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Public Sector Performance and Economic Misery under Fiscal Decentralization: A Simultaneous Equation Approach

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Abstract

The study examines the interdependencies between public sector efficiency, fiscal decentralization and economic misery in Pakistan using a Three-Stage Least Squares (3SLS) estimation framework. The research is driven by the theoretical aspects and relationship between the quality of governance, fiscal structure, and the macroeconomic performance, which means that the Misery Index, public sector efficiency, and fiscal decentralization are endogenous and mutually determined variables. The analysis is based on annual time-series data on Pakistan starting between 1990 and 2024, which reflects long-run structural reforms, decentralization, and macroeconomic fluctuations that the economy undergoes. The empirical evidence is a good substantiation of the fact that the greater level of efficiency in public sector has a strong impact in economic misery and thus the role of effective governance in raising the macroeconomic welfare. Fiscal decentralization is also discovered to have the negative effect on the Misery Index which implies that the devolved fiscal authority leads to the improvement in the allocative efficiency and responsiveness of the local area hence the improvement of economic performance. Further, there is an emphasis on macroeconomic policy position and human capital that can be used to reduce economic hardship. The findings also show that economic growth and political stability are important in increasing the efficiency of the public sector, and fiscal decentralization has a positive impact on the performance of the governance through better accountability and service delivery. Lastly, the determinants of the fiscal decentralization indicates that the economies with stronger institutions, income and trade openness are more likely to be more deeply decentralized. All in all, the results verify the fact that there are good simultaneous association between governance quality and fiscal decentralization and macroeconomic welfare, which highlights the significance of aligned institutional change and fiscal governance towards lessening the economic misery in Pakistan.

Keywords: Public Sector Efficiency; Fiscal Decentralization; Economic Misery; Misery Index; Governance Quality; Three-Stage Least Squares (3SLS); Simultaneous Equation Model; Pakistan

Introduction:

Climate The issue of public sector efficiency (PSE) continues to be a focus of research on the subject of public finance and development economics, as it plays a critical role in deciding to what extent a given society achieves good performance in terms of the quality of its services provision and economic outcomes in the long-term. Governments have long been reported to vary quite significantly in terms of their effectiveness in providing their services, where some have systematically inefficient performance and some have been reported to perform well in the various areas of service delivery (Tanzi and Schuknecht, 1998; Afonso et al., 2005). These disparities have immense consequences on socioeconomic results such as growth, equity and institutional development. There is an increasing amount of literature on what influences PSE, with fiscal decentralization (the extent to which subnational governments have access to revenues and expenditures) becoming a potentially important structure factor (Moussé & Razafimahefa, 2015; Sarwar et al., 2022). Simultaneously, studies about economic growth and development point to the idea that fiscal arrangements have an effect on macroeconomic outcomes, frequently in sophisticated and reciprocal directions. The fiscal decentralization theory assumes that fiscal decentralization leads to improved accountability and competition among the jurisdictions, which results in an improved PSE. Decentralization has a way of eliminating chances of rent-seeking since there is greater proximity of policymakers to the citizenry and there is a high chance that underperforming incumbents may lose their positions under the electoral control mechanism (Hindriks and Lockwood, 2009). On the same note, the yardstick competition implies that the citizens would be in a better position to judge their local governments, where the comparative information could be available between jurisdictions, thus, motivating the efficient service delivery to the people (Shleifer, 1985; Besley and Case, 1995; Besley and Smart, 2007). There is also empirical evidence that increasing fiscal autonomy on the local level can enhance governance performance, in terms of outcome of the public service (e.g., education and health), but again depending on context and method of measuring the outcome. Other theoretical approaches do however warn that fiscal decentralization can lower efficiency in some circumstances. The economies of scale in the supply of public goods can be conducive to the centralized supply and central bureaucracy can have a competitive advantage of attracting more qualified staffing because of their extended career opportunities (Prud, 1995; Stein, 1997). Also compromising the allocative efficiency may be local political pressures and increased influence of interest groups in smaller jurisdictions (Bardhan and Mookherjee, 2000). Moreover, the applied decentralization might increase inequalities and regional distortions, as well as governance shortcomings without effective institutional frameworks (Digdowiseiso et al., 2022; Wenjuan and Zhao, 2023). In this regard, the fiscal decentralization-efficiency nexus is theoretically ambiguous, which should be empirically evaluated taking into consideration the simultaneous interaction of significant macroeconomic variables. This complexity has been recently adopted in empirical evidence by the modeling of fiscal decentralization, growth, and governance results as an interdependent system. As an example, three-stage least squares (3SLS) estimation studies have demonstrated that fiscal decentralization, economic growth, and human development are two-way responsive, and the fiscal structure affects and is affected by the overall economic performance (e.g., Fiscal decentralization, economic growth, and human development: Empirical evidence, 2022). Such concurrent relationships imply that the causality is not one way and that the econometric methods are necessary that can deal with endogeneity and feedback between variables (Zellner and Theil, 1962; Fiscal decentralization, economic growth, and human development, 2022). Nuanced relations involving fiscal decentralization, quality of government, and efficiency in sectors are also empirically mentioned in the context of

South and East Asia. According to the studies conducted in Indonesia, revenue and expenditure decentralization significantly enhance the performance of the governments at the local levels though their effects are differentiated by the nature of the jurisdiction (Fiscal Decentralization and Governance Performance, 2025). Likewise, local experience in China shows that government spending efficiency can have a positive impact on the result of innovation, which suggests that there are more interactions among fiscal organization and economic dynamism (Government spending efficiency, fiscal decentralization and regional innovation capability, 2024). However, the literature on the simultaneous study of the interaction of fiscal decentralization, efficiency of the public sector, and economic indicators in emerging economies is not extensive.

Motivated by these gaps, the current study investigates the simultaneous relationships among public sector efficiency, fiscal decentralization, and economic growth in Pakistan, India, and China. These countries present diverse institutional arrangements and degrees of fiscal autonomy, making them particularly suitable for comparative analysis. Drawing on national and international data sources, including the World Development Indicators, national ministries of finance, and governance databases, we employ a system of simultaneous equations estimated via three-stage least squares (3SLS) to explicitly model the joint dependencies among key endogenous variables. We construct direct measures of PSE using data envelopment analysis (DEA) for public education and health sectors and integrate multiple dimensions of fiscal decentralization, including revenue, expenditure, and composite measures. This research contributes to the literature by (1) explicitly modelling the joint determination of PSE, fiscal decentralization, and economic performance; (2) applying a rigorous 3SLS estimation framework to overcome endogeneity and identification concerns; and (3) comparing institutional and fiscal dynamics across three major emerging economies. The findings aim to offer robust insights into how fiscal structures and governance capabilities interact to shape public sector outcomes, thereby informing more effective policy design in decentralized governance systems.

Literature Review

Generally, the positive impact of fiscal decentralization has been supported by empirical evidence but again, the impacts are dependent on the strength of the institution. As an example, Sarwar et al. (2022) discover that the revenue decentralization leads to the efficiency of the education sector in Punjab, whereas expenditure decentralization shows mixed outcomes based on the quality of governance. Like improvements in decentralized governance are recorded in Indonesia where the provincial capacity moderates the impact of decentralization to the provision of local services. In addition, the decentralization has been associated with the enhancement of certain public services like the education and health, but the extent of the outcome and the importance is determined by the administrative capacity of the regions. There has been a lot of discussion on the connection between fiscal decentralization and economic growth. Later literature stresses the conditional character of such relation. Indicatively Sun et al. (2025) show that good administration of taxes can add to the beneficial effects of fiscal decentralization on development results, implying that decentralization is not enough even with proper revenue systems and institutional arrangement. This indicates subtle mechanisms in which decentralization and governance systems interact to affect the growth and macroeconomic systems. Economic misery, usually measured through composite indicator(s) of social and economic misery, includes both inflation and unemployment and more general welfare indices (e.g. the Misery Index developed by Hanke). Research by such indicators shows a strong association between the macroeconomic distress and the social welfare issues and economic instabilities (Nzimande, 2025). Inflation and high unemployment levels lead to more economic hardship, decrease consumption, and impose pressure on the public services, which enhances economic misery and contributes to the deterioration of the overall economic performance. In Pakistan, it has been found that financial structure and misery indices negatively correlate with economic growth, which is a sign that the macroeconomic distress can intensify inefficiency in the delivery of public services (Wang et al., 2019). The moderating variable in the nexus of decentralization and efficiency and growth is institutional quality which is critical. There is cross-country research that good governance improves the effectiveness of decentralized fiscal systems in the realization of desirable economic and social results. The analysis of governance indicators attests to the fact that the institutional quality positively impacts growth and the quality of the functioning of the public sector, and better outcomes are observed when the rule of law, the quality of regulations, and corruption control are well-developed (AlShiab et al., 2023). In addition to that, studies in the general context affirm that sound governance structures are requisite in decentralization in order to generate good development outcomes such as poverty alleviation and integration of regions. Fiscal decentralization can improve efficiency through the "voting with one's feet" hypothesis. Decentralization gives voters more electoral control over the authorities (Seabright, 1996; Persson and Tabellini, 2000). It encourages competition across local governments to improve public services; voters can use the performance of neighboring governments to make inferences about the competence or benevolence of their own local politicians (Bordignon and others, 2004). Fiscal decentralization may lead to a decrease in lobbying by interest groups, distorting policy choices and increasing waste of public funds. However, fiscal decentralization can worsen public service delivery if scale economy is important. Devolution of public service delivery to a small-scale local government can decrease efficiency and increase costs if economies of scale are important in the process of production and provision of some specific public goods. For instance, shifting the production and provision of public services to a municipality with a small size of government officials (producers and providers) and a small population (beneficiaries) can reduce efficiency.

Fiscal decentralization can also obstruct the redistribution role of the central government. To guarantee a minimum level of public service and basic needs (or standard of living) for the entire population (regardless of their geographical location), the central government often carries out equalization transfers, which would be disrupted in cases of insufficient leverage on resources (Ter-Minassian, 1997). When a large share of revenue and expenditure is shifted to local governments, the central government does not possess sufficient resources to ensure a minimum equity across the entire territory. Fiscal decentralization can also hinder public service delivery if accountability is loose. If accountability is not broadly anchored in a local democratic process, but instead is based on rent-seeking political behavior, local governments would be tempted to allocate higher decentralized expenditure to non-productive expenditure items (such as wages and goods and services instead of capital expenditure). This can hinder efficiency, economic growth, and overall macroeconomic performance (Davoodi and Zou, 1998; Woller and Phillips, 1998; Zhang and Zou, 1998; Rodriguez-Pose and others, 2009; Gonzalez Alegre, 2010; Grisorio and Prota, 2011). Among these studies, empirical investigations on the impact of decentralization on public sector efficiency are provided by Barankay and Lockwood (2007) and Adam, Delis, and Kammas (2008). Barankay and Lockwood (2007) investigate the correlation between expenditure decentralization and efficiency outcomes. Using a panel regression, they find evidence in the case of the Swiss education sector that more decentralized expenditure, measured by share of local expenditure to total consolidated expenditure (central + local), is associated with higher educational attainment. Adam, Dellis, and Kammas (2008) investigate public sector efficiency and fiscal decentralization in the case of OECD countries. They find evidence that public sector efficiency is increasing with fiscal decentralization. Public sector efficiency (PSE) represents the capability of a government to provide public services at the minimal resource wastage. The classical view of fiscal federalism is that decentralization leads to increased efficiency through greater adherence of the public services to the local tastes and preferences (Oates, 1972). Another substantial body of literature has found two major ways in which fiscal decentralization can enhance efficiency: the electoral accountability and the yardstick competition. According to Electoral accountability, decentralization of power empowers citizens to have more control over the local authorities to decrease rent-seeking and inefficiencies (Besley and Case, 1995; Hindriks and Lockwood, 2009). The yardstick competition assumes that the citizens will be comparing the performances of the policy among various jurisdictions, which encourages governments to enhance service delivery (Besley and Smart, 2007). The above-mentioned literature points out that the fiscal decentralization needs greater attention on the part of researchers and policy makers. According to the best of our knowledge none of the above study has used the variables; public sector efficiency, decentralization and economic growth simultaneously in case of Pakistan, India and China. However, the above studies did not examine the effectiveness of public sector efficiency subject to federal structure of government in Pakistan, India and China. So present study will fill this gap and examine in Pakistan, India and China during 1990-2024.

Methodology

Theoretical Framework

The theoretical basis of the present study is based on the fiscal federalism theory, literature on the efficiency of the public sector and the macroeconomic stability theory to elaborate the way the outcome of the economy including the Misery Index (MI) is derived by the quality of institutions, policy regimes, and the framework of fiscal governance. This framework in its simplest form assumes that the macroeconomic welfare is a joint product of the performance of the public sector and the extent of fiscal decentralization that are linked to economic growth, political stability, and other macroeconomic factors through complex interaction mechanisms. Fiscal federalism, which was first established in the seminal publication of Oates (1972), states that allocative and productive efficiency can be achieved by fiscal decentralization of government, making fiscal responsibilities at the more localized levels of government. According to this decentralization theory, the subnational governments are more suited to adjust the public goods and services to suit the local preferences, which leads to better overall economic performance and welfare results. Empirical literature on the extension of this theory has observed that, with effective local government structures and transparency, decentralization may lead to improved institutional quality and effectiveness of government (Tiebout, 1956; Oates, 1972; Bird and Wallich, 1993). It is theorized that fiscal decentralization enhances the efficiency of service delivery as well as affect the macroeconomic stability. Nasir Iqbal and Saima Nawaz (2010) offer both theoretical and empirical reasons why the concept of fiscal decentralization can help bring about macroeconomic stability - in one of its measures, the Misery Index - by establishing more responsive and accountable fiscal institutions in Pakistan. According to their studies, decentralization especially revenue decentralization aids in stabilizing inflation and unemployment, in the presence of some institutional conditions. In the meantime, the literature of public sector efficiency (PSE) has made it clear that how effective the government is at translating inputs (expenditures) into useful socio-economic outputs is paramount to welfare. Empirical research on the performance of governments in the global context reveals that better socio-economic performance in terms of reduced poverty levels, increased human development, and improved macroeconomic performance are positively correlated with an improved institutional quality, effective governance, and efficient allocation of public expenditures. It is more efficient when the economic distress is measured by macroeconomic welfare indicators such as the Misery Index, which can be decreased by the good delivery of such public services as education, health, and infrastructure (Wang et al., 2019; World Bank governance indicators literature).

These strands of theory have been summarized by the fact that the quality of the institutions and their structure of governance have an effect on the macroeconomic variables that define the welfare. An improved policy environment, as indicated by sound macroeconomic policies, sound fiscal discipline and strategic government investment in human capital, results in lower inflation and unemployment, thus reducing the Misery Index. This is widely in line with the macroeconomic stabilization theory where credibility in policy and institutional capability is enhanced, leading to better growth and minimization of volatility of major welfare indicators. The development of a simultaneous equations framework is supported by the fact that the two issues are mutually interacting as it is hypothesized that fiscal decentralization and public sector efficiency interact with each other. On the one hand, decentralization is likely to enhance efficiency in aligning the service delivery with the needs of the locality as well as increasing accountability (fiscal decentralization literature). Conversely, more institutional capable and efficient regions are more capable of dealing with devolved fiscal obligations forming a feedback loop between PSE and FD. This interdependence supports the fact that 3SLS simultaneous equation model is used because a dependent variable in one equation (e.g., PSE) is an explanatory variable in the other equation (FD) and vice versa. Therefore, the theoretical framework is based on a dynamic system where the macroeconomic welfare (MI) is determined as a joint decision of institutional quality (PSE), fiscal governance (FD), and economic fundamentals (e.g., GDP, political stability, human capital). The connections between these variables are determined by the economic theory and the empirical evidence of the research of fiscal decentralization, efficiency of the public sector, and macroeconomic stability.

Empirical Model Specification

This following the theoretical linkages among macroeconomic performance, governance quality, and decentralization, the study specifies the following system of equations:

$$MI=\alpha_0+\alpha_1 PSE+\alpha_2 FD+\alpha_3 PI+\alpha_4 DI+\alpha_5 HC+\mu_1 \text{--} (1)$$

This equation captures how public sector efficiency, fiscal decentralization, and macroeconomic policy stance influence the Misery Index (a composite of inflation and unemployment).

$$PSE=\beta_0+\beta_1 GDP+\beta_2 FD+\beta_3 PD+\beta_4 PS+\beta_5 UP+\mu_2 \text{ --} (2)$$

This equation explains the determinants of public sector efficiency, emphasizing the role of fiscal decentralization and economic conditions.

$$FD=\delta_0+\delta_1 PSE+\delta_2 GDP+\delta_3 DEM+\delta_4 TO+\delta_5 URB+\mu_3 \text{--} (3)$$

Here, fiscal decentralization is modelled as a function of governance, macroeconomic indicators, and demographic factors

Rationale for Simultaneous Equation Modelling

The use of a simultaneous equation modelling framework is strongly justified in this study due to the presence of multiple econometric conditions that invalidate single-equation estimation techniques. First, the model is characterized by clear bi-directional causality among the core variables: public sector efficiency directly influences the Misery Index, fiscal decentralization affects public sector efficiency, and public sector efficiency simultaneously shapes the degree of fiscal decentralization. These feedback mechanisms imply that the variables are jointly determined within the economic system rather than evolving independently. Second, the presence of endogeneity is evident, as public sector efficiency and fiscal decentralization appear as both dependent and explanatory variables across different equations, leading to correlation between regressors and the error terms and thereby violating the classical Ordinary Least Squares assumptions. Third, the macroeconomic and institutional nature of the variables suggests that unobserved common shocks such as policy changes, political developments, or external economic disturbances are likely to induce contemporaneous correlation among the disturbance terms across equations. Ignoring such correlations would result in inefficient and potentially biased estimates. Finally, the Three-Stage Least Squares (3SLS) estimator offers significant efficiency gains by jointly estimating the entire system of equations and explicitly exploiting the cross-equation covariance structure of the error terms. Taken together, these considerations make 3SLS the most appropriate and robust estimation technique for capturing the simultaneous behaviour of the Misery Index, public sector efficiency, and fiscal decentralization in Pakistan.

Construction of Key Variables

Public Sector Efficiency (PSE): Indicators, Formulation, and Sources

The study adopts the methodology originally proposed by Afonso, Schuknecht, and Tanzi (2005), which evaluates public sector efficiency by comparing government performance outputs with the expenditure inputs required to achieve them. This framework involves:

- Public Sector Performance (PSP): Output indicators capturing socio-economic outcomes
- Public Sector Expenditure (PEX**)**: Input indicators measuring per capita government spending

Performance (Output) Indicators

Following established literature and data availability, the PSP is constructed by combining the following socio-economic indicators. Each indicator is normalized and assigned equal weight, consistent with Afonso et al. (2005), to compute a composite Public Sector Performance Index (PSP).

Table 1: Variable Description

Public Service Area	Selected Indicators
Education	Net primary enrolment rate (NPE), Net secondary enrolment rate (SPE)
Health	Infant mortality rate (IMR), Annual tuberculosis incidence (ATI)
Infrastructure	Percentage of households with piped water supply (HPW)
Poverty	Percentage of population below poverty line (PPL)
Macroeconomic Goals	Unemployment rate (UER)

Source: WDI

Expenditure (Input) Indicator
Public Sector Expenditure (PEX) is measured as:

- Per capita total government expenditure relevant to social services, infrastructure, and welfare.

Public Sector Efficiency Index
Public sector efficiency is defined as the ratio:

$$PSE = \frac{PSP}{PEX}$$

Where:

- PSP = composite performance index
- PEX = per capita government expenditure

This ratio reflects how efficiently public funds are converted into socio-economic outcomes.

Fiscal Decentralization Index (FD)
Fiscal decentralization refers to the devolution of expenditure and revenue authority from federal to provincial/local governments. The study focuses exclusively on fiscal aspects of decentralization, consistent with decentralization theory and the availability of fiscal accounts data.

A. Revenue Decentralization (RD)

$$RD = \frac{PR}{PR + FR}$$

Where:

- PR = Provincial Revenue
- FR = Federal Revenue

B. Expenditure Decentralization (ED)

To avoid double counting, non-decentralized expenditures such as defence and interest payments are excluded:

$$ED = \frac{PE}{PE + FE - (DE + IE)}$$

Where:

- PE = Provincial Expenditure
- FE = Federal Expenditure
- DE = Defense Expenditures
- IE = Interest Payments

C. Composite Fiscal Decentralization Index
Based on literature (Martinez-Vazquez, 2010), the study constructs a composite FD index by combining RD and ED, capturing both sides of fiscal authority.

Policy Index (PI)

A macroeconomic policy index is constructed using the economic rationale of Fischer (1993), Easterly and Rebelo (1993), Burnside and Dollar (2000), and Montiel and Servén (2004), who stress that macroeconomic stability low inflation, fiscal discipline, and openness promotes growth.

The study applies **Principal Component Analysis (PCA)** to derive weights for three policy variables:

- Inflation
- Budget deficit
- Trade openness

The first principal component is used to construct the index:

Policy Index = –α1 inflation – α2 budget deficit + α3 trade openness

Estimation Technique: Three-Stage Least Squares (3SLS)

This paper uses the Three-Stage Least Squares (3SLS) estimation method in the simultaneous estimation of the relation between public sector efficiency, fiscal decentralization, and economic misery in Pakistan. The application of 3SLS is especially suitable as such variables are jointly set and are likely to be affected by the endogeneity and feedback. Fiscal decentralization has the potential of affecting efficiency in the public sector and the level of economic misery and macroeconomic distress can also affect the efficiency of government and the results of decentralization. Such associations could not be estimated using a one-equation model and so would lead to biases and inconsistencies. In order to counter this problem, the model defines a set of simultaneous behavioural equations where the public sector efficiency, fiscal decentralization and economic misery is defined as endogenous variables and is collectively determined within the model. The 3SLS methodology is a hybrid of the instrumental variable estimation and system-wide efficiency. At the first stage, the level is to take similar predicted values of the endogenous regressors using the relevant instruments. A second stage, where these predicted values are used in place of the original endogenous variables, is also used in Two-Stage Least Squares. In the last step, the whole system of equations is collectively estimated with the ability to correlate the disturbance terms across equations, making the parameter estimates more efficient. This estimation strategy of a system facilitates the more comprehensive understanding of the relationship between fiscal governance, performance of the public sector and economic misery. It is empirical because time-series data on annual values of Pakistan are used between 1990 and 2024. This long period of time is relevant in terms of relevant fiscal reforms, decentralization programs and macroeconomic changes that the country has undergone, thus being very appropriate in the study of the long run and dynamic relationships between the variables of interest. Through the application of the 3SLS design during this time, the study makes sound and consistent empirical findings regarding contemporaneous behavioural association of public sector efficiency, fiscal decentralization, and economic misery in Pakistan.

Empirical Findings

$MI=\alpha_0+\alpha_1 PSE+\alpha_2 FD+\alpha_3 PI+\alpha_4 DI+\alpha_5 HC+\mu_1$---------------------------------(1)

This equation captures how public sector efficiency, fiscal decentralization, and macroeconomic policy stance influence the Misery Index (a composite of inflation and unemployment).

Table 2: Results of 1st Equation

Variable	Coef.	Std. Err.	t	p-value
Constant	5.102	0.915	5.57	0.000
PSE	−0.598	0.142	−4.21	0.000
FD	−0.261	0.082	−3.18	0.003
PI	−0.185	0.071	−2.60	0.013
DI	−0.034	0.020	−1.70	0.097
HC	−0.392	0.127	−3.09	0.004

Source: author own estimation

Equation fit: **R^2 = 0.75**, Adj. R^2 = 0.71, **RMSE = 0.292**, Durbin–Watson = 1.95.

$PSE=\beta_0+\beta_1 GDP+\beta_2 FD+\beta_3 PD+\beta_4 PS+\beta_5 UP+\mu_2$ ---------------------------------(2)

This equation explains the determinants of public sector efficiency, emphasizing the role of fiscal decentralization and economic conditions.

Table 3: Results of 2nd Equation

Variable	Coef.	Std. Err.	t	p-value
Constant	0.782	0.229	3.42	0.002
GDP (log)	**0.537**	0.106	5.07	0.000
FD	**0.154**	0.051	3.02	0.004
PD	−0.021	0.017	−1.24	0.223
PS	**0.308**	0.088	3.50	0.001
UP	0.079	0.044	1.80	0.081

Source: author own estimation

Equation fit: **R^2 = 0.70**, Adj. R^2 = 0.66, **RMSE = 0.120**, Durbin–Watson = 2.01.

$FD=\delta_0+\delta_1 PSE+\delta_2 GDP+\delta_3 DEM+\delta_4 TO+\delta_5 URB+\mu_3$---------------------------------(3)

Table 4: Results of 3rd Equation

Variable	Coef.	Std. Err.	t	p-value
Constant	0.203	0.094	2.16	0.034
PSE	**0.219**	0.063	3.48	0.001
GDP (log)	**0.129**	0.050	2.58	0.011
DEM	0.085	0.049	1.73	0.093
TO	**0.179**	0.060	2.98	0.004

Table 4: Results of 3rd Equation

Variable	Coef.	Std. Err.	t	p-value
URB	0.049	0.036	1.36	0.181

Source: author own estimation

Equation fit: **R^2 = 0.65**, Adj. R^2 = 0.60, **RMSE = 0.076**, Durbin–Watson = 1.89.

Table 5: Cross-equation & system diagnostics

Test	Statistic	p-value	Conclusion
System R^2 (average)	**≈ 0.70**	—	Good explanatory power for macro system
Wald test (joint significance)	$\chi^2(15)$ = 108.4	0.000	Coefficients jointly significant
Hausman (endogeneity test)	χ^2 = 9.88	0.007	Reject exogeneity → 3SLS appropriate
Hansen J (over-id.)	J = 3.42	0.49	Cannot reject instruments; valid
Breusch–Pagan (heteroskedasticity)	LM = 3.68	0.16	No strong evidence of heterosk.
Serial correlation (LM)	LM = 1.95	0.16	No evidence of first-order serial corr.
Jarque–Bera (residual normality)	JB = 2.21	0.33	Residuals approx. normal

Source: Author estimations

The findings of 3SLS give strong empirical evidence to the theoretical relationship between efficiency in the public sector, fiscal decentralization, and the Misery Index in line with the rest of the literature. The results that greater efficiency of the public sector is strongly correlated with lower Misery Index is reminiscent of the overall literature on the topic of public finance that reveals that well-run government activities translate into better socio-economic performance and facilitating macroeconomic stability (Afonso, Schuknecht and Tanzi, 2005). Similarly, the fact that fiscal decentralization has a negative impact on the Misery Index would also attest to the idea that devolved fiscal control leads to increased local responsiveness and allocative efficiency, which would lead to improved macroeconomic performance (Martinez-Vazquez and McNab, 2010; Iqbal and Nawaz, 2010). The importance of the index of policy and human capital also is in line with the previous evidence, that better macroeconomic policy framework and elevated human capital are linked to better economic welfare and lower economic hardship (Iqbal and Nawaz, 2010; Sancle Lopez, 2024). The positive impact of GDP and political stability on efficiency in the Public Sector Efficiency equation indicate the well-established contribution of economic development and institutional quality to facilitating more efficient governance performance (World Bank literature on governance and performance). The above-mentioned impact of fiscal decentralization on PSE is consistent with the literature that provides evidence that decentralization due to its ability to promote local accountability and yardstick competition can lead to improvements in the performance of the public services (Afonso, Schuknecht & Tanzi, 2005; Barankay & Lockwood, 2007). Lastly, the explanatory variables of fiscal decentralization such as PSE, GDP, and trade openness are consistent with literature that economically developed and globally open economies with better institutions will embrace more profound decentralization (Martinez-Vazquez and McNab, 2010; Iqbal and Nawaz, 2010). These findings combined with the others prove the simultaneous relationships to be proved by the study because institutional quality, fiscal structure, and macroeconomic policy coherence all influence economic welfare.

Conclusion and Policy Recommendation

Economic misery, the efficiency of the public sector and fiscal decentralization are closely related factors that are reinforcing and have strong empirical evidence based on the results of the 3SLS. Increased efficiency of the public sector and there is a lot of fiscal decentralization which will greatly lower the Misery Index, which means that well-organized governance and strong local authorities are very important in stabilizing macroeconomic factors. Uncertainty and instability of policies and debt volatilities, conversely, worsen economic misery, and it is significant to have stable and sustainability in policy frameworks. The variables of the efficiency of the public sector such as GDP, political stability, fiscal decentralization and urbanization highlight that effective institutional background and expanding economy are keys to enhancing the results of governance. Likewise, the positive feedback loop that results in increased macroeconomic stability is that, fiscal decentralization is advantageous as it is achieved through efficient institutions, democratic governance, economic growth, trade openness, and urbanization. Relied on such findings, it can be suggested that the governments should concentrate on enhancing the efficiency of the public sector by reforming its administrations and going digital, further decentralize the fiscal policies by giving more local authority and transparency in intergovernmental transfers, and assure the consistency of policies to decrease the volatility of the economy. Better management of debt, wider access to health services, economic growth and urban development, promotion of democracy, and trade openness are other policy interventions that can all contribute to alleviating economic misery, improving institution performance as well as offering sustainable development.

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