
Fiscal implications for Rural-Urban Poverty of Pakistan

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Abstract

In this study, we try to investigate the fiscal policy empirically inquiry for overall and rural-urban poverty for Pakistan. Fiscal policy has so many economic and social implications for every country of the world, including stable economic development, employment opportunities, and poverty evaluation among others. Generally, supply-side and demand-side fiscal policy tools are utilized to achieve economic and social improvement. The time-series data is employed from 1980 to 2019. To test for both short-run and long-run relationships between fiscal variables and poverty, the Autoregressive distributed lag model (ARDL) is adopted. Pakistan is an important case study because of the emergence of dual rural agricultural traditional and urban modern industrial sectors. The empirical investigation shows that government expenditure and per capita growth have a negative and significant impact on an aggregate and rural-urban poverty. Inflation and public tax have a positive impact on all tiers of poverty.

Key words: Fiscal policy, Rural-urban Poverty, Economic Growth,

I. Introduction

The role of public policy has gained much importance since the Great Depression of the 1930s. The failure of the market mechanism and deficiency in aggregate demand resulted in massive unemployment and higher poverty-focused much attention on the role of government intervention in economic affairs. The developed countries have been trying to sustain the higher level of economic growth and to restrain the trade cycles while the developing countries have been struggling to achieve higher rates of economic growth because economic growth may be good for the poor (Dollar and Kraay, 2002). The ultimate goal of all economic and social efforts of developed and especially developing countries is to reduce the poverty at certain levels and to raise the living standard of the mass population.

Poverty has been a burning issue in the development literature for decades (Lipton and Ravallion, 1995). It persists not only in the developing world but also in the developed world. However, its intensity is has been alarming in the developing regions of the world. Similarly, its incidence exists in urban and rural areas as well. Although the incidence of

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poverty hurts the urban as well as rural households the effect on rural households is significantly severe. The reason behind this is that the urban households have much more opportunities in terms of employment as well as other social services and benefits like education, health facilities, training institutes, skills enhancement programs and freedom of choices, etc, which are very rarely enjoyed by the rural households. But the burden of taxes, especially, indirect taxes are equally borne by urban and rural households. The discrimination in these social services and opportunities limits the productivity of rural households. Thus, the rural poor are trapped in the vicious circle and face unemployment and disguised unemployment. They are forced to draw their livelihood from the traditional sector and by the traditional means and skills. As described by Lewis (1954) that there exist dual economies in developing countries. On the one hand, there exists a modern sector with all facilities and opportunities which are enjoyed by their households while on the other hand, there is a traditional agriculture sector with all its drawbacks and problems. So, these differences in the opportunities and facilities result from a significant difference in the capabilities of the rural-urban households (Sen, 1985).

Many factors determine the economic performance of a country. These factors include natural and human resources, stock of capital such as infrastructure, technology, and individual as well as collective economic choices they made. The most important factor, among others, is the set of macroeconomic policies carried out by the government. The overall performance of an economy is affected by macroeconomic policies. Two major macroeconomic policies often pursued by the governments include fiscal policy and monetary policy. Fiscal policy is concerned with government spending and taxation while monetary policy is used to determine the growth rate of the money supply of the economy which is controlled by the central bank (Ferede&Dahlby, 2012).

Although worldwide efforts have been observed to reduce poverty, however, extreme poverty still exists, especially in the developing world. Different policies have been adopted by the governments from time to time to reduce poverty. Fiscal policy is one of the macroeconomic policies which may have significant impacts on poverty. It is considered a major tool to achieve employment, macroeconomic stability, and sustainable economic growth. Fiscal policy is attributed to allocation, distribution, and stabilization functions which may increase the aggregate demand (Romer, 2001). The impact of fiscal policy can be observed through tax, income, and expenditure strategies. Government spending plays an important role in the reduction of poverty.

According to Keynesian approach, government expenditures may boost aggregate demand which results in enhanced employment and economic growth (Barro, 1990). It is believed that the government expenditure, especially in the social sector, may be helpful to reduce poverty through education, health facilities, and other social benefits as well as subsidies which may target poverty and may be beneficial to uplift the poor. However, as far as the taxes are concerned, these are a progressive redistribution tool. Although the poor pay very little amount of direct taxes such as income and wealth taxes but they pay a lot of indirect taxes which are included in the prices of goods and services they consume especially in the developing countries where the proportion of indirect taxes is greater than direct taxes. Similarly, the increase in inflation due to several international and domestic reasons hurts the poor directly.

Poverty is a serious concern for the economy of Pakistan. In Pakistan, 33% population falls below the poverty line (SDPI, 2012). Moreover, the fiscal deficit has also been a serious concern throughout the history of Pakistan's economy. The persistent budget deficit has deteriorated the situation of poverty and income inequality in Pakistan. Since the indirect taxes and money supply are increased to finance the fiscal deficit, it reduces the purchasing power of the masses and leads them towards poverty (Arifet al., 2011). Fiscal policy may be effective to reduce poverty both, directly by affecting disposable incomes and indirectly through influencing the future earning capacities. Thus, the study focuses on what has been the impact of fiscal policy on the redistributive aspect of incomes and how this can be enhanced to reduce poverty. It is seen that studies conducted in this subject focus mostly on developed countries. This is a fact that a limited number of studies have been conducted in developing countries

The purpose of this study is to analyze the impact of fiscal policy on poverty. In this framework, the study has analyzed the effects of taxes and expenditures on poverty in Pakistan. Although, the relationship between fiscal policy and income inequality has been discussed in the literature, however, no serious study has been carried out to examine the impact of fiscal policy on poverty in Pakistan. Moreover, the impact of fiscal policy has been observed not only on total poverty but also on rural and urban poverty of Pakistan as well. The current study differs from the previous studies in terms of revised data set of total poverty as well as rural and urban poverty also. In this study, the effects of taxes and expenditures on poverty have been discussed with other control variables such as per capita growth financial development, and trade liberalization. The plan of the study is as follows: the next section II explores the relevant literature review and tries to find the research gap. Section III explains the construction of the model, methodology, and data sources of the study. The empirical results of the econometric model discussed in section IV. In the final section, conclusions and policy implications are discussed.

II. Relevant Literature Review

Plenty of work has been done on the relationship between fiscal policy and economic growth. Economic growth may be an engine to derive the people out of poverty (Dollar and Kraay, 2002). The fiscal policy may stimulate economic activity by shifting the level of aggregate demand (Arestis and Sawyer, 2003, 2005; Jouini et al., 2018). Fiscal policy may be an effective tool to achieve a high level of economic growth and poverty reduction with the help of a balanced budget (Sawyer, 2008). Keynes suggests that during an economic recession, a decrease in interest rate via monetary policy is ineffective. The increase in aggregate demand could be brought only by fiscal policy measures (Romer, 2001).

The relationship between fiscal policy and poverty has been observed by different researchers in the economic literature. Different studies have found different results in terms of the impacts of taxes and government expenditures on poverty. Alauddin and Bilquess (1981) and Malik and Saqib (1985) suggested that the resources of the economy may be redistributed through suitable changes in the tax structure while Saint-Paul and Vedier (1993) believed that public expenditures had a significant impact on inequality and poverty. The gap between haves and have-nots may be reduced directly and indirectly through fiscal policy in

Pakistan. Through the direct effect, the disposable income of the individuals may be affected and through the indirect effect, the earning capacities of the future may be affected.

According to Lipton and Ravallion (1995), government intervention may determine the pattern of growth. They explained the policies, other than growth itself, which may contribute to reducing poverty and income inequality. They suggested that through expansionary fiscal policy, the provision of basic social services like education and health may be favorable to reduce poverty and inequality. While on the other hand, Barro (1991) investigate the large panel studied on government expenditure and economic growth and found that government expenditure had a significant impact on economic growth and poverty. Dollar and Kray (2002), have attempted to address the impact of macroeconomic stability and fiscal discipline on poverty. They found that public expenditure on education and health does not have any significant impact on the income of the poor. In contrast, pro-poor growth policies which include macroeconomic stability, trade openness, good rule of law, and fiscal discipline seem to respond to poverty reduction.

Bidani and Ravallion (1997) have found a statistically significant relationship between public spending on health and poverty. Benneth (2007), using the general equilibrium model, examined the role of fiscal policy in alleviating poverty in the case of Nigeria. He found government expenditures an effective tool for income redistribution and poverty reduction. Similarly the impact of taxes on economic growth is determined in case of 21 OECD contries by employing the error correction model between 1970 and 2004 (Xing, 2012). The study, however, showed the impact of corporate and personal taxes on economic growth was insignificant.

For, the developed economies Ferede and Dahlby (2012) pointed out that the high tax rates increased the cost of capital and discouraged investment which adversely affected the economic growth in the Canadian provinces. They further concluded that taxes also negatively affected the saving decisions of the households, labor supply, and investment decisions in human capital which may reduce economic growth and increase poverty. Ojede and Yamarik (2012) also conducted the research of the short run and long-run correlation between taxes and economic growth in 48 states of the U.S for the period 1967 to 2004 using ECM. They found that that personal income had a positive and significant effect on economic growth while taxes had a negative impact on economic growth.

Zellner and Ngoie (2015), using the Marshallian macroeconomic model also analyzed the impact of tax on economic growth and poverty in the United States between the periods 1987 to 2008. The findings were that taxes had a negative impact on economic growth and a positive impact on poverty. Atems (2015), using the partial Durbin model, explored the effects of taxes on economic growth in the United States over the period 1967 to 2008. The findings revealed that the taxes were negatively associated with economic growth showed a negative relationship between taxes and economic growth.

Lustig (2016) analyzed the impact of fiscal policy on poverty and inequality in several Latin American countries. They came to some interesting conclusions such as the redistributive impact of progressive direct taxes is small, while, the poor pay a higher share of their incomes in the form of indirect taxes which off-sets the impact of cash transfers for poverty reduction especially in Brazil and Bolivia. They further concluded that expenditures on education and health were more effective for poverty reduction. Stoilova (2017) explored

the relationship between tax structure and economic growth using the data from 28 European Union countries for the period 1996 to 2013 and established the correlation between total revenue and economic growth. The positive impact of personal income tax had been observed on economic growth. Corporate taxes were negatively associated with economic growth. Some studies were of the view that there was no correlation between taxes and economic growth (Xing 2012 and Myles 2000). Myles (2000) analyzed the link between taxes and economic growth in the UK for the period 1950 to 1998. The study found that the relationship between tax and economic growth is very weak and in practice taxation did not affect the rate of growth.

For Pakistan, Rashid and Kemal (1997) studied the impact of macroeconomic policies on poverty reduction. They found that poverty levels may be changed over time with a five percent growth level and an increase in employment and remittances. Farooq and Ahmad(2020)using the ARDL technique, tested the link between poverty, inflation, and economic growth from 1972 to 2008. The study concluded that economic growth has a negative impact on poverty, while inflation has a positive impact on poverty while trade has no significant impact on poverty. Mehmood and Sadiq (2010) tested the relationship between government expenditure and poverty from 1976 to 2010. They used the ECM model and Johnson Co-integration Technique. This study concluded that government expenditure had a negative and significant impact on poverty.

When we review the literature, fiscal policy considered is an important variable to improve the overall macroeconomic performance and social progress of developing economies. This study investigates the different measures of fiscal variables and their impact on aggregate as well as rural-urban poverty for Pakistan. Even though much literature is available on poverty yet limited studies dedicate the role of fiscal variables in the reduction of rural-urban poverty in Pakistan. Hence, this study is an attempt to fill the gap in prior literature and tries to investigate the impact of both side fiscal variables on rural-urban poverty. The next sections of the paper explore the relevant literature, theoretical model, empirical strategy and draw possible conclusions respectively.

III. Theoretical Framework, Model and variables

The present study is following the poverty model of Foster, Greer, and Thorbecke, (1984) due to axiomatic properties. Total poverty P_α is shown below:

$$P_\alpha = \int_0^z \left[\frac{z-y}{z} \right]^\alpha f(y) dy \dots \dots \dots (1)$$

where z shows pre-defined poverty line, the household income (y) with the density function is $f(y)$ that also shows living standard of households, and α is a positive coefficient. Suppose a budget of T for use in poverty reduction has available to a policy-maker. We assume that the finances for this budget have already been raised by a process which need not concern those who decide how to spend the available money. Consider the function before transferring cash to reduce poverty be:

$$P_\alpha(y; z) = \frac{1}{n} \sum_{i=1}^q \left[\frac{g_i}{z} \right]^\alpha \dots \dots \dots (2)$$

Where $g_i = z - y_i$. We assume the situation when X (income vector of population before cash transfers t_i , ($i = 1, 2, \dots, q$)) is perfectly pragmatic. It follows that the optimal transfer allocation in the discrete setting is as:

$$MinP_\alpha(y; z) = \frac{1}{n} \sum_{i=1}^q \left[\frac{g_i - t_i}{z} \right]^\alpha \dots \dots \dots (3)$$

Subject to:

$$\sum_{i=1}^q t_i = T \dots \dots \dots (4)$$

where n denotes the size of population, the allocated budget is T , and the non-negative cash transfer is t_i to household i . The household size is being weighed with objective function to deal poverty at individual level. Nevertheless, we ignore for the moment that households may consist of large number of individuals for analytical simplicity. We do not consider how the budget T is financed. The solution to this problem is mentioned to as ‘perfect targeting’ when X is perfectly observable. Bourguignon and Fields (1990, 1997) mention ‘r-type transfer’ that refers the perfect targeting to optimize head count ratio with $\alpha < 1$, so that richest of the poor may be lifted out of poverty leaving minimum people the poverty line.

The "p-type policy" is the opposite case. The transfer is received by poorest of the poor that gets all the poor at same level but below the poverty line. For $\alpha > 1$, the measure P_α is optimized with p-type policy. The reason behind this policy is the convex decreasing function of P_α of individual incomes that shows more sensitivity of transfers at the bottom of the distribution rather at the top. The optimal allocation with budget T is given as:

$$t_i = y_{max} - y_i \dots \dots \dots (5) \quad i = 1, 2, \dots, q$$

$$t_i = 0 \quad i = p + 1, \dots, q$$

with y_{max} and p given by:

$$\sum_{i=1}^{p-1} (y_p - y_i) \leq \sum_{i=1}^p (y_{max} - y_i) = T \leq \sum_{i=1}^p (y_{p+1} - y_i) \dots \dots \dots (6)$$

Where y_{max} is the highest income from possible budget to be cut-off. The y_{max} surges up to the poverty line, z , with the increase of anti-poverty budget. For the poverty gap ($\alpha = 1$), both rules of transfer allocation are equivalent provided the poor’s incomes have never been raised above the poverty line. But, it is not possible to observe incomes perfectly that implies the perfect targeting is not feasible. However, it is possible to minimize expected measures of poverty with available budget for transfers as living standards of the households are connected with some recognizable features (Glewwe, 1992). In the literature, the transfer scheme has been designed to replace unobserved standards of living by predictions which are based on observed variables.

First of all, recall the definite technique used in prior literature for such predictions. A number of empirical studies in the literature have determined anti-poverty targeting (Ravallion and Datt, 1995). Generally, the two-step procedure is followed, firstly, the income

vector correlates with household is conditioned with the expected determined through OLS. Secondly, the predicted household in poverty gets the difference between poverty line and predicted income. In such regressions, other dependent variables could be considered along with the objective function of different specifications. Our technique uses the headcount ratio as a dependent variable, so the model is adapted accordingly. We now turn to the results estimations by presenting data taken for estimations:

$$HC = (FD, GE, PC_g, TAX, INF, TR) \quad (7)$$

Where, HC= total headcount, FD= is proxy of financial development measured as a credit to the private sector as a share of GDP, GE= indicate the demand side of fiscal policy used as total government expenditures as a share of GDP, PC_g= per capita growth rate, Tax= supply side of fiscal policy as total tax revenue as a share of GDP, INF= Inflation is measure as GDP deflator,

TR= Trade intensity as an export plus imports divided GDP, The econometrics model can be written as the following in equation 8 below.

$$HC_t = \alpha_0 + \alpha_1 FD_t + \alpha_2 GE_t + \alpha_3 PC_{gt} + \alpha_4 TAX_t + \alpha_5 TR_t + \mu t \quad (8)$$

Where, HC_t total head count, while μt is an error term and t stand for time. The main contribution of this study is to investigate how fiscal policy and other macroeconomic variables impact on rural-urban head count. For urban head count equation-9 as follow

$$UHC_t = \beta_0 + \beta_1 FDt + \beta_2 GELt + \beta_3 PCgt + \beta_4 TAXt + \beta_5 TRt + et \quad (9)$$

Where, UHC_t stands for the urban head count with the same independent variable discuss above equations 2 and 3. The growth of the income, fiscal reforms of the nation has what type of impact on rural head count. This relationship has more importance in the case of Pakistan because there is rural-urban physiology as discuss by (Ali, et al., 2020; Arif, et al., 2011). The estimated equation of RHC_t and independent variables in equation-10 as below

$$RHC_t = \gamma_0 + \gamma_1 FDt + \gamma_2 GEt + \gamma_3 PCgt + \gamma_4 TAXt + \gamma_5 TRt + Vt \quad (10)$$

Where, RHC_t = rural head count, in the model Vt is an error term and t for time series analysis with same set of explained variables.

III.1 Auto-regressive distributed Lag Model (ARDL)

For the econometric analysis, we employ the Autoregressive distributed lag model (ARDL) co-integration model to investigate the fiscal implication for poverty in Pakistan. This approach is introduced by (Pesaran and Shin, 1999) and later on, this approach is further augmented by (Pesaran, et al., 2001) and Narayan (2005) named the ARDL co-integration bounds test approach. This model is more appropriate for the different stationary levels of the variable. Second, this model is more powerful properties against small data samples. The

estimated equation for F-statistics is communicated as can be writing as with the following three-time series such as y, x, z as below:

$$\Delta Y_t = a_0 + a_1 Y_{t-1} + a_2 X_{t-1} + a_3 Z_{t-1} + \sum_{i=1}^p \beta_1 \Delta Y_{t-1} + \sum_{j=0}^q \beta_2 \Delta X_{t-1} + \sum_{k=0}^r \beta_3 \Delta Z_{t-1} + u_t \quad (11)$$

In equation no- 11 a_1, a_2, a_3 and $\beta_1, \beta_2, \beta_3$ shows that the coefficients of long and short span of the time for F-statistics while, p, q, r represents the optimal length of the variables. Where a_0 explain the constant term and u_t represented the normally distributed error term. For hypothesis testing the null hypothesis as $H_0 : a_1 = a_2 = a_3 = 0$ there are no linear combinations exists among variables. The alternative hypothesis can be written as $H_1 : a_1 \neq a_2 \neq a_3 \neq 0$ said to be conform the long-run equilibrium exist between variables. This approach is more reliable and flexible for the different lag of the dependent and independent variables. The next step tries to scrutinize the short-run dynamics of the concerned variables. For short-run coefficient speed of adjustment towards long-run equilibrium equations-12 written as bellows

$$\Delta Y_t = \sum_{i=1}^p \beta_1 \Delta Y_{t-1} + \sum_{j=0}^q \beta_2 \Delta X_{t-1} + \sum_{k=0}^r \beta_3 \Delta Z_{t-1} + \eta ECM_{t-1} + \varepsilon_t \quad (12)$$

Where, ECM_{t-1} represents the lagged error correction terms which calculates the speed of adjustments of the short-run movements towards long-run convergence point of equilibrium.

IV. Empirical results and discussions

For, stationary this study uses an augmented dickey fuller test because of most of the macroeconomics series unit root problem (Non-stationary). When we use non-stationary series for co-integration it may provide less predicting power of the coefficient. The unit root test is normally for the single variable test if the variable has zero mean, constant variance, and zero covariance and the error term is white noise (follow the normality property). Table-1 reports the level of stationary below. Per capita growth and trade liberalization are stationary at the level $I(0)$. While, overall, urban and rural poverty are the first difference stationary $I(1)$. Financial development, inflation rate, and fiscal variables are also different stationery. The concluding remarks are that our all series are mixed order of stationary level. We also discuss the pre-conditions for ARDL co-integration in methodology. Our data set is more appropriate for the ARDL as suggested by Pasrian (2001) and later on Narayan (2005).

Table1. Stationarity Test

Variables	T-statistic I(0)	Lages	T-statistic I(1)	Lages
HC	-0.606	0	-8.055*	1
UHC	-1.024	1	-9.072*	1
RHC	0.272	0	-9.565*	1
FD	-1.354	0	-4.611**	1
GE	-1.406	0	-6.181*	1
PCg	-3.366**	0	-7.046*	2

TAX	-1.366	0	-5.871**	1
INF	3.557	0	-4.643**	1
TR	-2.344***	0	-7.470*	1

*,**,***, indicates the 99%, 95%, 90% level of significance

For, co-integration hypothesis decision making on the base of F-statics of all possible three equations are reported in table-2 below. On behalf of the estimated results, to reject the null hypothesis of no co-integration among the estimated variables and accept the alternative hypothesis of co-integration that exists among the estimated models. While all other equation shows that we can reject the null hypothesis at 5% of significant. The nutshell is that there is exists a long-run relationship overall and rural-urban poverty and fiscal variables. The next outcomes are to discuss the long-run coefficient.

Table 2.Results of Bounds F-Sstatistics Test for Co-integration

Equation	F-Statistics	Critical Value Lower Bound	Critical Value Upper Bound	Conclusion
HC=FD,GE,PCg,Tax,INF,TR (1,1,1,0,0,1,0)	9.137 (95%)	2.27	3.28	Co-integration
UHC=FD,GE,PCg,Tax,INF,TR (1,1,1,0,0,1,1)	8.826 (95%)	2.27	3.28	Co-integration
RHC=FD,GE,PCg,Tax,INF,TR (1,1,1,1,0,1,0)	11.40 (95%)	2.27	3.28	Co-integration

95% shows the level of significance of F-statistics calculated

Now, this study explains the behavior of the long-run coefficient between poverty and fiscal policy variables in table-3. The empirical result shows that government expenditure has a negative and significant impact on rural-urban poverty. The empirical investigation supports the finding by Bidani and Ravallion (1997) Lipton and Ravallion (1995), and Benneth (2007) have found a statistically significant and negative relationship between public spending and poverty. On the other side, supply-side fiscal policy has a positive and significant impact on the rural-urban poverty of Pakistan. The empirical outcomes support Lustig (2016), Zellner and Ngoie (2015) and Besley and Kanbur (1998). High tax rates increased the cost of capital and discouraged the investment level which adversely affected the economic growth. Taxes also negatively affected the saving decisions of the households, labor supply, and investment decisions in human capital which may reduce economic growth and increase poverty.

The empirical outcomes show that financial development and trade liberalization has a positive impact on overall and rural poverty but it reduces urban poverty. The reason behind this is that the urban population has much more opportunities in terms of financial innovations, skill enhancement, employment opportunities as well as other social services

benefits like education, health facilities, and training institutes. The role of the financial instruments is favorable to reduce poverty in the urban or industrial sector in Pakistan because the financial sector offers immediate funds to business firms and in return, those business firms generate more labor demand for the growth of their businesses. Results strongly support Lewis (1954) and (Sen, 1985) that financial institutions have a significant contribution to reducing poverty in urban areas through trade and economic development and, employment generation in the economy of Pakistan.

Economic growth is an important variable to reduce the poverty level in all developed and developing economies. Most of the previous studies also support that economic growth has a direct impact on poverty reduction. The empirical investigation confirms that per capita growth has a negative and significant impact on aggregate as well as rural-urban poverty in the long-run. The result related with Barro, (1990), Romer, (2001), and Dollar and Kraay, (2002) also concluded that level of economic development with sound fiscal arrangements have a significant impact on poverty reduction. On the other hand of macroeconomic instability, a variable (inflation) has a positive but insignificant impact on poverty.

Table 3. Long-run Estimates of Fiscal policy and Poverty

Variables	Model-1 HC Level Equation	Model-2 UHC Level Equation	Model-3 RHC Level Equation
FD	0.0918 [.443]	-0.222 [.063]***	0.259 [.078]***
GE	-0.329 [.000]*	-0.219 [.039]*	-0.932 [.003]*
PCg	-0.755 [.000]*	-0.851 [.000]*	-0.494 [.034]**
TAX	0.036 [.895]	0.189 [.408]	0.766 [.220]
INF	0.052 [.000]*	0.037 [.000]*	0.037 [.007]*
TR	0.131 [.049]**	-0.067 [.505]	0.133 [.314]
Constant	3.891 [.000]*	2.477 [.000]*	3.697 [.000]*

Level of significance*, **, *** is reported in the [Prob.] at the level of 1%, 5% and 10% respectively.

The short-run results are reported in table-4. Fiscal policy plays an important role to control poverty in Pakistan. Government expenditure has a negative and significant role to reduce poverty because government expenditures have created employment opportunities through the provision of public goods. Financial development and trade liberalization have also a significant impact on poverty reduction in overall and urban poverty but not in the case of rural areas. The main reason is that the movement of capital towards urban areas due to trade liberalization day by day in the industrial sector among others. The tax rate hurts urban

poverty in the short run but the positive impact of rural poverty. Price level results are more important for short-run behavior. The empirical investigation shows that inflation has a positive impact on poverty because in the first stage inflation causes a reduction in the real income of the consumers. It may reduce the aggregate demand of the consumer at a later stage. Per capita growth plays an important role to reduce rural-urban poverty.

Table 4. Short run Estimates of Fiscal policy and poverty

Variables	Model-1 Δ H/C	Model-2 Δ UHC	Model-3 Δ RHC
Δ FD	-0.737 [.000]*	-0.400 [.051]***	0.614 [.001]*
Δ GE	-0.093 [.544]	-0.623 [.014]**	-0.198 [.052]***
Δ PCg	-0.262 [.025]**	-0.131 [.049]**	-0.379 [.001]*
Δ TAX	-0.524 [.015]**	-1.44 [.002]*	0.673 [.002]*
Δ INF	0.191 [.001]*	0.097 [.112]	0.209 [.001]*
Δ TR	-0.248 [.040]**	-0.097 [.006]*	0.242 [.036]**
ECM _{t-1}	-0.225 [.000]*	-0.661 [.000]*	-0.150 [.000]*
R ² /DW	0.94/2.2	0.96/2.3	0.97/1.9

Level of significance*, **, *** is reported in the [Prob.] at the level of 1%, 5% and 10% respectively.

Now talk about the Error term for short-run speed of adjustment towards long-run equilibrium. The sign of the error term shows that movement direction if the ECM term with the positive sign it means there is no long-run equilibrium exist in variables of the model (divergence case). On the other hand, the sign of the ECM term has negative and significant which means there is long-run equilibrium attained by the speed of this term (convergence case). The empirical result shows that the calculated lag error term has negative and significant at a 1 percent level of significance. The short-run also justified the long-run co-integration of the dependent (poverty) and other independent variables in Pakistan.

V. Conclusions and Policy

The main objective of this study is to the analysis of fiscal implications for rural-urban poverty in Pakistan. For, this work a secondary data set is investigated from 1980 to 2019. Some relevant econometric models are used to enhance the reliability and validity of the estimated results. The empirical investigation pointed out those government expenditures as a share of GDP hurt rural-urban poverty. While on the tax side has no significant impact on rural-urban poverty. The poor pay fewer amounts of direct taxes such as income and wealth taxes but they pay more indirect taxes. In developing countries, consumers pay more proportion of indirect taxes as compared to direct taxes because they consume more income

shares on consumer items. Similarly, the increase in inflation due to several international and domestic reasons hurts the poor directly. Most surprising results about trade liberalization and financial development, both variables have a negative and significant impact on urban poverty reduction but not effectively work for rural poverty in Pakistan. When we talk about aggregate macroeconomics performance hurts all ties of poverty.

For the policy implication, the government should increase the social benefits such as food steps, income support through minimum wage for unemployment benefit. Provision of public goods and services such as education and better health, financial invocation, and social overhead capital for investment have a more effective tool to overcome poverty, especially in rural areas. In the open capital economic system, public intervention may be more beneficial for trade openness and capital formation. However, as far as the taxes are concerned, the government should increase the volume of the progressive tax such as income, wealth, and property because the poor have to pay a significant amount of direct taxes such as income and wealth taxes but they pay a lot of indirect taxes which are included in the prices of goods and services they consume especially in the developing countries where the proportion of indirect taxes is greater than direct taxes. Similarly, the increase in inflation due to several international and domestic reasons hurts the poor directly. Trade liberalization has so many implications for developing economies because they have still based on the traditional agricultural sector. At the first stage, government protection may improve the comparative advantages for this sector. In the later stage, this sector may increase the efficiency to compete for foreign trade.

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