tax revenues remains limited, particularly in cross-country settings. Accordingly, the present study proposes the following hypotheses:

H_1

Budget transparency has a positive effect on central government tax revenues.

H_2

Democratization has a positive effect on central government tax revenues.

3. Materials and Methods

3.1. Data Set and Variables

In this study, the effects of budget transparency and democratization on tax revenues are empirically analyzed in a sample of OECD countries. In the measurement of budget transparency, the Open Budget Index (OBI) calculated by the International Budget Partnership (IBP) was used. The Open Budget Index was obtained by the International Budget Partnership (IBP) using a 240-question open budget survey from public institutions, non-governmental organizations focused on budget issues, and academic institutions. The survey has been applied in certain years (2006, 2008, 2010, 2012, 2015, 2017, 2019, 2021, 2023) since 2006.

In addition, the Democracy Index calculated by The Economist Intelligence Unit (EIU) was used as an indicator of democratization in this study. This index covers five basic dimensions: the electoral process and pluralism, the functioning of the government, political participation, political culture and civil liberties, and is measured on a scale of 0–10. To account for economic dynamics, the study incorporates tax revenues, foreign direct investment (FDI) and GDP per capita (GDPC) as key independent variables. These datasets were retrieved from the World Bank's World Development Indicators (WDI) database, ensuring cross-country comparability and data reliability.

In this study, tax revenues (TAX) are used as the dependent variable, while the Democracy Index (DI) and the Open Budget Index (OBI) are employed as the main independent variables. To clearly identify the relationship between tax revenues and budget transparency, foreign direct investment (FDI) and GDP per capita (GDPC) are included as control variables in the analysis. Table 1 shows the variables used in the study, their symbols and definitions.

Table 1
Variables, Definitions and Sources Used in the Study

Name of the variable*	**Symbol of the variable**	**Defining the Variable**
Dependent Variable		
Tax Revenue	TAX	Percentage of Tax Revenue in GDP / World Bank
Independent Variables		
Democratization Index	DI	Score between 0–10 / EIU
Open Budget Index	OBI	Score between 0–100 / IBP
Control Variables		
Foreign Direct Investment	FDI	Foreign Direct Investment, net flow, percentage of GDP / World Bank
GDP Per Capita	GDPC	GDP Per Capita, USD- World Bank

* Data obtained from public platforms.

Because the Open Budget Survey is conducted at irregular intervals rather than annually, the OBI values for the intervening years were generated using linear interpolation to construct a balanced annual panel for the period 2008–2023. The interpolation procedure assumes that changes in budget transparency occur gradually between consecutive survey rounds. This approach preserves the gradual evolution of budget transparency over time and has been widely adopted in panel-data studies where institutional indicators are observed intermittently.

3.2. Sample and Scope

Although the study covers OECD countries, the analysis is limited to 12 OECD member states for which regular, consistent, and comparable data are available over time, due to the irregular publication frequency of the Open Budget Index and the lack of uninterrupted data for all OECD members. The countries included in the sample are Colombia, Costa Rica, Czechia, France, Germany, Mexico, New Zealand, Norway, Poland, Slovenia, United Kingdom, and United States. The analysis is conducted using annual data for the period 2008–2023.

Despite the relatively limited size of the sample, the selected countries provide methodologically reliable, temporally consistent, and internationally comparable indicators of budget transparency and democratic development. This sample selection constitutes a methodological advantage, as it helps to reduce measurement errors and allows for a more accurate assessment of the time-varying dynamics of institutional indicators.

3.3. Method

In this study, panel data regression analysis is employed as the primary methodological approach to examine the relationships among the variables. The panel data framework simultaneously integrates cross-sectional and time-series dimensions, allowing for the control of unobserved, time-invariant country-specific heterogeneity that may otherwise bias the estimation results. By exploiting variation across both dimensions, panel data models provide greater informational content, increased variability, and reduced multicollinearity compared to purely cross-sectional or time-series approaches. Accordingly, the general specification of the panel data regression model is presented in Eq. (1).

$$Y_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \ldots + \beta_k X_{kit} + \epsilon_{it}$$

1

Here, $i = 1,2,\ldots,N$ denotes the cross-sectional units, $k = 1,2,\ldots,K$ represents the number of slope parameters, and $t = 1,2,\ldots,T$ indicates the time dimension. The parameter α refers to the constant term, while K denotes the number of slope coefficients (Bukey & Akgül, 2021). When constructing a panel data regression model, the appropriate model must first be identified. For this purpose, several tests need to be conducted to determine which of the pooled ordinary least squares (POLS), fixed effects (FE), or random effects (RE) models is suitable. For this purpose, the F test was performed between the pooled least squares and fixed effects models to determine which one was appropriate. Subsequently, the Breusch–Pagan Lagrange Multiplier (LM) test was conducted to determine the appropriate model between the pooled ordinary least squares (OLS) and random effects models. If the pooled model is rejected, the choice between the fixed effects and random effects models is made using the Hausman test, which is presented in Eq. (2) (Guggenberger, 2010).

$$H = \frac{N\left(\widehat{\beta}_{FE} - \widehat{\beta}_{RE}\right)}{\left(Var(\widehat{\beta}_{FE}) - Var(\widehat{\beta}_{RE})\right)}$$

2

After determining the appropriate model specification, diagnostic tests are conducted to assess whether the model assumptions are satisfied. To examine the presence of multicollinearity among the independent variables, Variance Inflation Factor (VIF) values are calculated as shown in Eq. (3) (Shrestha, 2020).

$$VIF = \frac{1}{\left(1 - R^2\right)}$$

3

To test for autocorrelation in the model, the Durbin–Watson statistic proposed by Bhargava et al. (1982) and the Baltagi-Wu LBI test statistic (Baltagi & Wu, 1999) were computed. Values of these statistics below 2 indicated the presence of autocorrelation. To examine heteroskedasticity, the Levene–Brown–Forsythe test was applied, where the null hypothesis assumed homoskedasticity and the alternative hypothesis indicated heteroskedasticity (Baskak, 2025). In order to test the cross-sectional dependency, the Frees test, which is independent of the distribution and recommended to be used in the case of N > t, was performed under the hypothesis that there is no cross-sectional dependency, showing that the asymptotic distribution depends on the population (Frees, 1995).

In panel data analyses, violations of standard assumptions such as heteroskedasticity, autocorrelation, and cross-sectional dependence can lead to inefficient and biased parameter estimates. To address these issues, this study applies the Prais–Winsten regression method combined with Panel Corrected Standard Errors (PCSE), which accommodates heteroskedasticity and unit-specific AR(1) error structures (Aksoy, 2013; Ahapova, 2020; Baptista et al., 2021). By using this robust estimation approach, the analysis ensures consistent and efficient parameter estimates, providing reliable inference even in the presence of potential model violations.

$$Cov\left(\widehat{\beta}\right) = \left(X'\,X\right)^{-1}\,\left\{X'\,\Omega\,X\right\}\left(\,X'\,X\right)^{-1}$$

4

For the sample variability of ordinary least squares estimates, the square roots of the diagonal terms of equality (4) are used. However, panel corrected standard errors can be provided and reliable parameter estimates can be made by using the correction shown in Eq. (5) for the Ω matrix in Eq. (4) for panel models with autocorrelated and varying variance errors (Beck & Katz, 1995).

$$\widehat{\Sigma}_{i,j} = \frac{\sum_{t=1}^{T} e_{i,t} e_{j,t}}{T}$$

5

The simultaneous Ω matrix is an NT×NT diagonal matrix with an N×N simultaneous covariance matrix Σ on its diagonal. Using Eq. (5), the $\widehat{\Sigma}$ matrix is formed, and the $\widehat{\Omega}$ estimator is defined as a block diagonal matrix with $\widehat{\Sigma}$ matrices on its diagonal.

4. Analysis and Findings

To examine the relationship between tax revenues and institutional quality, the empirical model is specified as follows:

[

TAX_{it}=\alpha+\beta_1DI_{it}+\beta_2OBI_{it}+\beta_3FDI_{it}+\beta_4GDPC_{it}+\varepsilon_{it}

]

where **TAX** denotes tax revenues, **DI** represents the Democracy Index, **OBI** is the Open Budget Index, **FDI** refers to foreign direct investment, and **GDPC** denotes GDP per capita.

4.1. Model Selection and Diagnostic Tests

The selection of the appropriate panel data specification was based on the F test, the Breusch–Pagan Lagrange Multiplier (LM) test, and the Hausman test. The results presented in Table 2 indicate that both the F and Breusch–Pagan LM tests reject the pooled model in favor of fixed-effects and random-effects specifications, respectively. The Hausman test fails to reject the null hypothesis, indicating that the random-effects model is the appropriate specification for the empirical analysis.

Table 2
Tests Performed to Determine the Appropriate Model

Model	***Test Name***	***Test Ist.***	***Prob.***	***Conclusion***
Fixed Effects	*F Test*	*133,69*	*0,000*	*The fixed effects model is preferred over the pooled model*
Random Effects	*BP LM Test*	*194,05*	*0,000*	*The random effects model is preferred over the pooled model*
Eligibility	*Correlated Random Effects -Hausman Test*	*7,71*	*0,102*	*The random effects model is appropriate*

After identifying the appropriate panel specification, several diagnostic tests were conducted to assess the validity of the model assumptions. The Variance Inflation Factor (VIF) values reported in Table 3 are all below the conventional threshold of five, indicating that multicollinearity is not a concern.

Table 3
VIF Values Between Variables

Variables	*VIF*	*1/VIF*
DI	*2,78*	*0,36*
OBI	*2,37*	*0,42*
FDI	*1,19*	*0,84*
GDPC	*4,58*	*0,21*
VIF Average	*2,73*	

The results reported in Table 4 reveal the presence of both heteroskedasticity and serial correlation. Specifically, the Levene–Brown–Forsythe statistics reject the null hypothesis of homoskedasticity, while the Durbin–Watson and Baltagi–Wu LBI statistics indicate first-order autocorrelation.

Table 4
Autocorrelation and Varying Variance Tests

Heteroskedasticity	*Test Ist.*	*Probability*	*Autocorrelation*	*Test Ist.*
W0	*2,70*	*0,00*	*Durbin-Watson*	*1,14*
W50	*1,89*	*0,05*	*Baltagi-Wu LBI*	*1,49*
W10	*2,70*	*0,00*		

Cross-sectional dependence was further examined using the Frees (1995) test. As reported in Table 5, the Frees test statistic exceeds the corresponding critical value, indicating the presence of cross-sectional dependence among the countries included in the sample.

Table 5
Cross-Sectional Dependence Test

%1	*Critical Values*	*Frees Test Ist.*
	0,90	***1,46***
%5	*0,56*	
%10	*0,41*	

Taken together, the diagnostic tests indicate that although multicollinearity is not problematic, the model exhibits heteroskedasticity, autocorrelation, and cross-sectional dependence. To obtain efficient and robust parameter estimates under these conditions, the final model was estimated using the Prais–Winsten regression with Panel Corrected Standard Errors (PCSE), which corrects for heteroskedasticity and unit-specific AR(1) error structures.

4.2. Regression Results

The estimation results obtained from the Prais–Winsten PCSE model are presented in Table 6.

Table 6
Panel Corrected Standard Errors (PCSE) Model

Variables	***Coefficient***	***PCSE Stand. Error***	***z***	***p***
DI	*0,68*	*0,34*	*2,00*	*0,04*
OBI	*0,49*	*0,16*	*3,07*	*0,00*
FDI	*0,02*	*0,01*	*2,61*	*0,00*
GDPC	*0,18*	*0,10*	*1,87*	*0,06*
Constant	*-2,57*	*0,78*	*-3,28*	*0,00*
Chi sq.= 54,85 p = 0,00, R^2 = 0,97				

The empirical findings indicate that all explanatory variables are positively associated with tax revenues. Among the institutional variables, democratization emerges as the strongest determinant of tax revenues. The estimated coefficient suggests that a one-unit increase in the Democracy Index is associated with an approximately 0.68-unit increase in tax revenues, holding other factors constant. This finding highlights the importance of democratic institutions in strengthening fiscal capacity through enhanced accountability, policy credibility, and institutional effectiveness.

Budget transparency also exhibits a positive and statistically significant relationship with tax revenues. The coefficient of the Open Budget Index indicates that improvements in budget transparency contribute to higher tax revenues, supporting the argument that transparent fiscal institutions strengthen public trust, improve accountability, and encourage greater tax compliance. Although its estimated effect is smaller than that of democratization, budget transparency represents the second most influential institutional determinant in the model.

The control variables are likewise positively associated with tax revenues. GDP per capita has a positive effect that is statistically significant at the 10% level, suggesting that higher levels of economic development contribute to greater fiscal capacity. Foreign direct investment also exerts a positive and statistically significant influence on tax revenues, although its magnitude is considerably smaller than that of the institutional variables. Overall, these findings indicate that institutional quality explains tax revenue performance more strongly than conventional macroeconomic controls.

An important implication of these findings is that institutional quality appears to explain cross-country differences in tax revenues more effectively than conventional macroeconomic determinants. Although GDP per capita and foreign direct investment remain statistically significant, their comparatively smaller coefficients indicate that governance-related institutions constitute the primary drivers of fiscal capacity within the OECD sample. This finding suggests that improvements in institutional quality may generate more sustainable gains in tax revenues than relying solely on favorable macroeconomic conditions.

The estimated model is statistically significant, with a chi-square statistic of 54.85 ($p < 0.01$), and explains a substantial proportion of the variation in tax revenues ($R^2 = 0.97$). This relatively high explanatory power largely reflects the structural nature of the institutional indicators and the definition of tax revenues as a share of GDP. Therefore, the reported R^2 should be interpreted as an indicator of model fit rather than evidence of perfect explanatory performance.

Overall, the empirical findings are broadly consistent with previous studies emphasizing the positive role of democratic institutions in strengthening tax capacity (Cheibub, 1998; Ehrhart, 2012; Acemoglu et al., 2015; Sasmaz, 2019). Likewise, the positive association between budget transparency and tax revenues complements earlier evidence suggesting that transparent fiscal institutions improve accountability, tax awareness, and fiscal governance (Al Maghrebi et al., 2016; Cifuentes Faura et al., 2024). Unlike much of the existing literature, however, the present study examines budget transparency and democratization simultaneously within a unified cross-country framework, providing new evidence that these institutional dimensions jointly contribute to stronger tax revenue performance in OECD countries. More importantly, by evaluating institutional and macroeconomic variables simultaneously, the present study demonstrates that governance-related factors possess greater explanatory power than conventional economic controls. This represents the principal empirical contribution of the study.

Finally, it should be noted that the institutional variables employed in this study evolve gradually over time and are not expected to respond immediately to short-term fluctuations in tax revenues. Accordingly, the estimated coefficients should be interpreted as reflecting stable long-run associations rather than strict causal relationships. Although reverse causality cannot be entirely ruled out, the primary objective of this study is to identify the empirical relationship between institutional quality and tax revenue performance.

5. Conclusion and Recommendations

Over the past decades, fiscal transparency, accountability, and citizen participation have become fundamental pillars of contemporary public financial management reforms. Within this context, this study examined the relationship between budget transparency, democratization, and tax revenues across 12 OECD countries over the period 2008–2023. By jointly incorporating the Open Budget Index and the Democracy Index within a unified panel-data framework, the study contributes to the public finance literature by providing new cross-country evidence on how institutional quality shapes national tax capacity.

The empirical findings demonstrate that both democratization and budget transparency are positively associated with tax revenues. Among the institutional variables, democratization emerges as the strongest determinant of tax revenue performance, suggesting that democratic accountability, political participation, and stronger state–citizen relationships contribute to higher fiscal capacity. Budget transparency also exerts a significant positive effect, indicating that transparent fiscal institutions not

only improve expenditure management but also strengthen the revenue side of public finance by enhancing public trust, reducing information asymmetries, and encouraging voluntary tax compliance.

One of the principal findings of this study is that institutional variables exhibit considerably stronger explanatory power than conventional macroeconomic determinants. Although GDP per capita and foreign direct investment remain positively associated with tax revenues, their relatively modest effects suggest that improvements in economic conditions alone cannot fully explain cross-country differences in fiscal capacity. Instead, governance quality emerges as the primary driver of tax revenue performance.

From a theoretical perspective, this study extends the existing literature by jointly examining budget transparency and democratization within a single empirical framework. While previous studies have generally investigated these institutional dimensions separately or have focused on expenditure-related outcomes and subnational governments, the present analysis demonstrates that they operate as complementary governance mechanisms associated with stronger tax revenue performance at the central government level. In doing so, the study contributes to a more comprehensive understanding of the institutional foundations of fiscal capacity in OECD countries. Accordingly, the principal contribution of this study lies not only in demonstrating that budget transparency and democratization positively influence tax revenues, but also in showing that these governance-related institutional factors exert stronger explanatory power than conventional macroeconomic determinants.

The findings also have important policy implications. Strategies aimed at sustainably increasing tax revenues should not rely exclusively on conventional fiscal instruments such as tax rate adjustments or tax-base expansion. Instead, strengthening institutional quality should be regarded as a complementary pillar of fiscal policy. In particular, improving budget transparency through the timely, accessible, and comprehensible disclosure of fiscal information can reinforce public trust, strengthen social oversight, and contribute to more effective revenue collection.

Similarly, reinforcing the institutional capacity of supreme audit institutions and independent oversight mechanisms can enhance accountability in public financial management and increase confidence in the use of public resources. At the same time, encouraging broader democratic participation in budgetary and tax policy processes may improve perceptions of procedural fairness, strengthen tax morale, and support the long-term sustainability of tax revenues. These institutional reforms remain relevant even for relatively high-income and institutionally advanced OECD economies. Accordingly, strengthening tax capacity should be considered not only a fiscal policy objective but also an institutional governance objective.

This study is subject to several limitations that also provide opportunities for future research. First, the analysis is limited to OECD countries for which consistent budget transparency data are available, restricting the generalizability of the findings to other country groups. Second, the study focuses on aggregate tax revenues and therefore does not distinguish between different categories of taxation. Future research could extend the analysis by examining the effects of budget transparency on direct and indirect taxes separately, as well as by investigating the relationship between subnational budget

transparency and local tax performance. Such analyses would provide a more nuanced understanding of how institutional quality influences fiscal capacity across different levels of government.

Declarations

Competing interests

The authors declare no competing interests.

Ethical approval

Ethical approval was not required as the study did not involve human participants.

Informed consent

This article does not contain any studies with human participants performed by any of the authors.

Author Contribution

Author ContributionsConceptualization, M.T.; methodology, M.G.; software, M.G.; validation, M.T.; formal analysis, M.G.; investigation, M.T.; resources, M.T.; data curation, M.G.; writing—original draft preparation, M.T and M.G..; writing—review and editing, M.T and M.G.; visualization, M.G.; supervision, M.T. All authors have read and agreed to the published version of the manuscript.

Acknowledgements

No funding was received for conducting this study.

Data Availability

All supporting data and variable definitions are available in the Supplementary Material.

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