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Bridging the Gap: Evaluating Fiscal Interventions for Poverty Reduction in Pakistan

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ABSTRACT

This work aims to find out role of fiscal policy on poverty reduction in Pakistan with special reference to government expenditure, taxes and stability. The study applied the bounds testing of Autoregressive Distributed Lag (ARDL) approach with the view to deeping into the effects that fiscal variables such as spending on education & health, income and sales tax on poverty. For the purpose of the analysis, the sample includes companies with data available between 1980 and 2023. Therefore, the findings suggest that there is significant inputs from the government's side spending especially on education and health prospects that have great impact on poverty alleviation. However, the current regime of taxation exacerbates the economic problems for households particularly on the poor ones. The two fold aim of fiscal policy as envisaged in the study is aimed at promoting sound economic growth as well as actualization of income redistribution. More to the point, it raises the stakes of implementing specific fiscal measures such that, unless carefully designed and undertaken, they can actually worsen poverty. The paper underscores the need for provoking structural fiscal reforms in Pakistan to pursue equitable taxes and better reforms in public spending, in pursuit of a sustained poverty alleviation. The work furthers the broader discourse exploring the effectiveness of fiscal policy for developing countries, and illuminates the challenges for and potential in using fiscal measures to achieve greater fairness in developing countries.

Keywords: Fiscal Policy, Poverty Reduction, Progressive Taxation, Macroeconomic Stability, ARDL

Jel classification: E60, G20, O11

INTRODUCTION

Reduction of poverty has been an outstanding agenda in many developing countries even today concentrating on fiscal policy. Taxation and expenditure on goods and services provided by the government is another category known as fiscal policy through which governments seek to increase or decrease the total income of particular section of society. More specifically, for the case of Pakistan examining the fiscal efficiency of the intervention measures to address poverty and unequal growth is pertinent.

In the current literature, due emphasis has been placed on twofold use of fiscal policy, on stability and equity. Taxation gives a push to the adjustments of consumer and business demand, supply of labour and capital, and pattern of spending and investment. These changes, in turn, affect the distribution patterns of the disposable income (Bakija, 2014; Chandoevrit & Dahlby, 2007, p. 44). Education, health, and infrastructure are the three areas of social spending that Jorgensen et al. (2018) say bring about social equity and mobility by checking inequality in income¹. But even this area has to meet a number of qualifications because some fiscal policies, either through tax systems that align with poverty or through improper public spending, may help to deepen poverty, especially in developing countries.

Some of the persisting issues in Pakistan that render fiscal policies as inadequate to the challenge of fighting poverty include tax evasion, fiscal deficits and un efficient utilization of public funds and ill directed expenditures. Meanwhile, the tax to GDP ratio is still very low to encourage the government to fund important social services. The Vietnam Economic Review (2019–2020) also highlighted that due to consistently executing higher expenditures than revenues, Pakistan remained chronically balancing in the red with expenditures at 21.2% of GDP and revenues at 15.3% (Padda & Akram, 2009). They distort macro economic balances and also provide a constricted space for poverty reduction policies.

International experience gives confidence that with progressive taxation, poverty reduction is achievable. The article Lindert et al. (2022) also showed the existence and effectiveness of the progressive taxation and targeted social spending in Latin America in the process of eliminating unequal distribution of income and achieving sustainable and inclusive growth. Likewise, the Asian research of Rahman and Chowdhury (2022) on the cash transfer program in Bangladesh and Kim and Park (2023) on the taxation policy in South Korea find that fiscal policies need to be contextualized in the socio-economic political environment for optimal impact.

In Pakistan some changes have already been made through such policies as the Benazir income support programme has revealed some effects of poverty alleviation especially in rural areas (Malik et al., 2022). However, weaknesses in implementation and management of programs to deliver the interventions that

achieve these outcomes still hold back the full effectiveness of such approaches. In addition, Ahmed, and Shafique 2023 have estimated that fiscal decentralization could improve the targeting and efficiency of poverty reduction strategies through improving the efficiency of the local government.

However, with these efforts, Pakistan fiscal system is still essentially regressive, and the indirect taxes and utilities singly pin the larger burden on the economically weaker section (Khan & Qadir, 2023). This unambitious social pattern underlines the need for passing energetic reforms in the taxation procedures in order to strengthen the equity and make the fiscal policies combat poverty. Moreover, yet important, macroeconomic stability is crucial in supporting the steady implementation of fiscal measures and the sustainability of the resulting gains. According to Anwar & Hussain (2022), measures such as; controlling inflation and fiscal discipline, are key aspects when developing policies to fight poverty.

This research aims at ascertaining role of fiscal policies for poverty reduction in Pakistan with reference to the impact of taxation, government expenditure and poverty outcomes. Using historical data and current trends of the fiscal situation in Pakistan, this paper identifies the merits and demerits of Pakistan's budgetary policies and offers recommendations for future policies. The findings will contribute to the literature on poverty reducing, covering evidence based policy recommendations as to the formation of fair and effective fiscals systems in developing countries. The present research is intended to evaluate the multidimensional link between fiscal policies and poverty in Pakistan. Thus, the aim is to analyse the effects of taxation measures on income inequality and poverty as well as the effectiveness of government spending on priority areas such as education, health, and transport. In particular, the role and effects of fiscal decentralization for targeting and efficiency of poverty reduction programmes are investigated. This paper analyzes macroeconomic stability, budgetary restraint and effectiveness on poverty reduction programs. On the basis of findings, this report make docketed recommendations for changing the fiscal policies of Pakistan to address issues of equity, efficiency and effectiveness in the fight against poverty and promoting inclusiveness.

LITERATURE REVIEW

Cross section studies indicate poverty reduction results of fiscal measures vary depending on the context as well as the nature and design of the policies. Similarly, a recent work by Lindert et al. (2022) found that in the case of progressive taxation and higher social spending in Latin America such associated fiscal measures effectively deemed inequality and poverty. In this regard, the research noted that capacity for theses policies in bearing the aforementioned benefits was hinged on the fact that the benefits of economic growth had to reach the lowest stratum in society. However, Garcia and Weiss (2023) have looked at the ways in which public spending for health and education in Sub-Saharan Africa has elicited positive effects on poverty reduction through delivery of relevant services and the provision of

opportunities for social mobility.

The studies show that fiscal policies have played a big role in poverty relief in Asia. Extreme poverty reduction in Bangladesh: Chen and Dahlman (2022) have highlighted that cash transfer programs and other mechanisms of social protection work in Bangladesh. Jointly, their research identified and established that whilst sufficiently financed and equitably targeted, focused monetary transfers might significantly improve the quality of life for the country's poorest households. Ala, similarly, Kim and Park (2023) have investigated the impacts of the tax reforms for South Korea. From their study, they suggest that with collection of progressive taxes and an uplift in social expenditure the poverty levels were reduced and social equity achieved. These literature stress the importance on well-coordinated economic strategies focused on the needs of the community with special reference to the fiscal needs of the community.

Recent research have been directed towards the impact of fiscal reforms for poverty reduction in Pakistan. In this study Malike and Ahmad (2022) assessed the impact of Benazir Income Support Programme (BISP), a massive social protection programme in Pakistan, for the poverty reduction. According study done on BISP, it was observed that there was a significant and positive impact of BISP in terms of poverty alleviation particularly so in rural area which had the highest poverty index. The authors argued that to achieve the results in combating poverty with the help of BISP one should focus on four key aspects: availability of the funds, relevance of the program, and rigorous assessment of the results. However, it was also established that targeting could be achieved in a more efficient manner by expanding the coverage of the program and by working more intensively in targeted sub-populations.

Ahmed and Shafique (2023) conducted another study in order to examine the impact of fiscal decentralisation on poverty alleviation in Pakistan. From their research they were able to recommend that decentralisation of resources made poor people's groups to be used in what they considered more adequately, thus improving the positive impact of poverty eradications. Yet the study also revealed a range of issues that need to be addressed including limited local capacity and the imperative for greater development of institutions in support of subnational fiscal programmes. The outcome of this study implies that the decentralisation of fiscal systems can reduce poverty, provided that it is additionally complemented by the strengthening of institution and governance frameworks.

Taxation policy is another important component of fiscal structure of Pakistan. Khan and Qadir (2023) did a good and thorough review on the impacts of the changes in the tax system for incidence of poverty the key findings of the study were. In the case, they found out that the current kind of taxation is mostly regressive in nature, which puts much burden on the poor and hampers efforts of eradicating poverty. They argued that for efficient implementation of a fiscally motivated poverty reduction strategy, there is need for change to a more progressive structure of taxes to ensure that there is efficiency in distribution of wealth. Thus,

for this objective it will be required to extend the scope of population, submitted to the tax, to strengthen an income orientation of taxes, and also to intensify the management of the taxation's collection, reducing the unauthorized evasion and improving observance of the tax legislation.

This also depends with the overall macroeconomic conditions in trying to elaborate the degree and effectiveness of fiscal policies in reducing poverty. Macro economic stability and reduction of poverty in Pakistan has also been analyzed by Anwar and Hussain in the year 2022. As they noted, often, fiscally motivated attempts at poverty reduction are frustrated by fiscal deficits and inflation. According to their observation, they recommend that in aim of enabling fiscal polices to make an impact on poverty reduction, good macro economic harmony is required, particularly anti-inflation measures and fiscal prudential measures. In support of this viewpoint, Ali and Shah (2023) explain that fiscal policies should be integrated into a broader strategy that involves structure, reforms for improving the economic growth, governance and reducing income inequality.

Furthermore, Sadiq and Ali (2023) also examined the effect of general expenditure on poverty reduction particularly on health, education and physical infrastructure in Pakistan . They found that higher public spending in these sectors has been good for poverty reduction but that many such effects have come out dampened by issues to do with poor budget implementation as well as misplaced priorities. The study urged a need for a more open and improved governance in public fi nance so that policy measures in fiscal development yield positive results anchored by poverty status.

Public spending can contribute to reducing income disparity if the tax and transfer system is designed to be pro-poor. Goni et al. (2008) and Leubker (2012) examined the effects of income inequality reduction on public expenditure. Income disparity has been decreased by government spending and money transfers, as indicated by studies conducted by Frent et al. (2009) and Milligan (2013). In their study, Causa and Hermansen (2017) analyze microdata at the family level from OECD nations to provide evidence that implementing progressive taxes, such as corporation and income taxes, social security charges, and money transfers, can effectively decrease income inequality. Implementing prudent and good fiscal policies has the potential to decrease income inequality and alleviate poverty. In the case of Pakistan, Bhatti et al. (2015) and Naqvi et al. (2011) have also verified that pre-government payments and agricultural income taxes specifically contribute to the reduction of income disparity and poverty. Nevertheless, Papanek and Kyn (1986) demonstrate that utilizing taxation as a policy instrument will have minimal effect on income distribution if public expenditure is mostly allocated to the political, bureaucratic, and military elites instead of the sectors that cater to the impoverished, thus limiting societal benefits.

Empirical evidence also demonstrates that direct taxes have a reducing effect on income disparity. Holler et al. (2012) suggest that countries with limited tax bases and transfer systems can achieve a similar level of income redistribution if nations

with substantial tax bases and transfer systems implement progressive direct taxes. Along the same line, Martínez-Vázquez and Sepulveda (2011) also considered analyzing the effect of direct taxes including the personal and corporate income taxes on income inequality. This paper suggests that progressive as well as direct taxes can be utilised in the achievement of progressive income distribution. Also, Maboshe & Woolard (2018) focus on the effects of fiscal policy on income distribution in Africa & Argentina. According to the findings, income taxes, property taxes, social security contributions have mediating effect on income distribution. In a similar way, Muinelo and Roca-Sagalés (2011) investigate the impact of the fiscal policy on income distribution using the imbalanced panel data of 1972–2006, particularly for the middle- and upper-middle-income countries. The results suggest that the direct taxes and current spending are important in meaning that increasing the direct taxes and the current public spending brings about a reduction in income inequality.

Similarly, Alavoutunki et al. (2017) discussed the effects of indirect taxes on income difference in emerging countries. The regression analysis and fixed effects tentatively suggesting the influence of the factors indicate that the advent of the Value Added Tax (VAT) escalates income difference. Simultaneously, it had little impact on inequality based on consumption. In a similar vein, Rehman and Naseer (2019) conducted a study on the prevalence of indirect taxes in Pakistan and determined that the Goods and Services Tax (GST) disproportionately decreases for low-income people. Additionally, they observed that the implementation of integrated GST could potentially have an adverse effect on public health, particularly the well-being of young children (aged below five years). Multiple empirical research, including Jamal and Javed (2013), Rafafat (2008), and Rafaqat and Hassan (2005), demonstrate the occurrence and impact of the Pakistani GST on the welfare of households. The researchers utilized multiple inquiries derived from the economic survey (HIES) dataset pertaining to the topic of family reunion. The findings of this study validate the decline of GST (items and Services Tax) for food, clothing, and general services, while GST seems to occur gradually for durable items and petroleum products.

Shivashanka et al. (2017) investigate the impact of variations in VAT rates on Sri Lanka's Gini coefficient and Theil index. The results indicate that the VAT change had no substantial impact on inequality. The Kakwani Progress Index indicates that the tax system is comparatively progressive, as it includes exemptions from VAT on essential items such as food and other fundamental necessities. Adokono and Grace (2016) conducted a study on Ghana and discovered that the country's economy, which is mainly reliant on agriculture, experiences a rise in poverty within the farming sector when there is an increase in indirect taxes.

Ahmad (2007) highlighted the significance of integrating public expenditure to promote economic advancement and alleviate poverty. Investing in health, education, and infrastructure has a beneficial impact on economic growth when other variables are accounted for. Multiple studies demonstrate the significance of

monetary policy in influencing economic growth models by focusing on two categories of public spending: expenditure on public and private goods, as well as subsidies. According to Roberts (2003), investing more money in education can create possibilities for the underprivileged to pursue their studies. However, the impact of this investment is influenced by demand factors. These considerations may encompass tuition reimbursement, family income, and other forms of child support recognition for the purpose of sending a kid to an educational institution.

Habito (2009) looked at the reasons behind the striking disparity between the patterns of poverty reduction and economic growth in Asia. This implies that the makeup of economic sectors has an impact on the characteristics, scale, and distribution of public investment, mostly in social services and agriculture. The quality of governance directly impacts the reduction of poverty and the patterns of economic growth. The results validated the significance of governance, public expenditure on social services, and the contribution of agriculture to GDP expansion. Similarly, it emphasized the crucial role that industry may have in attaining comprehensive economic growth and supported a broader perspective on poverty for the development of policies.

METHODOLOGY AND DATA

To empirically test the fiscal policy and poverty's association, time series data of Pakistan from 1980-2023 has been used. This study uses the headcount ratio as a proxy for poverty; however, to examine the effect of fiscal measures, government expenditures on education, Health, sales tax, and income tax are used, whereas inflation has been used as a control variable. All variables data have been taken from the Economic Survey of Pakistan. To estimate the long-run and short-run effects of fiscal measures, this research utilizes the ARDL model. The ARDL approach is better than other cointegration approaches because it gives efficient results even when the sample size is small, and the variables have mixed integration order. Before applying the ARDL technique, it is a prerequisite to confirm that none of the variables is integrated at order 2 and to check the integration; the ADF test is used, whereas to assess the cointegration, the subsequent model is used

$$\Delta H C = \alpha_0 + \alpha_1 H C_{t-1} + \alpha_2 E D_{t-1} + \alpha_3 H_{t-1} + \alpha_4 S T_{t-1} + \alpha_5 I T_{t-1} + \alpha_6 I n f_{t-1} + \sum_{i=1}^p \delta_{1i} \Delta H C_{t-1} + \sum_{i=0}^p \delta_{2i} \Delta E D_{t-1} + \sum_{i=0}^p \delta_{3i} \Delta H_{t-1} + \sum_{i=0}^p \delta_{4i} \Delta S T_{t-1} + \sum_{i=0}^p \delta_{5i} \Delta I T_{t-1} + \sum_{i=0}^p \delta_{6i} \Delta I n f_{t-1} + \varepsilon_t \quad (1)$$

Where HC is the headcount ratio, ED is expenditure on education, H is the health expenditure, ST is sales tax, IT is the income tax, and Inf is the inflation rate. α s are the long-run coefficient, δ s are the short-run coefficients, and ε is the error term.

To test the longrun relationship between variables, the Bound test has been used, which underlays the hypothesis of no cointegration. The value of the bound statistic is compared to the critical values obtained from Narayan (2005). The value of the bound statistic greater than the upper bound value confirms the existence of

cointegration. The long-run estimates of the model are as follows;

$$HC_t = \lambda_0 + \lambda_1 ED_t + \lambda_2 H_t + \lambda_3 ST_t + \lambda_4 IT_t + \lambda_5 Inf_t + \mu_t \quad (2)$$

The short-run estimates are calculated using the unrestricted Error Correction Model, and the equation is specified as follows;

$$\Delta HC_t = \gamma_0 + \sum_{i=1}^p \gamma_{1i} \Delta HC_{t-1} + \sum_{i=0}^p \gamma_{2i} \Delta ED_{t-1} + \sum_{i=0}^p \gamma_{3i} \Delta H_{t-1} + \sum_{i=0}^p \gamma_{4i} \Delta ST_{t-1} + \sum_{i=0}^p \gamma_{5i} \Delta IT_{t-1} + \sum_{i=0}^p \gamma_{6i} \Delta Inf_{t-1} + \psi ECT_{t-1} + \varepsilon_t \quad (3)$$

In equation (3), ECT is the error-correction term which is calculated as follows;

$$ECT_{t-1} = HC_{t-1} - \lambda_0 - \lambda_1 ED_{t-1} - \lambda_2 H_{t-1} - \lambda_3 ST_{t-1} - \lambda_4 IT_{t-1} - \lambda_5 Inf_{t-1} \quad (4)$$

RESULTS AND DISCUSSION

Before estimating short-run and long-run results, this study applied the unit root test described in Table 1. Results show that some variables are stationary in their levels while the rest are integrated at order one.

Table 1: Augmented Dickey-Fuller test results:

Variable	ADF	Critical Values			Conclusion
		1%	5%	10%	
HC	-4.780460	-3.601	-2.935	-2.605	I(1)
ED	-3.016796	-3.318	-2.933	-2.63	I(0)
H	-4.156964	-3.318	-2.933	-2.63	I(0)
IT	-7.805404	-3.318	-2.933	-2.63	I(0)
ST	-2.698025	-3.601	-2.935	-2.605	I(1)
Inf	-4.84242	-3.601	-2.935	-2.605	I(1)

Source: Author estimation

The Wald test has been applied to confirm the cointegration, and the findings are reported in Table 2. Since the value of F-stat is significant at a one percent level of significance, it is concluded that there is the long-run relationship between variables.

Table 2: Wald Test results

T- statistics	Value	Df	Probability
F-statistic	9.880601	(5, 7)	0.0091
Chi-square	29.40300	5	0.0000

Source: Author estimation

RESULTS AND DISCUSSION

This study employs the Autoregressive Distributed Lag (ARDL) model to explore the long-run and short-run impacts of various fiscal measures—specifically,

government expenditure on education and healthcare, income tax, sales tax, and inflation—on poverty in Pakistan from 1980 to 2020. The results highlight the complex relationship between these fiscal variables and poverty, with distinct implications for policy-making.

Long-Run Analysis

As highlighted in the long run coefficients of ED and H indicate that poverty reduces as a result of government expenditure towards education and healthcare respectively. In particular, the result for education expenditure is -0.01999 : this implies that if education expenditure is raised by 1 percent, two percent decrease in the head count poverty rate will be recorded. This significant effect emphasises value of investing in human capital because education helps increase employment and incomes for families so they may rise out of poverty. Consistent with previous research, previous research include the study by Rahman and Chowdhury (2022) the study established that; cash transfer, education expenditure has helped to reduced poverty levels in Bangladesh.

Health care expense also reduces poverty level as determined by the coefficient value of -0.5016 . Even though it is profound than the impact of education it has an impact all the same. Increased health leads to enhancement of labor productivity since man and woman can work and support their lives. This evidence tallies with Garcia and Weiss (2023) study on Sub-Saharan Africa wherein augmented spending on health a crucial inland poverty fighting instrument.

However the coefficients show that Income tax (IT) 0.3543 , as a result meaning that increase in income tax leads to increased poverty levels. This result may be due to the regressive tax system in the current situation in Pakistan where most of the tax burdens the poor people leaving them with hardly any capacity to eat a healthy diet. This result supports other works such as Khan & Qadir (2023) which showed that pro-poorness tax systems deepen poverty given that they put more relative taxation burden on the poor.

The coefficients of the ST and Inf were determined to have no long run effect - with estimated values of -0.1016 and 0.2684 , respectively. The example of sales tax shows that poverty impact of the measure depends on the level of sales tax, which partly support the hypothesis about higher poverty impact in the short run, discussed in detail in the later section. The coefficient of inflation is positive but small and does not give clear evidence about the long-run effects of inflation on poverty.

Table 3: The Long-run Estimates of the Model

Variables	Coefficient	T-statistic	Probability
C	2.4426	3.6450	0.008
ED	-1.0199	-2.4271	0.045
H	-0.5016	-2.1586	0.690
IT	0.3543	1.9307	0.038

ST	-0.1016	-1.3707	0.197
Inf	0.2684	0.9403	0.246
R-square	0.879928		
Prob F-stat	17.062036	0.02036	

Source: Author Estimation

Short run analysis:

Fiscal variables below depicting the short-run dynamics of poverty impact have certain characteristics. The results also show that the coefficient for the education expenditure (D(ED)) is 0.1687 and as such there is no short run effect of education expenditure on poverty. This implies that the returns to educational expenditure are long term in the sense that investment in human capital and subsequent employment the benefits does not accrue instantly. Lindert et al. (2022) also noted similar long lag effects of education expenditure in Latin America where education Expenditure if implemented in the long-term resulted in a massive poverty reducing impact.

The simulated average of the percentage change in parameters is as follows: Healthcare expenditure (D(H)) -0.0096 in the short run is also insignificant. Of course, augmented healthcare spending is productive when embraced in the long-run perspective although its impact is not easily discernible in the short-run. This is in harmony with such findings as those of Sadiq and Ali (2023) who observed that returns of healthcare investments in poverty reduction may take considerable time to manifest themselves. Income tax (D(IT)) has a predicted value of 0.1632 in the short run implying that poverty increases with income taxes as they cut on the amount low income earners have to spend. This confirms with the long-run results and adds further to the call for taxation system reform to ease the woes of the poor.

The result shows that sales tax (D(ST)) also has an effect on poverty in the short-run with the coefficient of 0.4911. The taxation incidence of sales tax is regressive and thus will rather impact the poor, as they spend larger portions of their income on things that are subject to sales tax. This fact can be explained by, for instance, Rehman and Naseer (2019) where research pointed out that indirect taxes including GST (Goods and Service Tax) in Pakistan cause worsening of poverty.

The short-run effect of Inflation (D(Inf)) viscosity has a positive and large effect on poverty, with the coefficient of 1.6265. High inflation reduces even the value of income in that the purchasing power of income is diminished, this compels the households to fall deeper into poverty levels. This result aligns with Anwar and Hussain (2022) emphasizing that inflation is negatively associated with poverty levels in Pakistan, especially in the short run.

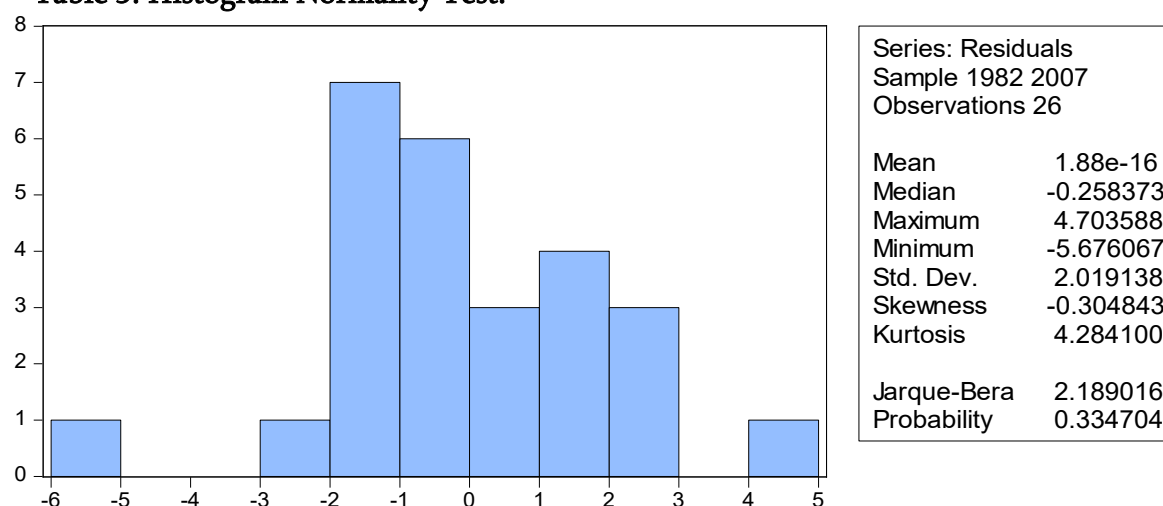
Significantly, ECM coefficient of -0.6654 suggests an average annual error correction of roughly two thirds of the disequilibrium arising from the previous year shock =GD(). This indicates that speed of adjustment back to the long-run is relatively high hence any short-run deviations due to fiscal measures are quickly corrected away implying the neighboring poor level.

Table 4: Short-run Results

Variables	Coefficient	T-statistic	Probability
C	-0.1250	-0.1812	0.8591
D(ED)	0.1687	1.2394	0.1209
D(H)	-0.0096	-0.3118	0.2061
D(IT)	0.1632	1.9748	0.0784*
D(ST)	-0.005	-0.321	0.5920
D(ST(-1))	0.4911	2.4053	0.0233**
D(Inf)	1.626515	3.4430	0.0021***
ECM(-1)	-0.665378	-2.9132	0.0033***

Source: Author estimation

Diagnostic tests are performed to check the stability and reliability of the model. Jarque-Bera test is used to check the normality of the error, and the probability value shows that we have to accept the null hypothesis of normal distribution. At the same time, the LM test is used to check autocorrelation. The results indicate that there is no problem with autocorrelation.

Table 5: Histogram Normality Test:

Source: Author estimation

Table 6: Serial correlation LM test:

F- statistic	0.294504	Prob. F (2,16)	0.7489
Obs* R-Squared	0.923153	Prob. Chi-Square(2)	0.6303

Source: Author estimation

Comparative Impact and Policy Implications:

Among the fiscal measures analysed, education expenditure emerges as the most significant factor in reducing poverty in the long run, highlighting the critical role of human capital development in poverty alleviation. Healthcare expenditure also plays an important role, albeit to a lesser extent. In contrast, income and sales taxes exacerbate poverty, particularly in the short run, underscoring the need for tax reforms that protect low-income households.

These findings suggest that for Pakistan to achieve sustainable poverty reduction, the government should prioritize increasing expenditures on education and healthcare while reforming the tax system to be more progressive. Such reforms could include reducing the tax burden on the poor and increasing taxes on higher-income individuals and corporations, aligning with global best practices observed in countries like South Korea (Kim & Park, 2023) and Latin America (Lindert et al., 2022).

In conclusion, the study's findings highlight the complex interplay between fiscal measures and poverty, with significant implications for policy-making in Pakistan. While increasing government spending on education and healthcare is crucial for long-term poverty reduction, immediate reforms in the tax system are necessary to prevent short-run exacerbation of poverty, particularly for the most vulnerable segments of the population.

REFERENCES

- Ahmed, S., & Shafique, S. (2023). Fiscal decentralization and poverty reduction: Evidence from Pakistan. *Journal of Development Policy and Practice*, 8(2), 178-195.
- Alavuotunki, K., Haapanen, M., & Pirttilä, J. (2017). The consequences of the value-added tax on inequality.
- Alesina, A., & Perotti, R. (1996). Income distribution, political instability, and investment. *European economic review*, 40(6), 1203-1228.
- Ali, M., & Shah, A. (2023). Structural reforms and poverty reduction: A macroeconomic perspective from Pakistan. *Pakistan Journal of Economic Studies*, 32(1), 45-61.
- Anwar, T., & Hussain, Z. (2022). Macroeconomic stability and poverty reduction in Pakistan. *Economic Insights*, 19(3), 245-263.
- Bakija, J. (2014). *Social Welfare, Redistribution, and the Tradeoff between Efficiency and Equity, with Developing Country Applications*.
- Berg, A., Ostry, J. D., Tsangarides, C. G., & Yakhshilikhov, Y. (2018). Redistribution, inequality, and growth: new evidence. *Journal of Economic Growth*, 23(3), 259-305.
- Bhatti, A. A., Batool, Z., & Naqvi, H. A. (2015). Fiscal policy and its role in reducing income inequality: a CGE analysis for Pakistan. *The Pakistan Development Review*, 843-862.
- Causa, O., & Hermansen, M. (2017). The effectiveness of tax and transfer systems in reducing income inequality across OECD countries. *Documents de travail du Département des affaires économiques de l'OCDE*.
- Chandoevrit, W., & Dahlby, B. (2007). The marginal cost of public funds for excise taxes in Thailand. *eJTR*, 5, 135.
- De La Croix, D., & Doepke, M. (2003). Inequality and growth: why differential fertility matters. *American Economic Review*, 93(4), 1091-1113.
- Frenette, M., Green, D. A., & Milligan, K. (2009). Taxes, transfers, and Canadian

- income inequality. *Canadian Public Policy*, 35(4), 389-411.
- Galor, O., & Tsiddon, D. (1997). Technological progress, mobility, and economic growth. *The American Economic Review*, 363-382.
- Garcia, M., & Weiss, A. (2023). Public spending on health and education and its impact on poverty in Sub-Saharan Africa. *African Economic Studies*, 27(1), 34-52.
- Goñi, E., López, J. H., & Servén, L. (2011). Fiscal redistribution and income inequality in Latin America. *World development*, 39(9), 1558-1569.
- Gonzalez, F. M. (2007). Effective property rights, conflict and growth. *Journal of Economic Theory*, 137(1), 127-139.
- Ihtsham ul Haq Padda, & Akram, N. (2009). The impact of tax policies on economic growth: evidence from South-Asian economies. *The Pakistan Development Review*, 961-971.
- Joshi, A., Prichard, W., & Heady, C. (2014). Taxing the informal economy: The current state of knowledge and agendas for future research. *The Journal of Development Studies*, 50(10), 1325-1347.
- Khan, M. H., & Qadir, U. (2023). Tax policy, income distribution, and poverty in Pakistan. *Pakistan Economic Review*, 54(4), 302-319.
- Kim, S. J., & Park, J. H. (2023). The role of tax reforms in poverty reduction: The case of South Korea. *Asian Economic Policy Review*, 18(2), 190-210.
- Lindert, K., Skoufias, E., & Shapiro, J. (2022). Fiscal policies for poverty reduction in Latin America: A comprehensive analysis. *Journal of Economic Inequality*, 20(1), 51-69.
- Maboshe, M., & Woolard, I. D. (2018). Revisiting the impact of direct taxes and transfers on poverty and inequality in South Africa (No. 2018/79). WIDER Working Paper.
- Malik, A., Rehman, H., & Iqbal, M. (2022). Social protection programs and poverty alleviation: The case of the Benazir Income Support Programme in Pakistan. *Journal of Social Policy and Development*, 15(3), 215-234.
- Martinez-Vazquez, J., Moreno-Dodson, B., & Vulovic, V. (2012). The impact of tax and expenditure policies on income distribution: Evidence from a large panel of countries. *Andrew Young School of Policy Studies Research Paper Series*, (12-30).
- Muinelo-Gallo, L., & Roca-Sagalés, O. (2011). Economic growth and inequality: the role of fiscal policies. *Australian Economic Papers*, 50(2-3), 74-97.
- Naqvi, H. A., Masood, M. T., & Naeem, R. A. (2011). Impact of structural adjustment programme on household welfare and inequality-Pakistan a case-in-point for the developing countries. *Management Research*, 4(1).
- Padda, I. U. H. (2014). On minimizing the welfare cost of fiscal policy: evidence from South Asia. *Quality & Quantity*, 48(3), 1553-1572.
- Papanek, G. F., & Kyn, O. (1986). The effect on income distribution of development, the growth rate and economic strategy. *Journal of development economics*, 23(1), 55-65.

- Rahman, S., & Chowdhury, F. (2022). Cash transfer programs and poverty alleviation: Evidence from Bangladesh. *Development Economics Review*, 42(2), 75-91.
- Rehman, F. U., & Naseer, M. (2019). The heterogeneous effects of indirect taxation on child health in Punjab-Pakistan. *Asian Journal of Law and Economics*, 11(3), 1-17.
- Rehman, F. U., & Nasir, M. (2020). In the Same Boat, but not Equals: The Heterogeneous Effects of Indirect Taxation on Child Health in Punjab-Pakistan. *Asian Journal of Law and Economics*, 11(3).
- Rodriguez, F. (2000). Inequality, economic growth and economic performance. A Background Note for the World Development Report.
- Sadiq, N., & Ali, M. (2023). Public expenditure and poverty reduction in Pakistan: Challenges and opportunities. *Journal of Public Economics*, 29(2), 120-139.
- Safdar, F., & Padda, I. U. H. (2017). Impact of institutions on budget deficit: the case of Pakistan. *NUML International Journal of Business & Management*, 12(1), 77-88.