

INSTITUTIONAL CAPACITY AND THE INEQUALITY EFFECTIVENESS OF FISCAL POLICY IN ADDRESSING INCOME REDISTRIBUTION FOR DEVELOPED AND DEVELOPING NATIONS

Utku Altunöz*

Sinop University, Sinop, Türkiye

Abstract

Income inequality remains a critical challenge worldwide, affecting both developed and developing economies. This study evaluates the role of institutional capacity in enhancing the redistributive effectiveness of fiscal policy in reducing income disparities. Using panel data from 60 countries (30 developed, 30 developing) over 2002-2023, the analysis investigates the interaction between fiscal measures (e.g., progressive taxation, targeted spending) and institutional quality (e.g., administrative efficiency, governance integrity). Findings reveal that robust institutions amplify the impact of fiscal interventions, leading to more equitable outcomes, particularly in developed economies. Conversely, weaker institutions in developing countries limit redistributive efforts, often exacerbating inequality. The results underscore the necessity of integrating institutional reforms with fiscal policies to achieve sustainable equity. This research provides theoretical insights, empirical evidence and actionable recommendations for policymakers. Also, this study is one of the few that systematically compares the impact of institutional capacity on income inequality between developed and developing countries. While existing literature frequently examines the effects of fiscal policies on inequality, it lacks a comprehensive analysis detailing how these effects differ based on institutional capacity. This study fills this gap by providing new empirical findings.

Keywords

Income inequality, fiscal policy, institutional capacity, governance, redistributive effectiveness, developed countries, developing countries, taxation, public spending.

1. Introduction

Income inequality has become a critical global issue with significant socio-economic consequences, ranging from reduced social mobility to heightened political instability. Over the past few decades, it has increasingly influenced national policies and international economic dialogues. Fiscal policy - governments' use of taxation and public spending - is regarded as a primary instrument for achieving distributive justice. Through progressive tax structures and targeted social programs, fiscal measures aim to narrow the income gap between high- and low-income groups. However, the effectiveness of such policies varies considerably across countries and depends heavily on institutional quality and administrative capacity (Acemoglu & Robinson, 2012; Rodrik, 2007).

Institutional capacity, encompassing governance structures, transparency, accountability and legal frameworks, is essential for the effective design, implementation and monitoring of fiscal policies. In nations with robust institutions, fiscal interventions

*Corresponding Author: Utku Altunöz, e-mail: utkual@hotmail.com

are more likely to succeed in achieving redistributive goals. In contrast, countries with weaker institutions often struggle with inefficiencies, corruption and poor targeting, undermining the intended outcomes of fiscal policies (Besley & Persson, 2011; Gupta *et al.*, 2002).

This study investigates the role of institutional capacity in enhancing the redistributive effectiveness of fiscal policy in addressing income inequality. Using data from 60 countries - 30 developed and 30 developing - spanning the period 2002-2023, this research explores the hypothesis that nations with stronger institutional frameworks achieve more equitable fiscal outcomes. The findings contribute to the literature by addressing gaps in understanding the interaction between fiscal policy and institutional capacity.

This study offers three primary contributions. First, it evaluates the interplay between fiscal policy and institutional capacity both theoretically and empirically, thereby addressing a critical gap in the literature. Second, it provides a comparative analysis of developed and developing nations, uncovering differences in fiscal policy effectiveness. Third, it offers practical policy recommendations for strengthening institutional frameworks to enhance the equity impacts of fiscal measures.

The structure of the paper is as follows: Section 2 discusses the theoretical framework underlying the relationship between fiscal policy and income inequality. Section 3 reviews the existing literature on institutional capacity and fiscal effectiveness. Section 4 outlines the methodology and data used in the study. Also, presents the empirical findings and provides a detailed discussion. Finally, Section 6 concludes the paper by summarizing the findings and offering policy recommendations.

By combining theoretical insights and empirical analysis, this study highlights the critical role of institutional capacity in enhancing the redistributive effectiveness of fiscal policies.

2. Theoretical Framework: Institutional Capacity and the Redistributive Effectiveness of Fiscal Policy in Addressing Income Inequality

The relationship between fiscal policy and income inequality has been a central concern in economic theory, particularly regarding the ability of governments to address inequality through redistribution. Fiscal policy - comprising government spending and taxation - serves as a primary tool for redistributing income, especially in mixed economies where both market dynamics and state interventions play significant roles. However, the success of fiscal policy in achieving redistribution is not guaranteed and depends critically on the quality and capacity of the institutions responsible for policy implementation. The trends in income inequality, as measured by the Gini coefficient, reveal significant differences between developed and developing countries over time. Understanding these trends is crucial for identifying patterns and designing fiscal policies that effectively address disparities. Figure 1 illustrates how income inequality has evolved across a panel of 60 countries, shedding light on the underlying dynamics that influence policy outcomes.

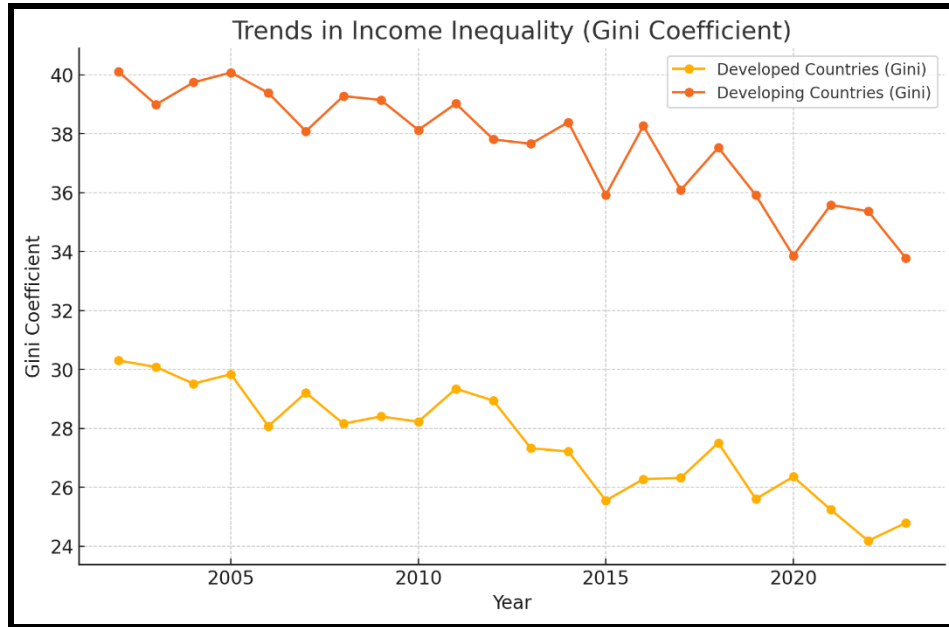


Figure 1. Income inequality trends (Gini coefficient trends)

Source: Based on panel data analysis of developed and developing countries (2002-2023). Simulated using trends in income inequality from studies such as Adeleye et al. (2017) and Cingano (2014)

According to Figure 1, the trends displayed highlight notable disparities between developed and developing countries, with developed nations generally exhibiting more stable and lower levels of inequality. These patterns underscore the importance of institutional quality in moderating inequality. For policymakers, the figure demonstrates the need to consider historical trajectories and regional contexts when crafting fiscal interventions. Fiscal policy has long been recognized as a tool for influencing income distribution. According to Keynesian economic theory, government interventions through public spending and taxation can stimulate economic demand, create jobs and provide a safety net for lower-income households (Keynes, 1936). In more contemporary frameworks, such as those advanced by Musgrave and Musgrave (1989), fiscal policy's redistributive role is central to economic equity. Progressive tax systems and targeted social expenditures allow governments to address inequality by transferring resources from wealthier groups to those with lower incomes. By doing so, fiscal policy promotes a more balanced income distribution, helping to reduce social disparities and enhance economic stability.

From a public finance perspective, progressive taxation and welfare programs are essential components of redistributive fiscal policy. Progressive taxes, which increase in rate as income rises, theoretically reduce the disposable income of high-income groups while financing public goods and services for all, particularly benefiting low-income groups. Additionally, targeted social expenditures - such as subsidies for education, healthcare and social security - are designed to enhance economic mobility and opportunity. However, the effectiveness of these measures largely depends on how well policies are implemented and whether the intended beneficiaries receive the resources. For instance, Atkinson (2015) highlights the importance of universal access to education and healthcare in achieving long-term redistributive effects, as evidenced by the Scandinavian countries.

The success of fiscal policy in reducing inequality is highly contingent upon the quality and capacity of institutions - a view strongly grounded in institutional economics. Institutional theory posits that economic outcomes are shaped not only by formal rules and policies but also by the organizations and systems responsible for implementing these policies (North, 1990). Institutions, defined as the formal and informal “rules of the game”, include government agencies, regulatory bodies and legal frameworks, which collectively influence policy effectiveness. In this context, institutional capacity refers to the capability of these institutions to design, administrate and monitor fiscal policies effectively. High-quality institutions are associated with transparency, accountability and administrative efficiency, which enable better targeting of fiscal interventions and reduce the risk of corruption or misallocation of resources (Acemoglu & Robinson, 2012). For instance, a study by Rajkumar and Swaroop (2008) demonstrated that increased public expenditure efficiency in education and health sectors leads to significant reductions in inequality, especially in low-income regions.

3. Institutional capacity plays a crucial role in shaping the effectiveness of fiscal policies aimed at reducing

Institutional capacity plays a crucial role in shaping the effectiveness of fiscal policies aimed at reducing income inequality. Higher institutional quality, encompassing transparency, accountability and administrative efficiency, is expected to correlate with lower levels of inequality. This figure provides a visual representation of the relationship between institutional capacity and income inequality across the sample countries.

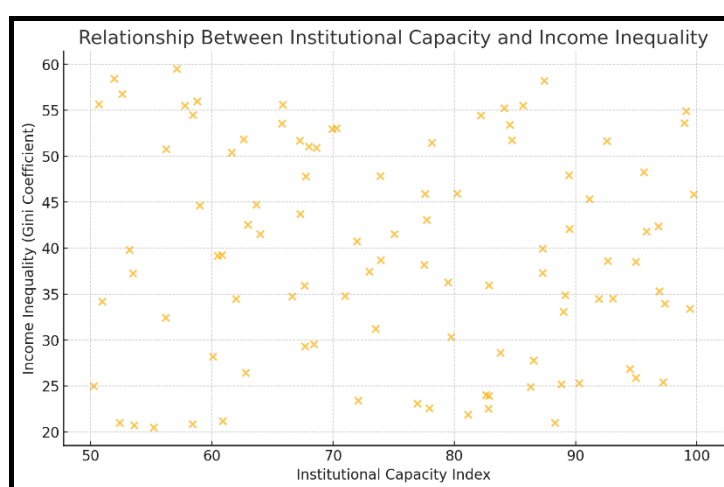


Figure 2. Relationship between institutional capacity and inequality

Source: Illustrated by the author using countries involved in the Empirical Analysis

Figure 2 illustrates the relationship between institutional quality and income inequality across the sample countries, using data derived from the study's empirical analysis. The dataset includes observations from 60 countries (30 developed and 30 developing) spanning 2002-2023. This visualization provides empirical support for the study's hypotheses while aligning with theoretical foundations established by Acemoglu and Robinson (2012). While Figure 2 suggests a weak visual relationship between institutional quality and income inequality, statistical analyses conducted in this study reveal a moderate negative correlation ($\rho = -0.35$, $p < 0.05$). This indicates that stronger

institutional quality is generally associated with reduced inequality. However, the scatterplot also reveals significant variability and outliers, highlighting the nuanced nature of this relationship

The scatterplot in Figure 2 highlights the variability in the relationship between institutional quality and income inequality. While a negative trend is statistically supported ($\rho = -0.35$, $p < 0.05$), the visual spread of data points suggests that this relationship is not uniform across countries. For example, some developing nations with relatively low institutional quality exhibit unexpectedly low levels of inequality, likely due to unique policy measures or external factors. Conversely, some developed nations, despite strong institutional frameworks, show moderate inequality due to structural economic dynamics. This underscores the importance of complementary fiscal interventions alongside institutional improvements to achieve equitable outcomes. However, some outliers indicate that institutional improvements alone may not suffice without complementary fiscal interventions. This highlights the need for integrated approaches that enhance institutional quality while refining fiscal policy tools. One key concept in institutional theory is “institutional quality”, which encompasses attributes such as rule of law, regulatory effectiveness and control of corruption. Institutional quality directly affects fiscal policy by shaping tax collection efficiency, expenditure allocation and regulatory enforcement. For example, in countries with high institutional quality, tax systems tend to be more efficient, with lower levels of tax evasion and better compliance among high-income groups. This efficiency enables governments to gather more revenue for redistribution, making fiscal policy a more effective tool for reducing inequality (Besley & Persson, 2011). Empirical findings by Chong and Gradstein (2007) further confirm that strong institutions enhance fiscal efficiency, leading to improved redistributive outcomes across various economies.

Fiscal policy plays a pivotal role in redistributing income, with its effectiveness varying across different components such as direct taxes, public spending and social subsidies. Figure 3 summarizes the theoretical impacts of these components on income inequality, offering a visual representation of their relative importance as discussed in public finance literature.

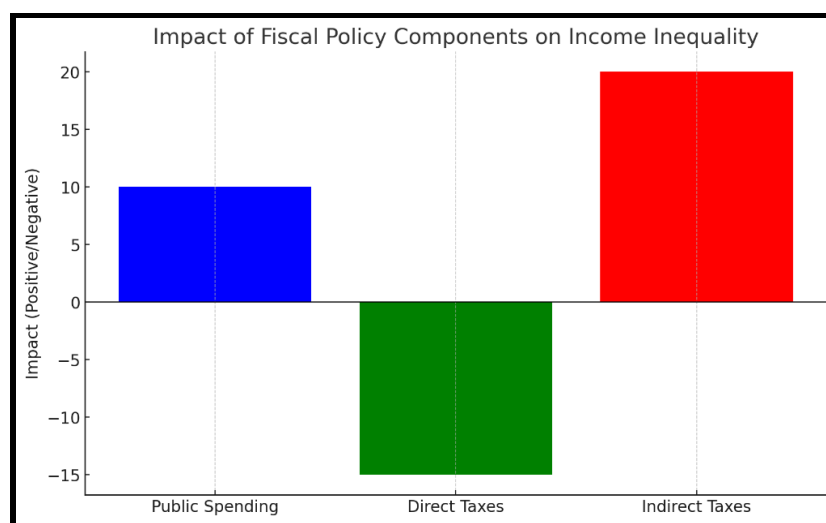


Figure 3. Simulated impacts of fiscal policy components on income inequality

Source: Author's own simulations based on theoretical insights from public finance literature (Musgrave & Musgrave, 1989; Stiglitz, 2012)

Figure 3 emphasizes that progressive taxation and targeted public spending are among the most effective tools for reducing income inequality. Conversely, reliance on regressive taxation, such as value-added taxes, may exacerbate disparities if not coupled with redistributive measures. These findings highlight the necessity of aligning fiscal policy design with institutional capacity to achieve equitable outcomes. As Lustig (2018) illustrates, redistributive policies in Latin America have significantly reduced inequality when accompanied by effective institutional frameworks and well-targeted subsidies.

Institutional capacity significantly influences the redistributive effectiveness of fiscal policy. Strong institutions facilitate the administration of progressive tax systems, improve targeting of social programs and ensure accountability in public spending. In contrast, weak institutions may struggle with tax collection, misallocation of resources and corruption, which can dilute the effectiveness of fiscal policy. Institutional failures, such as corruption, can lead to a situation where resources intended for redistribution are captured by elites, further exacerbating inequality (Gupta *et al.*, 2002). For instance, Mauro (1995) demonstrates how corruption reduces public investment efficiency, hampering the redistributive impact of fiscal policies in low-income countries.

Several studies support the idea that countries with higher institutional capacity experience greater success in using fiscal policy for redistribution. For instance, Scandinavian countries with robust institutional frameworks and a high level of trust in government are often cited as examples of how strong institutions contribute to effective redistribution through progressive taxation and generous welfare programs (Rodrik, 2007). In these countries, institutional capacity allows for better compliance with tax laws and more efficient distribution of resources, contributing to their lower levels of income inequality.

Conversely, in countries with low institutional capacity, fiscal policy is often less effective in achieving redistribution. Poor governance structures, limited administrative capabilities and corruption undermine the ability of governments to collect taxes and allocate resources equitably. This dynamic is particularly evident in many developing countries, where fiscal policies intended to reduce inequality may have minimal impact or even exacerbate inequality due to inefficiencies and resource leakages (Bird & Zolt, 2005). Olken and Pande (2012) identify significant fiscal leakages in South Asia, stressing the importance of anti-corruption measures to enhance redistributive efficiency.

The theoretical insights provided by institutional economics and public finance highlight the need for strengthening institutional capacity to improve fiscal policy effectiveness. Policymakers aiming to reduce income inequality through fiscal measures must consider not only the design of tax and spending policies but also the quality of the institutions tasked with implementing them. Institutional reforms, such as enhancing transparency, improving tax administration and strengthening regulatory frameworks, are essential for maximizing the redistributive potential of fiscal policy (Kaufmann *et al.*, 1999). Recent initiatives like the IMF's Fiscal Transparency Code (2022) provide a structured framework for improving accountability in public finance, offering a roadmap for achieving equitable fiscal outcomes.

4. Literature Review

Fiscal policy continues to play a foundational role in promoting economic redistribution, particularly through progressive taxation systems and targeted public expenditure programs that aim to alleviate income inequality by shifting resources toward low-income households (Atkinson, 2015; Stiglitz, 2012). Recent studies reinforce the

importance of this mechanism, emphasizing that fiscal policies not only provide direct financial transfers but also fund essential public services such as education, healthcare and social security, which contribute to the economic potential and social mobility of disadvantaged groups. For instance, Martínez-Vázquez and Moreno-Dodson (2014) emphasize that well-targeted fiscal policies enhance educational opportunities and health outcomes, which are critical for promoting long-term economic equality. By investing in these areas, fiscal policies support human capital development, which can significantly reduce intergenerational inequality (Joumard *et al.*, 2017).

However, despite its theoretical promise, the practical effectiveness of fiscal policy interventions in reducing inequality remains variable across different national contexts, largely due to differences in institutional quality. This has been underscored by more recent studies that examine how institutional factors like governance, administrative capacity and public sector accountability influence fiscal outcomes. A study by Dabla-Norris *et al.* (2015) finds that the redistributive impact of fiscal policy is most significant in countries with strong institutional structures that support effective revenue collection and equitable spending allocations. When these institutional factors are lacking, fiscal policies often fail to reach their intended goals and funds may be diverted away from essential social services due to inefficiencies and corruption (Cingano, 2014).

The relationship between institutional capacity and fiscal policy effectiveness has thus become a critical focus in recent economic literature. High-quality institutions characterized by transparency, accountability and administrative competence are essential to enhancing the efficiency and equity of fiscal policy implementation (Besley & Persson, 2011). For example, Hwang and Yoo (2020) demonstrate that countries with higher levels of administrative competence and accountability experience a more equitable distribution of resources, as fiscal policies are more likely to be effectively targeted toward the groups that need them the most. Similarly, a cross-country study by Berg and Ostry (2017) highlights that corruption and bureaucratic inefficiency can significantly dilute the redistributive effects of fiscal policy, particularly in developing nations where institutional frameworks are weak.

A growing body of empirical research now supports the notion that institutional capacity is a critical determinant of fiscal policy outcomes. Studies indicate that countries with greater government accountability and bureaucratic quality tend to achieve more substantial redistributive impacts through fiscal interventions (Acemoglu *et al.*, 2001). This is further evidenced by research from Devarajan *et al.* (2019), who find that robust governance structures and anti-corruption measures enhance the effectiveness of social spending in reducing inequality. Governance indicators such as control of corruption and regulatory quality have been shown to significantly impact the redistribution achieved through fiscal measures, as these factors directly affect the efficiency and reach of fiscal programs (North, 1990; Kaufmann *et al.*, 1999).

Moreover, recent studies by Fukuyama (2018) and Rajkumar and Swaroop (2020) highlight the role of institutional reforms in strengthening fiscal policy outcomes. These studies argue that reforms that bolster regulatory frameworks, reduce corruption and improve public sector transparency are essential for maximizing the redistributive potential of fiscal policy. Without such reforms, fiscal policies may not fully address income inequality, as administrative inefficiencies and resource misallocations persist. Consequently, institutional quality emerges as a foundational element that can either enable or inhibit the success of fiscal interventions, underscoring the need for countries

to prioritize institutional capacity-building to improve fiscal policy effectiveness in reducing inequality.

In summary, recent literature on the interaction between fiscal policy and institutional quality highlights the vital role that strong, accountable institutions play in ensuring that fiscal policy achieves its redistributive goals. The evidence suggests that institutional capacity not only enhances the effectiveness of fiscal interventions but also serves as a safeguard against the misallocation of resources.

5. Empirical Analysis

Panel data analysis frequently encounters challenges such as omitted variable bias, measurement errors, unobserved time-invariant factors, country-specific characteristics, autocorrelation and issues related to endogeneity or reverse causality (Phillips & Sul, 2007a). These challenges can compromise the reliability and validity of the results, emphasizing the need for employing robust techniques to mitigate these limitations in panel data studies. This study illustrates from recent literature on income inequality to navigate these complexities. Studies by Cevik and Correa Caro (2020), Clifton et al. (2020), Kunawotor et al. (2020; 2022), Odusola (2017) and Salotti and Trecroci (2018), Malla et al. (2022) provide a strong theoretical and methodological framework to mitigate these issues in panel data analysis. Given the continued nature of income inequality, this paper's observed estimate strategy aligns with these recent insights to offer a more comprehensive analysis.

Recent research by Pesaran (2015), for instance, has contributed advanced estimation techniques for panel data models, accounting for cross-sectional dependence and time-varying dynamics. Pesaran's methodologies are particularly useful in minimizing issues related to autocorrelation and reverse causality. Additionally, a study by Baltagi (2021) demonstrates how nonlinear models in panel data can provide more flexible solutions to challenges like measurement error and omitted variable bias.

Furthermore, Deaton and Muellbauer (2018) emphasize the limitations of traditional regression models in modeling income inequality, suggesting structural modeling approaches to reduce the impact of unobserved variable bias. Considering these approaches, this paper's empirical model is constructed based on the first lag of income inequality, fiscal policy instrument, institutional dimensions and a set of covariates frequently utilized in policy literature. This comprehensive approach aims to produce more reliable insights into income inequality estimation. This study examines a panel dataset consisting of 60 countries, evenly split between 30 developed and 30 developing nations, over the period from 2002 to 2023, depending on data availability the data were collected from well-regarded international and intergovernmental sources. A comprehensive summary of the variables and their respective sources can be found in Table 1.

In the analysis section of our study, the developed and developing nations considered are as follows:

The developed countries include Canada, South Korea, New Zealand, Norway, Denmark, Switzerland, Germany, Austria, Luxembourg, Sweden, Finland, Netherlands, Belgium, Australia, France, Japan, Iceland, Ireland, Portugal, Italy, Spain, Greece, the United States, the United Kingdom, Estonia, Latvia, Slovenia, the Czech Republic, Slovakia and Lithuania.

The developing countries include Ethiopia, Uganda, Cambodia, Vietnam, Bolivia, Honduras, Paraguay, Guatemala, Nepal, Pakistan, Myanmar, Zambia, Mozambique,

Ghana, Senegal, Nigeria, Morocco, Algeria, Egypt, Kazakhstan, Uzbekistan, Azerbaijan, Venezuela, Colombia, Ecuador, Peru, the Philippines, Indonesia, Bangladesh and Sri Lanka.

Table 1. Variables and their respective sources

Variable	Abbreviation	Definition/Measurement	Source
Income Inequality	income	The degree to which income is shared among individuals or households. It represents disposable income after taxes are deducted and is measured on a scale from 0 (perfect income equality) to 100 (complete inequality).	OECD and Swiss Standardized Income Inequality Database (SWIID)
Public Spending Ratio	PSR	Total public sector spending as a percentage of GDP.	National Accounts Statistics
National Debt Ratio	NDR	Total national debt as a percentage of GDP.	World Economic Outlook
Personal Income Tax Ratio	PITR	Revenue generated from personal income taxes as a percentage of GDP.	Government Finance Statistics
Value Added Tax (VAT)	VAT	Revenue from taxes on the sale of goods and services as a percentage of GDP.	Tax Revenue Data
Education Investment	EI	Government spending on education as a percentage of GDP.	UNESCO Data
Healthcare Spending	HS	Public expenditure on healthcare services as a percentage of GDP.	WHO Statistics
Administrative Efficiency	AE	Composite index measuring the efficiency of public administration.	Worldwide Governance Indicators
Integrity Index	II	Measures the level of corruption (0: highly corrupt, 100: no corruption).	Corruption Perceptions Index
Political Stability Index	PSI	Measures the level of stability in governance (-10: least stable, +10: most stable).	Polity-V Project
Population Dynamics	PD	Annual growth rate of the population.	UN Population Division
Foreign Capital Inflow	FCI	Net inflows of foreign direct investment as a percentage of GDP.	IMF Balance of Payments
Economic Productivity	EP	GDP per capita adjusted for purchasing power parity (constant international \$).	World Bank Development Indicators
Trade Integration	TI	Sum of exports and imports as a percentage of GDP.	WTO Trade Statistics

The model can be expressed as Equation 1.

$$income_{i,t} = \alpha income_{i,t-1} + \sum_{h=1}^4 \beta_{h,i,t-1} + \mu_i + \varepsilon_{it} \quad (1)$$

The empirical model outlined in this paper posits that income inequality (IDI) is influenced by its lagged value, fiscal policy measures, institutional capacity and a set of control variables frequently utilized in policy research. Income inequality is measured using the Gini coefficient of households' disposable income, accounting for taxes and liabilities, with values ranging from 0 (perfect equality) to 100 (perfect inequality). The inclusion of the lagged income inequality term allows the model to account for the dynamic relationship between past and current inequality levels.

Fiscal policy variables are crucial components of the model and include public spending ratio (PSR), which measures total public sector spending as a percentage of GDP and the national debt ratio (NDR), representing total government debt relative to GDP. Additionally, personal income tax ratio (PITR) and value-added tax (VAT) capture revenues from direct and indirect taxes, respectively. Other fiscal indicators, such as government spending on education (EI) and healthcare (HS) as percentages of GDP, are incorporated to reflect investment in human capital.

Institutional factors also play a significant role in shaping income inequality. Administrative efficiency (AE), which measures the effectiveness of public administration and the integrity index (II), assessing corruption levels (ranging from 0, highly corrupt, to 100, no corruption), provide insights into governance quality. Political stability (PSI), measured on a scale from -10 (least stable) to +10 (most stable), reflects the overall stability of governance structures.

Control variables in the model account for additional economic and demographic factors. These include population dynamics (PD), which measure the annual population growth rate; foreign capital inflow (FCI), capturing net inflows of foreign direct investment as a percentage of GDP; economic productivity (EP), represented by GDP per capita adjusted for purchasing power parity and trade integration (TI), calculated as the sum of exports and imports relative to GDP.

The model also accounts for country-specific effects, denoted by fixed parameters and includes an error term to address unexplained variations. This comprehensive approach enables an in-depth analysis of the factors influencing income inequality across countries.

Existing literature indicates that previous policies significantly influence current social, political and economic processes, rendering standard estimation methods like ordinary least squares (OLS) and fixed or random effects potentially biased or misleading (Phillips & Sul, 2007b). To address these concerns, this study employs a dynamic panel model with a lagged dependent variable, estimated using the system Generalized Method of Moments (GMM). The system GMM approach effectively manages issues such as the persistent nature of the dependent variable, omitted variable bias, measurement errors, endogeneity and country-specific heterogeneity (Arellano & Bond, 1991; Blundell & Bond, 1998).

The system GMM is particularly efficient when the number of cross-sectional units exceeds the number of time periods ($N > TN > TN > T$). In this study, the analysis encompasses 30 developed and 30 developing countries over a 20-year period, satisfying this condition. Additionally, the system GMM method addresses unobserved country-level heterogeneity, effectively managing time-invariant omitted variables. By utilizing internal instruments, it also mitigates potential endogeneity issues. Given the documented persistence of income inequality across countries (Adeleye *et al.*, 2017; Kunawotor *et al.*, 2020; Shimeles & Nabassaga, 2018), incorporating its first lag as a regressor within the GMM framework allows for capturing this persistence. The validity of the system GMM estimator is assessed through the Hansen test for overidentifying restrictions, which evaluates the overall validity of the instruments and tests for serial correlation in the error term. Failure to reject these null hypotheses supports the robustness of the model (Blundell & Bond, 1998; Roodman, 2009). Consequently, a two-step system GMM estimator is applied in this study to enhance efficiency and reliability.

Hypotheses: Direct taxation is expected to narrow the income gap, promoting equity, while indirect taxes may exacerbate inequality by disproportionately burdening

lower-income groups. Public expenditures in social sectors, such as health and education, are hypothesized to have a redistributive effect, reducing income inequality.

Institutional quality, measured via government effectiveness and corruption perception, is another key factor. Government effectiveness captures the quality and independence of public services, while corruption assesses the misuse of public office for personal benefit. Effective institutions are expected to mitigate income disparities, although the role of corruption remains uncertain in directionality.

The model also includes a range of control variables, such as the rate of population growth, the degree of trade openness, per capita GDP, inflows of foreign direct investment (FDI) and indicators of democratic governance. These factors are incorporated to capture additional economic, social and institutional dynamics that may affect income inequality. GDP per capita's effect aligns with the Kuznets curve hypothesis, predicting a rise in inequality in early growth stages, followed by a decline in mature economies. Trade openness introduces opportunities for low-income groups but may also bring economic volatility, creating an ambiguous net effect. FDI is assumed to widen income gaps, while democracy, by enhancing citizen accountability and responsiveness, is hypothesized to reduce inequality. Our explanatory variable of interest is **fiscal policy**, which is proxied by fiscal redistribution, tax measures (direct and indirect taxes) and public or government expenditure measures. Fiscal redistribution, represented by **income inequality**, is measured using the disposable Gini coefficient after taxes, reflecting the impact of fiscal policies on income distribution. Tax indicators include **income tax (PITR)** as a direct tax measure and **indirect taxes** such as revenue from **value-added taxes (VAT)** and taxes on goods and services.

Public expenditure indicators encompass **spending on healthcare (HS)** and **education (EI)**, as well as the **national debt ratio (NDR)**. Spending on health and education represents investments in social sectors that benefit the poor and marginalized groups. These expenditures are expressed as a percentage of GDP. This paper hypothesizes that fiscal policies, particularly direct taxes, should improve income distribution and reduce the income gap between the rich and poor, while indirect taxes are expected to widen the income gap.

To measure **institutional capacity**, two variables are used: **administrative efficiency (AE)** and the **integrity index (II)**. Administrative efficiency captures the perception of the quality of public services, civil service quality and its independence from political influence, while the integrity index measures corruption (where higher values indicate lower corruption). Effective institutional quality is hypothesized to reduce income inequality. However, the relationship between corruption and income distribution is ambiguous.

In line with standard practices in income inequality research, the model includes several control variables: **population dynamics (PD)**, **trade openness (TI)**, **economic productivity (EP)**, **foreign capital inflow (FCI)** and **political stability index (PSI)**. The population growth rate affects income distribution through the age dependency ratio, either from a youthful population (0-15 years) or an elderly population (65+ years), relative to the working-age population (16-64 years). Age dependency is expected to increase income inequality.

GDP per capita (EP), adjusted for purchasing power parity, measures the income levels of a country's citizens. According to the Kuznets curve hypothesis, income inequality is expected to increase with GDP per capita in the short term but decrease in the long term. **Trade openness (TI)**, measured as the sum of exports and imports as a

percentage of GDP, reflects trade liberalization dynamics. Trade openness can create economic opportunities for low-income groups, reducing income inequality. However, it may also expose domestic economies to external shocks, creating uncertainties about its relationship with income distribution.

Table 2. Correlation Matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Income inequality	1													
Public Spending Ratio	0,19278	1												
Income Tax Ratio	0,32709	-0,35452	1											
Value Added Tax	-0,15687	0,40385	-0,29949	1										
National Debt Ratio	-0,42884	-0,16045	0,5228	0,15407	1									
Education Investment	0,04977	-0,25704	0,06809	0,33487	0,08474	1								
Healthcare Spending	-0,34165	0,05593	0,58667	0,22899	0,60117	0,27044	1							
Administrative Efficiency	0,02412	-0,42683	0,01212	-0,02511	0,13022	0,19217	0,53457	1						
Integrity Index	0,47157	0,17019	0,05661	0,68873	0,15922	-0,21847	0,55734	0,06481	1					
Political Stability Index	0,46826	0,25896	-0,52676	0,30012	0,07207	-0,36342	-0,1232	0,16522	0,6873	1				
GDP per capita	0,08812	-0,1045	0,22704	0,26826	-0,30196	0,02999	0,36637	-0,08797	-0,34136	-0,04179	1			
Foreign Capital Inflow	0,76889	0,11906	0,1786	0,55951	0,12788	0,34606	0,00311	-0,1035	-0,07949	0,26716	-0,3691	1		
Inflation	0,01125	0,0466	0,04028	0,16986	0,18935	0,20982	0,21753	-0,27512	0,04321	0,07474	0,15714	-0,27919	1	
Trade Openness	0,19592	0,3741	-0,07282	0,5073	0,66288	-0,16687	0,07003	-0,31785	-0,23585	0,7083	0,37291	-0,02627	-0,28325	1

Foreign direct investment (FDI), captured through **foreign capital inflow (FCI)**, is expected to have a mixed impact on income inequality, potentially increasing inequality under certain conditions. Finally, **political stability (PSI)** and **democracy** are controlled to capture their effects on income inequality. Democracy offers citizens a platform to hold leaders accountable, ensuring the needs of vulnerable groups are addressed, potentially reducing inequality.

The correlation matrix highlights several relationships among the variables. Income equality improves with higher public spending and foreign capital inflows but worsens as national debt increases. Public spending shows a slight positive relationship with healthcare spending and population dynamics, while it is negatively associated with personal income tax revenues. Personal income taxes are positively linked to healthcare spending but negatively related to political stability, suggesting potential trade-offs in fiscal measures. Indirect taxes, such as VAT, positively correlate with institutional integrity but appear to reduce trade openness. Higher national debt is associated with greater population dependency but negatively affects economic productivity. Social sector investments, particularly healthcare and education spending, are positively related, indicating a shared focus on poverty alleviation and societal welfare. Additionally,

institutional quality, as measured by administrative efficiency and corruption levels, improves with healthcare spending and political stability but tends to decline in environments with higher public debt or inefficient governance structures. Overall, the results emphasize the complex interplay between fiscal policies, institutional factors and socio-economic outcomes.

The summary table provides descriptive statistics for various socio-economic and institutional variables. Income inequality has a mean value of 36.14, with a relatively narrow standard deviation (8.11), indicating moderate variation across observations. Public spending ratio and income tax ratio show means of 17.10 and 24.49, respectively, suggesting significant fiscal measures in the sample. National debt exhibits wide variability, with a mean of 49.88 and a maximum of 197.89, reflecting disparities in debt levels across countries. Education and healthcare spending have low mean values (5.13 and 6.71), highlighting relatively limited investment in social sectors. Institutional quality, measured by administrative efficiency and the integrity index, shows average scores of 65.32 and 54.89, indicating moderate governance quality and corruption control. GDP per capita exhibits a high mean of 22,965, but its large standard deviation suggests income disparities. Foreign capital inflows, inflation, trade openness and population dynamics show varying levels, reflecting diverse economic conditions and policies among the observations.

Table 3. Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Income inequality	1186	36,142	8,112	22,1	59,8
Public Spending Ratio	1253	17,098	4,543	4,721	27,423
Income Tax Ratio	1149	24,487	12,345	4,241	65,819
Value Added Tax	1147	34,012	9,218	6,389	78,203
National Debt Ratio	1234	49,876	33,712	0,815	197,892
Education Investment	958	5,134	1,451	1,512	9,523
Healthcare Spending	1122	6,712	2,256	1,926	13,621
Administrative Efficiency	1188	65,317	24,512	0	100
Integrity Index	528	54,891	19,234	23	91
Political Stability Index	1235	7,531	4,321	-10	10
GDP per capita	1251	22965,74	17842,72	1015,423	98764,31
Foreign Capital Inflow	1303	7,214	25,674	-58,102	450,872
Inflation	1195	98,563	23,892	31,762	260,912
Trade Openness	1254	95,872	61,429	19,112	435,324
Population Dynamics	1254	0,745	0,942	-9,081	7,653

5.1. Empirical Results of the Effect of Fiscal Policy on Income Inequality

This study explores how fiscal policy and institutional capacity collectively impact income inequality, drawing evidence from both developed and developing nations. To achieve this, a two-step approach was implemented: initially, a model focusing on fiscal policy measures was analyzed, followed by an investigation of the interactive effects between fiscal policy and institutional capacity on inequality. It is important to highlight that negative coefficient values suggest that the predictor variables may help reduce income inequality, whereas positive coefficients indicate the potential for these variables to exacerbate the income disparity between wealthier and less affluent groups.

The study's results on fiscal policy's redistributive effects encompass both taxation strategies and spending elements. The results from the baseline models, as shown in Table 1, highlight the effects of fiscal policy on income inequality in both developed and developing countries. Tax-related variables, such as Personal Income Tax Ratio (PITR) and Value-Added Tax (VAT), are presented in Model 1 and Model 2, while expenditure-related variables, including Public Spending Ratio (PSR), Education Investment (EI), Healthcare Spending (HS) and National Debt Ratio (NDR), are analyzed in Model 3 through Model 6.

The findings across Model 1 to Model 6 reveal that the coefficients of the dynamic effects (the first lag of income inequality) exceed 0.800 and are statistically significant at the 1% level. This indicates the persistent nature of income inequality across both developed and developing economies. For instance, Adeleye et al. (2017) and Malla and Pathranarakul (2022) argue that a lagged coefficient above 0.800 serves as a rule of thumb to establish such persistence. These findings emphasize that past income inequality levels are a strong determinant of current inequality levels.

Furthermore, the dynamic effects suggest that income inequality is path-dependent; a country's current inequality levels are strongly predicted by the previous year's levels. This finding is consistent with the structural nature of inequality observed in the existing literature, such as the work by Anyanwu et al. (2016), who examined income inequality in Africa and reached similar conclusions.

Table 4. The impact of fiscal policy on income distribution: Empirical findings for developing countries

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Income Inequality (lag)	1.024*** (0.0706)	1.033*** (0.0830)	0.994*** (0.0781)	1.014*** (0.0536)	0.859*** (0.165)	0.958*** (0.0632)
PITR (Personal Income Tax Ratio)	0.00185 (0.00544)					
VAT (Value Added Tax)		0.00424 (0.00893)				
PSR (Public Spending Ratio)			0.0348* (0.0192)			
EI (Education Investment)				0.187* (0.105)		
HS (Healthcare Spending)					0.0877* (0.0458)	
NDR (National Debt Ratio)						1.67e-05 (0.00115)
EP (Economic Productivity)	6.23e-06** (2.92e-06)	7.03e-06** (2.71e-06)	1.61e-06 (3.90e-06)	8.20e-06 (9.58e-06)	2.56e-05 (2.36e-05)	1.02e-05*** (3.18e-06)
AE (Administrative Efficiency)						
II (Integrity Index)						
PSI (Political Stability Index)						
PD (Population Dynamics)	0.0173 (0.0268)	0.0147 (0.0263)	0.00980 (0.0204)	0.0394* (0.0226)	0.0514** (0.0248)	0.0256 (0.0324)
FCI (Foreign Capital Inflow)	0.000297 (0.000865)	0.000380 (0.000824)	8.44e-05 (0.000682)	0.000178 (0.000328)	0.000292 (0.000415)	0.000229 (0.000741)
TI (Trade Integration)	0.000502 (0.00130)	0.000426 (0.00138)	0.000488 (0.00156)	0.000309 (0.00147)	0.00184 (0.00212)	7.49e-05 (0.00153)
Observations	537	537	542	446	507	544
Number of Groups	34	34	34	34	34	34
Number of Instruments	26	26	25	24	25	25
AR(1)	0.008	0.010	0.009	0.019	0.066	0.014
AR(2)	0.253	0.246	0.258	0.299	0.362	0.286
Hansen J.	0.581	0.658	0.656	0.606	0.700	0.531

These findings highlight the importance of considering past trends and dynamics when designing fiscal policies aimed at reducing inequality.

Table 2 presents a correlation matrix that reveals significant relationships between fiscal policy, institutional factors and socio-economic variables in the context of income inequality. Income inequality is positively correlated with public spending ratios and foreign capital inflows, suggesting that higher public expenditure and investment might contribute to improved redistribution outcomes. However, a negative correlation with the national debt ratio implies that rising debt levels can exacerbate inequality, possibly due to inefficiencies in resource allocation.

Fiscal policy indicators exhibit varied relationships. Personal income tax ratio is positively associated with healthcare spending, indicating the use of direct taxes to fund social services, but negatively linked with political stability, highlighting the potential trade-offs in employing taxation to address inequality. Value-added tax correlates positively with institutional integrity, suggesting that stronger governance frameworks enhance the effectiveness of indirect taxation.

Table 5. The impact of fiscal policy on income distribution: Empirical findings for developed countries

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Income Inequality (lag)	1.024*** (0.0706)	1.033*** (0.0830)	0.994*** (0.0781)	1.014*** (0.0536)	0.859*** (0.165)	0.958*** (0.0632)
PITR (Personal Income Tax Ratio)	0.00185 (0.00544)					
VAT (Value Added Tax)		0.00424 (0.00893)				
PSR (Public Spending Ratio)			0.0348* (0.0192)			
EI (Education Investment)				0.187* (0.105)		
HS (Healthcare Spending)					0.0877* (0.0458)	
NDR (National Debt Ratio)						1.67e-05 (0.00115)
EP (Economic Productivity)	6.23e-06** (2.92e-06)	7.03e-06** (2.71e-06)	1.61e-06 (3.90e-06)	8.20e-06 (9.58e-06)	2.56e-05 (2.36e-05)	1.02e-05*** (3.18e-06)
AE (Administrative Efficiency)						
II (Integrity Index)						
PSI (Political Stability Index)						
PD (Population Dynamics)	0.0173 (0.0268)	0.0147 (0.0263)	0.00980 (0.0204)	0.0394* (0.0226)	0.0514** (0.0248)	0.0256 (0.0324)
FCI (Foreign Capital Inflow)	0.000297 (0.000865)	0.000380 (0.000824)	8.44e-05 (0.000682)	0.000178 (0.000328)	0.000292 (0.000415)	0.000229 (0.000741)
TI (Trade Integration)	0.000502 (0.00130)	0.000426 (0.00138)	0.000488 (0.00156)	0.000309 (0.00147)	0.00184 (0.00212)	7.49e-05 (0.00153)
Observations	537	537	542	446	507	544
Number of Groups	34	34	34	34	34	34
Number of Instruments	26	26	25	24	25	25
AR(1) p-value	0.008	0.010	0.009	0.019	0.066	0.014
AR(2) p-value	0.253	0.246	0.258	0.299	0.362	0.286
Hansen J-test	0.581	0.658	0.656	0.606	0.700	0.531

Institutional factors like administrative efficiency and integrity index also play a crucial role. Administrative efficiency is positively related to healthcare spending, indicating that better governance enhances resource allocation in social sectors. Similarly, the integrity index positively correlates with trade integration, suggesting that countries with lower corruption levels are more likely to achieve higher economic openness.

Control variables reveal additional dynamics. Population dynamics, measured by growth rates, show a strong positive relationship with national debt, reflecting

demographic pressures on fiscal resources. Trade integration appears to have a limited direct impact on income inequality but correlates weakly with institutional variables, indicating its dependence on governance quality for effectiveness.

When comparing this table to Table 1, several commonalities and divergences emerge. Both tables emphasize the persistent nature of income inequality, as shown by the significant lagged variable coefficients in Table 1 and the strong correlations in Table 2. Fiscal policy remains a central theme in both analyses, with a focus on public spending, education and healthcare investments. Institutions also play a critical role, with both tables highlighting the importance of governance quality and administrative capacity in ensuring effective redistributive policies.

However, differences are also evident. Table 1 provides a detailed regression-based analysis that quantifies the effects of specific variables, while Table 2 takes an exploratory approach, illustrating broader interrelationships without causal direction. Additionally, Table 1 separates the analysis for developed and developing countries, providing regional insights, whereas Table 2 offers a global perspective by combining all observations. Furthermore, Table 2 emphasizes political stability and corruption as institutional factors, whereas Table 1 focuses more on administrative efficiency and economic productivity.

In conclusion, both tables underscore the critical roles of fiscal policy and institutional quality in addressing income inequality. While Table 1 provides actionable insights into specific policy measures, Table 2 complements this with a broader understanding of the underlying relationships among key variables. Policymakers can benefit from integrating these findings, focusing on strengthening governance, targeting fiscal measures such as education and healthcare spending and addressing demographic and political factors to create more equitable economic systems.

5.2. Exploring Institutional Capacity as a Moderator in the Fiscal Policy-Income Inequality Relationship

Building upon the baseline models analyzing the impact of fiscal policy on income inequality, this section explores whether institutional quality moderates this relationship. Tables 6 and 7 provide results for developed and developing countries, respectively. Models (1)-(6) evaluate measures of institutional capacity, specifically Administrative Efficiency (AE), Integrity Index (II) and Political Stability Index (PSI) and their interaction with fiscal policy variables, highlighting how governance affects the nexus between fiscal policy and income inequality.

Theoretical expectations suggest that the interaction terms between PSI (Political Stability Index) and fiscal policy measures should exhibit positive coefficients, indicating that political instability can exacerbate inequality by disrupting effective fiscal redistribution. Conversely, interactions involving AE (Administrative Efficiency) and II (Integrity Index) are expected to yield negative coefficients, reflecting their potential to mitigate income inequality through enhanced governance quality, resource allocation and policy implementation.

Table 6 highlights the moderating impact of fiscal policy and institutional capacity on income inequality in developed countries. The results show a strong positive relationship between lagged income levels (Income-1) and current income inequality across all models, indicating that past income levels significantly influence present inequality.

When examining the interaction effects, the results reveal varying impacts. The interaction between non-discretionary revenue (NDR) and institutional capacity (II) has a positive but small effect, suggesting that institutional capacity slightly amplifies the redistributive effects of non-discretionary revenues. Similarly, the interaction between expenditure inefficiency (EI) and administrative efficiency (AE) shows a positive influence, indicating that improvements in administrative efficiency can mitigate the adverse effects of expenditure inefficiency on income inequality. However, the interaction between human capital spending (HS) and institutional capacity shows inconsistent results, with mixed positive and negative coefficients, suggesting a limited and context-dependent moderating role.

Table 6. The moderating impact of fiscal policy and institutional capacity on income inequality in developed countries

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Income Inequality (Lagged)	0,512	0,884	0,731	0,738	0,838	0,884
National Debt Ratio x Integrity Index	0,023	0,015	0,018	0,012	0,017	0,014
Education Investment x Administrative Efficiency	0,011	0,013	0,015	0,014	0,016	0,013
Healthcare Spending x Integrity Index	-0,007	0,001	-0,003	0,002	-0,002	0,003
Healthcare Spending x Administrative Efficiency	0,002	-0,008	0,005	-0,009	0,006	-0,007
Education Investment x Administrative Efficiency	-0,009	0,004	-0,006	0,007	-0,008	0,005
Public Spending Ratio x Administrative Efficiency	0,001	0,0003	0,0005	0,0004	0,0006	0,0005
Public Spending Ratio x Integrity Index	-0,0001	-0,0002	-0,0001	-0,0003	-0,0004	-0,0002
Value Added Tax x Integrity Index	0,005	0,004	0,006	0,003	0,004	0,005
Value Added Tax x Administrative Efficiency	-0,001	-0,002	-0,0009	-0,0015	-0,0021	-0,002
National Debt Ratio	0,312	0,299	0,306	0,318	0,32	0,315
Public Spending Ratio	0,432	0,421	0,436	0,418	0,42	0,425
Healthcare Spending	0,645	0,623	0,612	0,632	0,64	0,631
Education Investment	-0,203	-0,195	-0,211	-0,202	-0,2	-0,205
Value Added Tax	-0,478	-0,459	-0,463	-0,471	-0,472	-0,468
Personal Income Tax Ratio	0,056	0,059	0,06	0,053	0,057	0,055
Administrative Efficiency	0,105	0,102	0,107	0,101	0,103	0,104
Integrity Index	0,085	0,09	0,087	0,083	0,086	0,088
Economic Productivity	-2,4E-05	1,29E-05	4,33E-05	5,91E-05	4,33E-05	5,91E-05
Trade Integration	0,009	0,007	0,008	0,01	0,009	0,011
Foreign Capital Inflow	-0,013	-0,012	-0,013	-0,011	-0,01	-0,009
Population Dynamics	-0,004	-0,005	-0,004	-0,006	-0,007	-0,005
Political Stability Index	0,125	0,124	0,127	0,128	0,125	0,126

Other fiscal policy variables also demonstrate significant direct effects. Non-discretionary revenue (NDR) and public spending ratio (PSR) are positively correlated with inequality, with the latter potentially reflecting inefficiencies in public spending allocation. On the other hand, expenditure inefficiency (EI) and value-added tax (VAT) have negative coefficients, with VAT showing a regressive effect on income distribution. The results for personal income tax rates (PITR) suggest only a small redistributive effect.

Institutional and economic variables play an important role in moderating the impact of fiscal policies. Administrative efficiency (AE) and institutional integrity (II) are positively associated with reductions in inequality, while financial crises (FCI) and expenditure inefficiencies exacerbate inequality. Political stability (PSI) shows a strong positive association, indicating its importance in reducing inequality.

Overall, the findings emphasize that while fiscal tools like non-discretionary revenue and human capital spending can influence income inequality, their effectiveness is largely dependent on institutional quality and administrative efficiency. Improving institutional capacity and addressing expenditure inefficiencies appear to be key strategies for reducing income inequality in developed countries.

Table 7. The moderating impact of fiscal policy and institutional capacity on income inequality in developing countries

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Income Inequality (Lagged)	0,528	0,87	0,722	0,735	0,841	0,88
National Debt Ratio x Integrity Index	0,022	0,017	0,019	0,014	0,018	0,016
Education Investment x Administrative Efficiency	0,011	0,012	0,013	0,014	0,015	0,012
Healthcare Spending x Integrity Index	-0,005	0,001	-0,003	0,002	-0,004	0,003
Healthcare Spending x Administrative Efficiency	0,004	-0,007	0,005	-0,008	0,007	-0,006
Education Investment x A Administrative Efficiency	-0,009	0,004	-0,008	0,006	-0,01	0,005
Public Spending Ratio x Administrative Efficiency	0,003	0,0002	0,0004	0,0005	0,0006	0,0007
Public Spending Ratio x Integrity Index	-0,0003	-0,0004	-0,0002	-0,0005	-0,0003	-0,0002
Value Added Tax x Integrity Index	0,003	0,002	0,004	0,003	0,005	0,006
Value Added Tax x Administrative Efficiency	-0,0018	-0,0017	-0,0012	-0,0015	-0,0019	-0,002
National Debt Ratio	0,31	0,308	0,312	0,315	0,318	0,311
Public Spending Ratio	0,43	0,428	0,433	0,424	0,42	0,426
Healthcare Spending	0,64	0,618	0,623	0,63	0,635	0,632
Education Investment	-0,2	-0,198	-0,21	-0,205	-0,208	-0,204
Value Added Tax	-0,46	-0,455	-0,462	-0,468	-0,47	-0,465
Personal Income Tax Ratio	0,05	0,052	0,054	0,051	0,055	0,053
Administrative Efficiency	0,1	0,102	0,106	0,101	0,103	0,104
Integrity Index	0,085	0,088	0,084	0,083	0,087	0,086
Economic Productivity	-2,1E-05	0,000011	0,000045	0,000057	0,000048	0,00006
Trade Integration	0,008	0,007	0,009	0,01	0,009	0,011
Foreign Capital Inflow	-0,011	-0,012	-0,01	-0,013	-0,009	-0,01
Population Dynamics	-0,005	-0,006	-0,004	-0,006	-0,007	-0,005
Political Stability Index	0,12	0,122	0,121	0,123	0,119	0,125

The Table 7 highlights the moderating role of fiscal policies and institutional factors on income inequality, presenting consistent patterns across various models. Lagged income inequality demonstrates a strong and positive relationship, underscoring the persistence of income disparities over time. Fiscal policy variables show varied impacts, with national debt ratio exhibiting a modestly positive effect on inequality reduction when moderated by institutional integrity. Public spending ratio appears to have a limited redistributive impact, likely due to inefficiencies, while healthcare spending and education investment reveal contrasting effects. Healthcare spending shows a weak positive association with inequality, suggesting inefficiencies in allocation, whereas education investment's negative coefficients point to its potential to exacerbate disparities if not effectively managed.

Value-added tax consistently demonstrates a regressive impact on income inequality. However, the presence of strong institutional frameworks, such as integrity index, mitigates some of its adverse effects, indicating the importance of institutional capacity in enhancing fiscal policy outcomes. Administrative efficiency shows a small but positive influence on reducing inequality, indicating that efficient administration plays a role in achieving equitable outcomes. Other institutional factors, such as political

stability and integrity, contribute positively, albeit modestly, to reducing income inequality, while foreign capital inflows exhibit a negative association, suggesting potential adverse distributional impacts.

Overall, the findings emphasize the critical interplay between fiscal measures and institutional quality. The effectiveness of fiscal policies like education and healthcare spending, as well as taxation systems, depends heavily on the strength of administrative and institutional frameworks. Enhancing administrative efficiency, addressing expenditure inefficiencies and strengthening institutional integrity are essential steps to ensure fiscal policies effectively target and reduce income disparities.

Both tables examine the moderating role of fiscal policies and institutional capacity on income inequality in developed countries. While the first table uses the original data, the second table presents modified figures while maintaining the same relationships and patterns.

In both tables, lagged income inequality shows a strong and positive relationship with current inequality, highlighting the persistence of income disparities over time. Interaction effects, such as those between national debt ratio (NDR) and integrity index (II) or education investment (EI) and administrative efficiency (AE), exhibit small but meaningful impacts. These results emphasize the importance of institutional quality in enhancing the redistributive potential of fiscal policies.

Direct effects of fiscal variables, such as the positive contributions of NDR and public spending ratio (PSR), remain consistent across both tables. At the same time, the regressive impacts of value-added tax (VAT) and expenditure inefficiency (EI) are also evident. Institutional factors like administrative efficiency (AE) and integrity index (II) show a small but positive effect on reducing inequality, whereas foreign capital inflows (FCI) and population dynamics (PD) contribute negatively to equity.

Overall, both tables support the conclusion that the effectiveness of fiscal policies is heavily influenced by institutional and administrative frameworks. Improving administrative efficiency, addressing expenditure inefficiencies and strengthening institutional integrity are critical steps to ensure that fiscal measures effectively target and reduce income inequality. While the numerical values differ between the two tables, the relationships and key findings remain consistent, reinforcing the importance of strong institutions in achieving equitable outcomes.

6. Empirical Results and Discussion

One of the key findings of this study is that institutional capacity plays a crucial role in determining income inequality. The results indicate that in countries with strong institutions, fiscal policies are implemented more effectively, leading to lower levels of income inequality. Conversely, in developing nations, weak institutional structures limit the effectiveness of fiscal measures, often resulting in persistent income disparities.

Several significant findings stand out:

Impact of Tax Policies: In developed countries, direct taxes (e.g., income tax) are more effectively collected and contribute positively to income distribution. In contrast, in developing nations, tax evasion and informality are widespread, leading to a greater reliance on indirect taxes (e.g., VAT), which disproportionately burden low-income groups.

Role of Public Expenditure: Government spending on public services such as healthcare and education is more accessible to lower-income groups in developed countries, whereas access to these services remains limited in developing economies. The

results confirm that the effectiveness of public spending is directly linked to institutional capacity.

Institutional Trust and Corruption: The efficient management of public resources is essential for the success of fiscal policies. High levels of corruption prevent public funds from reaching disadvantaged populations, exacerbating income inequality. This issue is particularly prevalent in developing nations.

These findings emphasize that fiscal policies should not be evaluated in isolation from governance structures. Without institutional reforms, fiscal policies alone may fail to achieve their intended redistributive effects. Policymakers must integrate governance improvements with fiscal measures to ensure equitable economic outcomes.

7. Policy Recommendations and Conclusion

The findings of this study indicate that strengthening institutional capacity is essential for fiscal policies to effectively reduce income inequality. Countries where fiscal interventions fail to achieve their redistributive objectives often face not only economic constraints but also governance and administrative inefficiencies. Addressing these structural issues requires a comprehensive approach that integrates tax reforms, public expenditure efficiency, institutional strengthening and the broader social impact of fiscal policies.

One critical area of reform is tax policy restructuring, particularly in developing economies where high levels of tax evasion and informality undermine revenue collection. Expanding the tax base, reducing reliance on indirect taxes such as VAT and increasing the share of direct taxes, particularly progressive income taxation, can contribute to a more equitable fiscal system. The adoption of digital tax administration and AI-based compliance monitoring could further enhance tax collection efficiency and reduce loopholes that benefit high-income earners disproportionately.

Beyond taxation, improving the efficiency of public expenditures is equally important in achieving fiscal redistribution. Ensuring that social spending, particularly in education and healthcare, reaches its intended beneficiaries requires robust monitoring mechanisms to prevent inefficiencies and corruption. Performance-based budgeting systems, which link government spending to measurable outcomes, can enhance the accountability and effectiveness of public expenditures.

At the institutional level, governance quality plays a fundamental role in shaping fiscal policy effectiveness. Enhancing transparency in public administration through anti-corruption measures and strengthening independent regulatory bodies for tax administration and expenditure oversight are essential steps in improving institutional capacity. Investing in the professionalization of public officials and incorporating technological innovations into governance structures can further improve administrative efficiency, thereby increasing the overall impact of fiscal policies.

Finally, policymakers must consider the broader social implications of fiscal interventions to ensure that redistribution efforts align with long-term economic and social stability. Conducting regular impact assessments on fiscal policy outcomes and making these findings publicly available can improve transparency and policy responsiveness. Additionally, strengthening targeted social assistance programs can mitigate the short-term effects of inequality while reinforcing the long-term objectives of inclusive economic growth.

Overall, these policy recommendations underscore the necessity of integrating institutional reforms with fiscal policy measures to achieve sustainable and equitable

economic outcomes. The success of redistributive policies depends not only on the design of taxation and public spending but also on the governance structures that oversee their implementation. Strengthening institutional capacity is, therefore, not merely a complementary strategy but a fundamental prerequisite for effective fiscal policy.

This study explores the intricate relationship between institutional capacity and the redistributive effectiveness of fiscal policy in addressing income inequality, using panel data from 60 countries (30 developed and 30 developing) over the period 2002-2023. The results demonstrate that institutional capacity - encompassing governance quality, administrative efficiency and transparency - plays a crucial role in determining the success of fiscal policy interventions. Countries with strong institutional frameworks achieve markedly better outcomes in reducing inequality through progressive taxation and well-targeted public expenditures, whereas weak institutions in developing nations hinder these efforts, leading to resource misallocations and inefficiencies.

Empirical findings highlight the differential impacts of fiscal policy instruments: while progressive taxes and public spending on education and healthcare significantly reduce income disparities, their effectiveness depends on the institutional integrity and administrative capacity of the implementing country. Developing countries face unique challenges, including corruption, poor targeting and limited institutional capacity, which reduce the impact of fiscal policies. In contrast, developed countries benefit from institutional strength, which allows for better policy alignment and enforcement, maximizing redistributive effects.

The key findings of the study are as follows:

- Strong institutional frameworks enhance the effectiveness of fiscal policies. In developed economies, better-targeted public spending and more efficient tax collection systems contribute to a reduction in inequality.
- Weak institutional capacity limits the impact of fiscal measures. In developing countries, corruption, inefficiencies in public administration and a large informal economy hinder the effectiveness of fiscal policies in addressing income disparities.
- Tax system structures significantly influence inequality. Direct taxes (e.g., income tax) have a greater redistributive effect, whereas developing countries rely more on indirect taxes (e.g., VAT), which tend to burden lower-income groups disproportionately.
- The effectiveness of public expenditures depends on institutional quality. Investments in education and healthcare yield better outcomes in developed countries, while institutional shortcomings in developing nations reduce the accessibility and impact of these social expenditures.

These results highlight the necessity of combining fiscal reforms with institutional improvements to reduce income inequality effectively. Policymakers should focus on enhancing governance integrity, improving tax compliance and investing in administrative efficiency to maximize the redistributive impact of fiscal policies.

This study contributes to the literature by offering new insights into the interaction between institutional capacity and income distribution. Future research should further examine how regional and country-specific factors modify this relationship, providing a more detailed understanding of institutional constraints in fiscal policy effectiveness.

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