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# *Fiscal Imbalances, Poverty and Inequality in Pakistan*

**SUMMARY:** This paper has analyzed the fiscal imbalances, poverty and inequality with relevance to Pakistan. We use time series data from 1981 to 2010 and employ Autoregressive Distributed Lag Model (ARDL) to cointegration for estimation. The empirical findings suggest that fiscal deficits increase the poverty level and provide biases for inequality. Since deficit is financed through money supply, government debt and indirect taxes which threaten the purchasing power of the poor and drag them towards poverty. Indeed most of government spending is misallocated due corruption and weak institutions; consequently money accumulates in few hands which wider gap between rich and poor, hence generates inequality.

**KEYWORDS:** Fiscal imbalances, poverty, inequality

**JEL CODE:** classification: H5, E62, D31, I32

Large fiscal imbalances have been witnessed for the last two decades in Pakistan economy, which, emerged mainly from inadequate financial resources, large development project, and low level of domestic savings. Fiscal deficits are the root cause of macroeconomic instability, sustainable debt burden, high inflation, high interest rate, and lager tax burden on the taxpayers, which further spurs the poverty level and inequality. Fiscal deficits may be responsible for causing poverty and inequality from the following aspects.

Firstly, often fiscal imbalances are converted into monetary mismanagement, this can however be happened when government finances its deficits through money supply (See Chaudhary and Ahmad, 1995; Serban and Altar, 2002; Fujiki, 2001; Serfraz and Anwar, 2009; Keith, 2005; Tiwari and Tiwari 2001; and Catao and Terrones, 2003. Printing of new currency depress the values of money

generating inflation in economy, which erodes marginal propensity to consume (MPC) of masses due to poor economic performances, structural instability and pulling people towards poverty, especially the people living already below the poverty line.

Secondly financing fiscal deficit through debt: government can borrow funds from number of sources including the central bank, domestic commercial banks, domestic non-bank sectors, and external sources (see Fan, 2007; Hameed et al 2008; Agha and Khan, 2006; and Holloway, 1988). Bank deposits when used to finance deficit, instead of financing private sector it will be resulted in crowding out, thereby reducing private investment in the economy, which obviously increases the interest rate, slow down the economic growth. However financing fiscal deficits through debt for long time has its cost because the debt will be accumulated in future by charging high taxes that ultimately squeeze the purchasing of common men, which means that we are converting poverty to our future generations.

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Thirdly indirect taxes, which is the primary sources of the government revenues, government taxes may be direct and indirect, though the share of direct tax has been increased, yet, and indirect taxes are broad based and paid by everyone. A large portion of Pakistani people of income has gone in paying these indirect taxes. Tax in general and indirect tax in particular reduces purchasing power of lower salaried class; hence pull down their standard of life.

Pakistan being succumbed to a variety of social evils like terrorism, uncertain political environment, ethnic and religious complexion etc. Besides all of them, corruption is also an enormous ghost that has threatened almost every pulse of activity, which emerged from weaknesses in public institutions and distortions in economic policies that gave rise to rent seeking by public officials and the incubation of corrupt practices (George and Gupta, 2000). Corruption misallocates funds and money accumulates in few hands that wider gap between rich and poor, hence generates inequality. Number of studies including Mauro 1995, Knack and Keefer 1995, Knack 1996, Keefer and Knack 1997, Mo 2001, Pellegrini and Gerlagh 2004 discussed the effect of corruption on various economic variables like growth and income.

The objective of the research paper is to establish relationship between fiscal imbalances and poverty and inequality with relevance Pakistan economy. Like other sociological sciences poverty is also discussed in economics

but however poverty and inequality should be an economic problem first, then a political and social problem.

### FISCAL AND MONETARY POLICY REGULATIONS AND POVERTY TREND IN PAKISTAN

There is close link between monetary and fiscal policies in Pakistan’s economic history and both have a complementary status. Pakistan’s fiscal system is characterized by a weak tax base and an inequitable incidence of taxation, combined with structural rigidities on the expenditure side. (Sherani, 2006) and therefore the fiscal deficit remains a common phenomenon in Pakistan’s economic history. Despite the robust growth of GDP in 2003 and onward; the consistent declination has been witnessed in tax-GDP ratio. The economy tax is highly dependent on manufacturing sector and sectoral share of GDP figures show 63% revenues are collected from industrial sector; see *Table 1* for setoral share in GDP and their tax contributions.

Agriculture which is second largest sector of GDP and generates only 1% revenue and service sector contributed 52.4% of GDP and contributes 26% of total tax revenue. The ignorance of agriculture sector is also a factor responsible for imbalance in government outlays and revenues. In addition the weak tax base is primarily dependent on indirect taxes that have contributed at their peak up to 76%

*Table 1*

#### SECTORAL SHARES IN GDP AND TAX REVENUE, %

	Share in GDP	Chare in revenue
Agriculture	47,6	1
Manufacturing	26,4	63
Services	52,4	26

Source: Ministry of Finance – Pakistan Economic Survey 2010

of overall tax revenues in 1993; that gradually decline to 60.4% in 2010. Conversely, the volume of direct tax increased from 15% in 1990s to 39.1% in 2010. Pakistan fiscal policy remained under pressure due to consistent security related issues and subsidies etc, which affected unplanned expenditures. In order to finance the fiscal deficits government borrowed heavily from external and internal resources and large amount of money was paid against the interest payments. There is however increasing trend in fiscal deficit but it recorded at highest level (7.3%) in 2007 *Table 2* presents fiscal deficits, total revenues and real GDP in different years.

There is however dynamics in fiscal deficit, the highest level 8.8 percent of GDP recorded in 1991; the second highest level was 7.3 percent in 2008 and third high level of deficit is estimated as 6.6 percent in 2001. Deficits after reaching at peak level and thereafter tend to decline and than raise indicating the dynamic behavior and similar behavior is seen in GDP growth and total revenue.

Monetary policy also has importance and in fact fiscal domination has traditionally manifested itself in the formulation of the

annual credit plan where the government's budgetary borrowing needs take precedence over the rest of the economy (Sherani, 2006). Monetary regimes can be decomposed into prior 1990's regime and post 1990's regime. State Bank of Pakistan (SBP) is soul responsible for conducting monetary policy in Pakistan and different tools and instruments are used via direct and indirect mechanism. Direct tool are mostly seen in initial regime (before 1990's) and indirect instrument are practiced in later regime (after 1990's). In direct regime control SBP regulates the money supply in the economy through change in the cash-reserve ratio or changes to the credit ceilings and to the credit-deposit ratio. However SBP's monetary polices seems ineffective during the mid-1990s and onward due to government's substantial deviations from the original credit plans targets on budgetary borrowing (Sherani, 2006). Nevertheless this indicates that credit plan targets for M2 growth have been continuously increased. Monetary policy is mainly in pursuit of targets set by the government for growth and inflation according to the monetary aggregates and reserve money. The objectives of the monetary policy

*Table 2*

**FISCAL INDICATORS AS PERCENT OF GDP, %**

Year	Real GDP Growth	Overall Fiscal Deficit	Expenditure			Revenue		
			Total	Current	Development	Total Rev.	Tax	Non-Tax
1990–1991	5,4	8,8	25,7	19,3	6,4	16,9	12,7	4,2
1994–1995	5,1	5,6	22,9	18,5	4,4	17,3	13,8	3,5
2000–2001	0,4	6,6	19,2	15,5	3,6	14	9,1	4,9
2005–2006	5,8	4,2	18,7	14,4	4,3	14,2	10,4	3,8
2006–2007	5,5	4,1	19,5	14,9	4,7	14	9,6	4,4
2007–2008	5	7,3	21,4	17,4	4,2	14,1	9,9	4,2
2008–2009	0,4	5,2	19,2	15,5	3,6	14	9,1	4,9
2009–2010	2,6	6,2	20,2	16,7	3,5	14	10,1	3,9

had mostly been setup in compliance with the stated realm of the SBP Act 1956 (Qayyum and Malik 2011). It has been observed that in the periods when economy was growing in slower mode monetary policy was kept tight and in booming period loose monetary policy is adopted.

There has been an increasing trend in poverty level after 1990s; as it increases from 26.8 percent in 1992 to 30.6 percent in 1999 mainly due increase in rural poverty and urban poverty decline in this period. The rising trends in overall poverty continued until 2000/01 period, but this time the increase was both in rural as well as urban areas. (Arif and Farooq, 2011). Several factors are responsible for this increasing trend of poverty including economic instability, persistence of wide fiscal and current account deficits. In fact the inflows of foreign remittances which can play a significant role in elevating the poverty level, which also observed declining since 1990's.

### ECONOMETRIC METHODOLOGY:

Auto Regressive Distributed Lag (ARDL) approach is used to analyze the impact of fiscal imbalances with poverty along different variable. The Pesaran and Shin 1995, 1999 and Pesaran et al. 2001 ARDL techniques have significance to estimate both long run and short parameter regardless of order of integration conversely other approaches like Johans (1991, 1995) and Engel and Granger (1980) require the order of integration. ARDL has desirable feature and gain prominence against in conventional techniques; especially it is capable of evaluating the short or finite data set. Our econometric mode comprises poverty (Pov) as dependant variable, GNP per capita, Fiscal deficit (FD), Gini coefficient (Gini) and indirect tax(Tax) as explanatory

variables. The Auto regressive distributed lag model will form as follow;

$$\Delta \ln Pov_t = \alpha + \sum_{i=1}^p \Delta \beta \ln GNP_t + \sum_{i=1}^q \Delta \lambda \ln FD_t + \sum_{i=1}^r \Delta \psi \ln Gini_t + \sum_{i=1}^s \Delta \omega \ln Tax_t + \delta \ln Pov_{t-1} + \gamma \ln GNP_{t-1} + \phi \ln FD_{t-1} + \Omega \ln Tax_{t-1} + U_{t...} \quad (1)$$

$\beta, \lambda, \psi, \omega$  shows the short run elasticities, while  $\delta, \gamma, \eta, \phi$  and  $\Omega$  determine the long estimations, we will follow three step approach for estimation of ARDL model. In first step we estimate the equation (1), in second step we investigate the existence of long run relationship; following null hypothesis as

H0:  $\delta = \gamma = \phi = \eta = \Omega = 0$  (there is no long run relationship amongst the variables)

H1:  $\delta = \gamma = \phi = \eta = \Omega \neq 0$  (there is long run relationship amongst the variables)

The hypothesis is tested through both Walt test and F-statistics, if null hypothesis is rejected one may then precedes the third step to estimate long run elasticities as

$$\ln Pov_t = \alpha + \sum_{i=1}^p \beta \ln GNP_{t-1} + \sum_{i=1}^q \lambda \ln FD_{t-1} + \sum_{i=1}^r \psi \ln Gini_{t-1} + \sum_{i=1}^s \Omega \ln Tax_{t-1} + U_{t... i=0,1,2,3,4...n} \quad (3)$$

The equation 3 shows the long run elasticities, however there might be a short run deviation from long run equilibrium therefore error correction model (ECM) is a good framework. The ECM model can be computed as

$$\Delta \ln Pov_t = \alpha + \sum_{i=1}^p \Delta \beta \ln GNP_{t-1} + \sum_{i=1}^q \Delta \lambda \ln FD_{t-1} + \sum_{i=1}^r \Delta \psi \ln Gini_{t-1} + \sum_{i=1}^s \Delta \omega \ln Tax_{t-1} + \phi ECT_{t-1} + U_{t... i=0,1,2,3,4...n} \quad (4)$$

Where ECT indicates error correction term and the lag value of ECT measures the speed of adjustment, negative sign  $\phi$  will imply that

model holds convergence property towards long run equilibrium, otherwise positive  $\varphi$  will indicate the diverging property from long-run equilibrium.

The data for our variables are obtained from World Bank Database online, Federal Bureau Statistics of Pakistan and various issues of Economic Survey of Pakistan, the analysis covered period from 1981 to 2010. Poverty is taken as head count poverty ratio (average of rural and urban), Gini coefficient are presented in ratio format and remaining variables are taken into million. All the data are transformed into log form in order to bring linearity amongst the included variables.

### EMPIRICAL FINDINGS

Microfit 05 has been used for empirical estimation, we adopt Schwarz Bayesian criteria

for lag selection, in fact lag selection is a very sensitive process and can affect the long run estimation because lag values in equation (1) determine the long run elasticities. We estimate equation (1) and came up with following outcomes

Table 3 shows equation (1) findings, which comprise time differences  $\Delta$  and time lag ( $t-1$ ) estimations, reveals that all the difference ( $\Delta$ ) and lag ( $t-1$ ) however this equation primarily estimates for lag value that further used in wald test and test hypothesis. In order to verify the existence of long run relationship we compute F-statistics and compare it with lower and upper bound of Peasaron (2001) values. The computed F-statistics value is 4.5 which, exceeds form upper bound of tabulated value (3.5) at 5 percent level of significant with no trend and unrestricted intercept. Indeed Wald statistics also verify the existence of long run relationship; Table 4 shows the Wald-statistics results.

Table 3

#### AUTOREGRESSIVE DISTRIBUTED LAG ESTIMATES ARDL(0,0,0,0,0) SELECTED BASED ON SCHWARZ BAYESIAN CRITERION

Dependent variable is:  $\Delta \ln POV$

28 observations used for estimation from 1981 to 2010			
Regressor	Coefficient	Standard Error	T-Ratio[Prob]
A	-2,1366	5,4150	-0,39456[,698]
$\Delta \ln GNP$	-0,93865	1,2941	-0,72532[,478]
$\Delta \ln FD$	0,22655	0,21245	1,0664[,300]
$\Delta \ln GINI$	0,21727	0,28744	0,75588[,459]
$\Delta \ln TAX$	0,02612	0,11450	0,22819[,822]
$\ln POV(-1)$	0,47284	0,21388	2,2108[,040]
$\ln GNP(-1)$	-0,75691	0,25623	-2,9540[,008]
$\ln FD(-1)$	0,48329	0,24122	2,0035[,060]
$\ln GINI(-1)$	0,46293	0,28289	1,6364[,119]
$\ln TAX(-1)$	0,18069	0,11180	1,6163[,123]

R-Squared .8591

R-Bar-Squared .78863

DW-statistic 2.0556

After confirmation the existence of long run relationship our next task is now the long-run elasticities. *Table 5* shows long run estimations;

Long run estimations also reveal that all included explanatory variables have positive association with poverty except GNP, which holds a negative and significant signs with poverty. Long run equilibrium comprises a large of span of time, and it likely to have short run deviation therefore Error correction model (ECM) would be a good framework. *Table-6* shows ECM results (*see Table 6*).

ECT is the error correction term and it measures degree and speed of adjustment. Negative and significant sign of ECT implies

that model is converging towards long-run equilibrium.

Overall these findings suggest that fiscal deficits enlarge the poverty level both in short and long run, further it increase the inequality and indeed indirect taxes also increase poverty level that leads towards inequality.

### CONCLUSION

This paper has analyzed fiscal deficits along with poverty and inequality for Pakistan. I use time series data from 1981 to 2010 by taking poverty dependant variable and Fiscal defi-

Table 4

#### WALD-TEST

Based on ARDL regression of DPOV on:

$\Delta \ln GNP$   $\Delta \ln FD$   $\Delta \ln GINI$   $\Delta \ln TAX$   $A$   
 $\ln POV(-1)$   $\ln GNP(-1)$   $\ln FD(-1)$   $\ln GINI(-1)$   $\ln TAX(-1)$

Coefficients A1 to A10 are assigned to the above regressors respectively.

List of restriction(s) for the Wald test:

$a_6+a_7+a_8+a_9+a_{10}=0$

Wald Statistic  $CHSQ(1) = 1.017650[.419]$

Table 5

#### AUTOREGRESSIVE DISTRIBUTED LAG ESTIMATES ARDL(1,0,0,0) SELECTED BASED ON SCHWARZ BAYESIAN CRITERION

Dependent variable is *POV*

Regressor	Coefficient	Standard Error	T-Ratio[Prob]
<i>lnPOV(-1)</i>	0,62396	0,18585	3,3573[,003]
<i>lnGNP</i>	-0,48353	0,19739	-2,4496[,022]
<i>lnFD</i>	0,20402	0,16082	1,2686[,217]
<i>lnGINI</i>	0,15673	0,19301	0,81202[,425]
<i>lnTAX</i>	0,073983	0,08691	0,85125[,403]
<i>A</i>	1,7966	3,9361	0,45645[,652]

R-Squared .83833

R-Bar-Squared .80318

F-stat.  $F( 5, 23) 23.8528[.000]$

DW-statistic 2.0628

**ERROR CORRECTION REPRESENTATION FOR THE SELECTED ARDL MODEL  
ARDL(1,0,0,0,0) SELECTED BASED ON SCHWARZ BAYESIAN CRITERION**

Dependent variable is:  $\Delta$ POV

Regressor	Coefficient	Standard Error	T-Ratio[Prob]
$\Delta \ln GNP$	-0,48353	0,19739	-2,4496[,022]
$\Delta \ln FD$	0,20402	0,16082	1,2686[,217]
$\Delta \ln GINI$	0,15673	0,19301	0,81202[,425]
$\Delta \ln TAX$	0,073983	0,086911	0,85125[,403]
$\Delta A$	1,7966	3,9361	0,45645[,652]
$ECT(-1)$	-0,37604	0,18585	-2,0233[,055]

R-Squared .6456

R-Bar-Squared .5681

F-stat. F (5, 23) 1.6548[,186]

DW-statistic 2.0628

cit, GNP per capita, Gini coefficient, indirect taxes as explanatory variables and follow Auto Regressive Distributed Lag Mode (ARDL) to Cointegration technique for estimation. The empirical findings reveal that fiscal deficit increases poverty and inequality through misallocation of government funds corruption and weak institutions. Since Government expands its expenditure, which however not utilized, properly, as it is financed through money supply, indirect taxes and external debt. Consequently money supply spurs domestic price level, indirect taxes and debt services

when accumulated it threaten the purchasing power of poor and drag them towards poverty. To summarize, overall fiscal deficit deteriorate the poverty level and provide bias for inequality.

Fiscal deficit is a major evil that has severe implication for macroeconomics instability and growth. Government authorities are responsible for taking necessary action to minimize the budget deficit in order to avert the unsustainable poverty and inequality and consider it as a part of poverty alleviation strategies, which obviously lower dependency on external source and may boost up private and business sector.

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