Fiscal Autonomy and Economic Growth Nexus: Empirical Evidence from Pakistan

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Abstract: The study investigates the impact of fiscal decentralization on economic growth in Pakistan using time series data for the period from 1972 to 2010. The empirical results show that fiscal decentralization (revenue and expenditures) is an effective tool to foster the economic growth in Pakistan. The increase in the subnational share of total government expenditures may generate more projects geared toward development and improve the overall level of development in Pakistan. It was found that an increase in the subnational revenue share in total government revenue also has a positive relationship with economic growth. In Pakistan, fiscal decentralization has significant and positive influence on economic growth but being a developing economy the numbers of constraints which can curb the effectiveness of fiscal decentralization are greater than developed economies.

Keywords: Economic growth; Decentralization; Expenditures; Pakistan

I. Introduction
Fiscal decentralization may be a successful tool to promote economic growth in developed or industrialized countries but its consequences in developing economies are subject to substantial debate. It is a general perception that fiscal decentralization is a successful way to increase the efficiency of public expenditure and revenue (Oates, 1972; Bahl and Linn, 1992; Yilmaz, 2000; Stensel, 2005). Fiscal decentralization is also a way to shift the fiscal authority to the lower tiers of the government and limit the control of central governments. Countries have therefore pursued decentralization for both reasons—efficiency in public goods provision and accountability of central and subnational governments.
Over the past two decades a number of developing and transitional economies have taken steps towards fiscal decentralization. More importantly the notion of fiscal decentralization is not limited to the transitional or developing economies; it has also become a primary policy issue in the agenda of most OECD countries (Martinez-Vazquez and McNab, 2001).

Pakistan is on the front line of developing countries which have taken various steps toward fiscal decentralization. The Constitution of Pakistan provides various revenue instruments and expenditure responsibilities to the subnational governments. Provincial governments are free in their choices of functions and assignments to the local governments, however, the local governments are treated as a subject of provincial governments.

The current study will examine the impact of fiscal decentralization on economic growth in Pakistan. The review of previous studies on fiscal decentralization will be presented in the second section. Data and methodological issues will be elaborated in the third section. Empirical results to explore the relationship between fiscal decentralization and economic growth will be presented in the fourth section. A fifth section concludes.

II. Literature Review

Since Oates’ (1972) seminal work on fiscal decentralization, the literature has generally considered that fiscal decentralization as a successful way to increase the efficiency and productivity of public expenditure and revenue from a theoretical as well as practical perspective (Oates, 1972; Bhal and Linn, 1992; Yilmaz, 2000; Stensel, 2005).

Since the early theoretical work, the literature has shifted largely to empirical tests of the impacts of decentralization on economic efficiency. For example, Davoodi and Zuo (1998) used national and subnational goods as separate inputs in a Cobb-Douglas production function to test the hypothesis that increased decentralization increases/decreases economic growth. Their empirical analysis suggests that decentralization decreases growth in developing countries.

Jin and Zou (2000) examined the connection between expenditure and revenue decentralization at the provincial level and provincial economic growth in China. They evaluated how the link between economic growth and fiscal decentralization in China is affected by the shifting of contracted revenue sharing (1980-93) to a tax assignment system (1994-99). The provincial GDP growth rate was considered as a dependent variable while the provincial tax rate, control tax rate, revenue decentralization, expenditure decentralization, investment rate, growth rate of labor, provincial inflation and openness were considered as explanatory variables. In both time periods, revenue and expenditure decentralization was found to enhance provincial growth.

Akia and Sakata (2002) considered four decentralization indicators to reflect the necessary viewpoints of fiscal decentralization and growth linkages. They used the share of revenue in the total budget, the share of expenditure in the total budget and a combination of the share of revenue and expenditures in the total budget as measures of decentralization. They found a positive relationship of fiscal decentralization with
economic growth and suggested that the moves toward fiscal decentralization in developing countries may foster economic growth.

Martinez-Vazquez and McNab (2003) investigated reliability of the empirical correlation between economic growth and fiscal decentralization given several methodological issues related to measurement and data—calling into question some findings that decentralization enhances growth in developing countries. As demonstrated in this brief review, whether decentralization improves macroeconomic performance appears to be an open question especially in the case of developing countries.

Feltenstein and Iwata (2005) also explored the positive association between economic decentralization and macroeconomic performance. In this case, real output growth also has a positive relationship with economic decentralization but they find a negative relationship between economic decentralization and the country’s inflation rate. So, the study suggested that economic decentralization seems to be good for economic growth while bad for price stability—a bit of a mixed message.

Imi (2005) stated that the previous studies showed a mixed picture of the relationship between fiscal decentralization and economic growth. Theoretically, it seemed perfect that fiscal decentralization leads to better provision of public goods, this study proved it empirically that fiscal decentralization has a positive significant impact on per-capita GDP growth.

Martinez-Vazquez and McNab (2006) examined the direct and indirect relationships of fiscal decentralization with economic growth and macroeconomic stability. To measure fiscal decentralization the study used the ratio of total sub-national government revenue to general government revenue and the ratio of total sub-national government expenditures to general government expenditure. To measure the macroeconomic stability the authors used the Consumer Price Index (CPI) and infant mortality was used as a proxy of evolution of human capital. The study found that decentralization promoted price stability in higher income countries while it diminished in developing economies.

Zhang (2006) stated that in China the fiscal system is technically decentralized while the governance structure is strongly centralized. The study showed that the transaction cost is a serious problem under fiscal decentralization in China. Similarly, a higher agriculture tax collection cost and an excessive government size make local government hardly able to provide necessary services and public goods. The outcome showed that firms in the rich regions enjoyed lower tax burdens and generous support while the farmers and firms in the poor regions paid heavy taxes and received less support. This shows that the fiscal decentralization is beneficial for rich localities while promoting the regional gap between poor and rich localities.

Trillo and Rabling (2008) showed that the distribution of conditional transfers is often politically based. In their study, they demonstrate that the distribution of poverty reduction funds, which were made by community based development authorities, did not reach to the poor population. So the study highlighted that in the presence of elite
capture, the benefits of decentralization may not be realized. The study suggested that there was a need to explore the mechanisms through which local capture works.

Brueckner (2009) examined the rising trends of partial fiscal decentralization and explored the magnitude of the emergence of partial fiscal decentralization. Existing literature provides very little empirical and economic analysis of a partial decentralization system in a Tiebout style model. The study stated that the variety of public goods under full decentralization would be greater than under partial decentralization because the local officials may lean towards over spending under full decentralization. So, partial fiscal decentralization would prove to be an appropriate move to overcome this problem.

Gemmell et al. (2009) explored whether any efficiency gains obtained through decentralization have positive effects in decentralized economies. They find that expenditure decentralization has an adverse effect on economic growth in OECD countries but revenue decentralization leads to enhance economic growth. But the OECD countries are practicing more spending decentralization than revenue decentralization. Therefore, this study argued that in order to achieve the efficiency gains of decentralization there must be a closer match between spending and revenue decentralization in these countries. Neyapti (2010) investigated the macroeconomic effects of fiscal decentralization and found a significant negative relationship between fiscal decentralization and budget deficit. He highlighted that the fiscal decentralization may reduce the budget deficit in the case of a large population although population size and budget deficit typically have a positive association.

We turn now to an empirical analysis of the impact of decentralization on growth in Pakistan, utilizing lessons learned from this extensive literature.

III. Data and Methodology

Data Sources:
To explore the association between fiscal decentralization and economic growth in Pakistan, the present study utilizes the Economic Survey of Pakistan (various issues), the annual reports of the State Bank of Pakistan and the Handbook of Statistics compiled by the Federal Bureau of Statistics (FBS) to retrieve a time series data for the period from 1972 to 2010.

Bearing in mind the weaknesses of the secondary sources of data, this analysis utilizes various data mining tools to examine the impact of fiscal decentralization on economic growth. The descriptions of the dependent and explanatory variables are given as follows.

Description of Variables:
Previously, fiscal decentralization had been measured in terms of revenue (ratio of sub-national or provincial government revenues to total national government revenues) and expenditures (ratio of sub-national government expenditures to total government expenditures). Some studies suggest that the usage of these two ratios is not reliable but it is still a significant tool to capture the true intensity of federalism (Phillips and Woller; 1997). Particularly, in the case of Pakistan, the revenue side may generate misleading results because all types of taxes are levied by the state government and there is little true
revenue autonomy at the subnational level. So this study will follow the two adjustments to capture the true picture of fiscal decentralization on the revenue and expenditure side that was prescribed by Wasylenko in 1987. We can define the variables as follows:

**Economic Growth (EGr)**: Annual GDP growth rate is used in the fiscal decentralization literature to measure the direct relationship between fiscal decentralization and economic growth. This study will use the log of GDP in local currency unit as a dependent variable.

**Adjusted Expenditure Decentralization (AED)**: As far as the analysis of the expenditure side of fiscal decentralization is concerned, the expenditures, which are pure responsibility of central or sub-national government, are taken into account. This variable is composed of the ratio of sub-national government expenditure to national government expenditure after deducting the expenditure on defense and debt servicing.

**Adjusted Revenue Decentralization (ARD)**: Federal spending does not include federal grants awarded to the local governments. State spending is comprised of the total amount of grants a state receives minus the total amount of transfer by the state to the local governments. Therefore, in order to measure the revenue side of the fiscal decentralization an adjusted variable is used and the ratio of sub-national government’s revenue deducting the grants in aid is taken into account.

**Inflation Rate (INF)**: The inflation rate is measured by the overall consumer price index at the national level. It is hypothesized that fiscal decentralization will aid price stability in an economy.

**Trade Openness (TO)**: Trade openness is the net foreign trade to GDP ratio and net foreign trade is the sum total of imports and exports. Trade openness directly affects growth and employment. The positive influence of trade openness on growth and employment is caused by benefits of resource allocation raised from external competition.

**Population Growth Rate (POP)**: Annual population growth rate is also considered as an explanatory variable.

To examine the impact of fiscal decentralization on economic growth we first conduct an elementary statistical analysis and follow with a time series analysis as presented below.

**Elementary Analysis**:
Table 1.1 provides the descriptive statistical summary of selected variables. The first column shows that the average inflation rate (INF) is 9.6 for our period of analysis with a variation of 5.76. As seen in the table, the average values for trade openness (TO), adjusted variables of revenue decentralization (ARD) and adjusted expenditures decentralization (AED) are 0.34, 0.29 and 0.46 respectively.
Table 1.1: Descriptive summary of all the variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Median</th>
<th>Maximum</th>
<th>Minimum</th>
<th>Std. Dev.</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>EGr</td>
<td>5.133552</td>
<td>5.025585</td>
<td>6.085478</td>
<td>4.605170</td>
<td>0.413784</td>
<td>0.806018</td>
<td>2.661056</td>
</tr>
<tr>
<td>AED</td>
<td>0.463946</td>
<td>0.442134</td>
<td>0.850600</td>
<td>0.287601</td>
<td>0.134738</td>
<td>0.591409</td>
<td>3.019134</td>
</tr>
<tr>
<td>ARD</td>
<td>0.290796</td>
<td>0.294755</td>
<td>0.436339</td>
<td>0.063329</td>
<td>0.092787</td>
<td>-1.038129</td>
<td>3.997990</td>
</tr>
<tr>
<td>INF</td>
<td>9.600000</td>
<td>8.650000</td>
<td>30.00000</td>
<td>3.100000</td>
<td>5.759301</td>
<td>1.907877</td>
<td>7.163876</td>
</tr>
<tr>
<td>TO</td>
<td>0.340853</td>
<td>0.333494</td>
<td>0.490454</td>
<td>0.259786</td>
<td>0.045079</td>
<td>0.752128</td>
<td>3.879952</td>
</tr>
<tr>
<td>POP</td>
<td>111.4558</td>
<td>112.0700</td>
<td>163.7600</td>
<td>63.34000</td>
<td>30.68729</td>
<td>0.075303</td>
<td>1.770666</td>
</tr>
</tbody>
</table>

Source: Authors own calculations by using E-view 5

The skewness values of the variables are given in second last column of table 1.1 which indicated that almost all variables are somewhat skewed. Inflation rate (INF), openness (TOP) and adjusted expenditures decentralization (AED) are positively skewed and adjusted revenue decentralization (ARD) is negatively skewed. The last column of Table 1.1 shows the kurtosis values which indicates that inflation (INF), openness (TO) and adjusted revenue decentralization (ARD) have a Lepto-Kurtic or high peaked distribution. It also demonstrates that expenditure decentralization (AED) has an approximately normal distribution.

It is one of the important assumptions of Ordinary Least Square (OLS) method that there should be no multicollinearity among the variables. Therefore to estimate the empirical results, first the study will test for the problem of multicollinearity in our observed model. Mostly pair-wise correlation matrix is used to identify the problem of multicollinearity. The results of correlation matrix are reported in Table 1.2.

The correlations shown in Table 1.2 suggest that there is no multicollinearity because EGr is weakly correlated with adjusted and non-adjusted fiscal decentralized (revenue and expenditure) variables. The EGr is also weekly correlated with the rest of the controlled variables i.e. INF, POP and TO.

Table 1.2: Correlation Matrix

<table>
<thead>
<tr>
<th></th>
<th>EGr</th>
<th>AED</th>
<th>ARD</th>
<th>INF</th>
<th>POP</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>EGr</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AED</td>
<td>0.3785</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARD</td>
<td>0.2871</td>
<td>0.1067</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INF</td>
<td>0.1519</td>
<td>-0.2397</td>
<td>0.0160</td>
<td>1.0000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>POP</td>
<td>0.1793</td>
<td>-0.0766</td>
<td>0.8252</td>
<td>-0.0162</td>
<td>1.0000</td>
<td></td>
</tr>
<tr>
<td>TO</td>
<td>0.4569</td>
<td>-0.2766</td>
<td>0.2500</td>
<td>0.3088</td>
<td>0.3230</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

Source: Authors own calculation by using E-view 5

_Model Specification_
The following model will examine the impact of adjusted and non-adjusted fiscal decentralization variables on economic growth. The growth rate, $EGr$ is the dependent variable. Here inflation rate (INF), Population (POP) and Trade Openness (TO) are control variables. The linear functional from of the model can be written as follows:

$$EGr = \alpha_0 + \alpha_1 AED + \alpha_2 ARD + \alpha_3 INF + \alpha_4 POP + \alpha_5 TO + \mu_i$$  \rightarrow (1)

The short-run results will be derived from the following system of equations.

$$\Delta EGr_t = \alpha_1 + \sum_{i=1}^{p} \beta_1 \Delta AED_{t-i} + \sum_{i=1}^{q} \beta_2 \Delta ARD_{t-i} + \sum_{i=1}^{r} \beta_3 \Delta INF_{t-i} + \sum_{i=1}^{s} \beta_4 \Delta POP_{t-i}$$

$$+ \sum_{i=1}^{u} \beta_5 \Delta TO_{t-i} + \delta_1 EGr_{t-1} + \epsilon_{1t}$$  \rightarrow (2)

$$\Delta AED_t = \alpha_2 + \sum_{i=1}^{p} \beta_1 \Delta AED_{t-i} + \sum_{i=1}^{q} \beta_2 \Delta ARD_{t-i} + \sum_{i=1}^{r} \beta_3 \Delta INF_{t-i} + \sum_{i=1}^{s} \beta_4 \Delta POP_{t-i}$$

$$+ \sum_{i=1}^{u} \beta_5 \Delta TO_{t-i} + \sum_{i=1}^{u} \beta_4 \Delta EGr_{t-i} + \delta_2 EGr_{t-1} + \epsilon_{2t}$$  \rightarrow (3)

$$\Delta ARD_t = \alpha_3 + \sum_{i=1}^{p} \beta_1 \Delta AED_{t-i} + \sum_{i=1}^{q} \beta_2 \Delta ARD_{t-i} + \sum_{i=1}^{r} \beta_3 \Delta INF_{t-i} + \sum_{i=1}^{s} \beta_4 \Delta POP_{t-i}$$

$$+ \sum_{i=1}^{u} \beta_5 \Delta TO_{t-i} + \sum_{i=1}^{u} \beta_4 \Delta EGr_{t-i} + \delta_2 EGr_{t-1} + \epsilon_{3t}$$  \rightarrow (4)

$$\Delta INF_t = \alpha_4 + \sum_{i=1}^{p} \beta_1 \Delta AED_{t-i} + \sum_{i=1}^{q} \beta_2 \Delta ARD_{t-i} + \sum_{i=1}^{r} \beta_3 \Delta INF_{t-i} + \sum_{i=1}^{s} \beta_4 \Delta POP_{t-i}$$

$$+ \sum_{i=1}^{u} \beta_5 \Delta TO_{t-i} + \sum_{i=1}^{u} \beta_4 \Delta EGr_{t-i} + \delta_2 EGr_{t-1} + \epsilon_{4t}$$  \rightarrow (5)

$$\Delta POP_t = \alpha_5 + \sum_{i=1}^{p} \beta_1 \Delta AED_{t-i} + \sum_{i=1}^{q} \beta_2 \Delta ARD_{t-i} + \sum_{i=1}^{r} \beta_3 \Delta INF_{t-i} + \sum_{i=1}^{s} \beta_4 \Delta POP_{t-i}$$

$$+ \sum_{i=1}^{u} \beta_5 \Delta TO_{t-i} + \sum_{i=1}^{u} \beta_4 \Delta EGr_{t-i} + \delta_2 EGr_{t-1} + \epsilon_{5t}$$  \rightarrow (6)
IV. Estimation and Results

To avoid spurious regression results and to establish the appropriate estimation strategy, we first examine the stationarity of the data series. The results of Augmented Dickey Fuller (ADF) test for unit root have been reported in Table 1.3.

Table 1.3: Results of Augmented Dickey-Fuller Test (ADF) for Unit Root.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Level</th>
<th>1st difference</th>
<th>Conclusion</th>
<th>Level</th>
<th>1st difference</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>EGr</td>
<td>-0.7636</td>
<td>-4.9831**</td>
<td>I(1)</td>
<td>-3.1260</td>
<td>-4.8652**</td>
<td>I(1)</td>
</tr>
<tr>
<td>ARD</td>
<td>-1.3251</td>
<td>-8.9630***</td>
<td>I(1)</td>
<td>-3.0876</td>
<td>-9.0403***</td>
<td>I(1)</td>
</tr>
<tr>
<td>AED</td>
<td>0.0287</td>
<td>-5.5211***</td>
<td>I(1)</td>
<td>-1.7236</td>
<td>-5.3230***</td>
<td>I(1)</td>
</tr>
<tr>
<td>INF</td>
<td>-2.4157</td>
<td>-6.2613*</td>
<td>I(1)</td>
<td>-2.4157</td>
<td>-6.1729*</td>
<td>I(1)</td>
</tr>
<tr>
<td>POP</td>
<td>0.9075</td>
<td>-5.9543*</td>
<td>I(1)</td>
<td>-2.5672</td>
<td>-6.0575*</td>
<td>I(1)</td>
</tr>
<tr>
<td>TO</td>
<td>-2.7418</td>
<td>-5.8078***</td>
<td>I(1)</td>
<td>-2.7541</td>
<td>-5.7198***</td>
<td>I(1)</td>
</tr>
</tbody>
</table>

Source: Authors own calculation by using E-view 5

The results of the ADF test are reported in Table 1.3, which shows that the time series are not stationary at level but all the series become stationary at a first difference. According to the ADF test we can easily reject the null hypothesis of non-stationarity at the 1% significance level. The results show that the absolute values of ADF statistics are below the 99% critical value (with and without trend).

Based on the results of the ADF test, the Johansen test procedure will be followed to determine the presence of the co-integration in equation 1. The results of the trace statistics are reported in Table 1.4 to test the null hypothesis of the z co-integration vector.

Table 1.4: Result of Johansen Test for Co-integration

<table>
<thead>
<tr>
<th>Rank r</th>
<th>Trace Statistic</th>
<th>Maximum Eigen value</th>
</tr>
</thead>
<tbody>
<tr>
<td>r0=0</td>
<td>105.34 *</td>
<td>0.704</td>
</tr>
<tr>
<td>r0≤1</td>
<td>62.626</td>
<td>0.511</td>
</tr>
<tr>
<td>r0≤2</td>
<td>37.526</td>
<td>0.457</td>
</tr>
<tr>
<td>r0≤3</td>
<td>16.115</td>
<td>0.253</td>
</tr>
<tr>
<td>r0≤4</td>
<td>5.868</td>
<td>0.154</td>
</tr>
<tr>
<td>r0≤5</td>
<td>0.001</td>
<td>0.378</td>
</tr>
</tbody>
</table>

Source: Authors own calculation by using E-view 5

Note: * ( * *) indicates rejection of the hypothesis at the 5% significance level, L.R. test indicates one co-integration equation at the 5% significance level.

The results show that the trace statistics are higher than the 5% critical value which means we reject the null hypothesis. Finally one can conclude that there are no
deterministic trends in the data as shown in Table 1.4. So that we can examine the magnitude and sign of a long run relationship and elasticity, the co-integration vector has been normalized on the EGr. It is concluded that there exist one co-integration relationship. The normalized co-integration coefficient can be observed in Table 1.5.

All variables have significant relationships with the dependent variable i.e. EGr. The results show that the adjusted decentralization (revenue and expenditure) variables have a positive impact on economic growth in Pakistan. The growth rate (EGr) also has significant and positive relationships with trade openness (TO) and Inflation rate (INF) while negative relationship with population growth rate (POP).

Table 1.5: Long Run Estimates Based on Johansen Cointegration

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>St. Error</th>
<th>t-statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>AED</td>
<td>3.579</td>
<td>0.787</td>
<td>[4.547]</td>
</tr>
<tr>
<td>ARD</td>
<td>11.659</td>
<td>2.762</td>
<td>[4.221]</td>
</tr>
<tr>
<td>INF</td>
<td>0.116</td>
<td>0.022</td>
<td>[5.272]</td>
</tr>
<tr>
<td>POP</td>
<td>-0.028</td>
<td>0.006</td>
<td>[4.666]</td>
</tr>
<tr>
<td>TO</td>
<td>6.943</td>
<td>3.454</td>
<td>[2.010]</td>
</tr>
</tbody>
</table>

Source: Authors own calculation by using E-view 5

After examining the long run relationship between growth rate and fiscal decentralization, we apply the Error Correction Model (ECM) to examine the short run relationship. The ECM exhibits the introduction of past disequilibrium as an explanatory variable in the dynamic behavior of existing variables.

Table 1.6 provides the short run dynamic relationship and set of short run coefficients in the VECM which relate the error terms in the lagged period and change in growth rate to changes in fiscal decentralization variables and other control variables. The EC_{t-1} coefficient has the correct negative sign and the coefficient shows the speed of adjustment. In this case the results show that the 13% disequilibrium from short run dynamic to long run could be corrected each year. The results of diagnostic tests for Serial Correlation (LM test), Residual Heteroskedasticity test and Residual Normality test are reported at the bottom of Table 1.6. The results show that the model has no serial correlation and Heteroskedasticity. Moreover the residuals are normally distributed.

Table 1.6: Result of ECM for Short Run Dynamics

<table>
<thead>
<tr>
<th>Error Correction:</th>
<th>D(EGr)</th>
<th>St. Error</th>
<th>t-statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>3.136</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>D(AED(-1))</td>
<td>3.628</td>
<td>(1.142)</td>
<td>[3.176]</td>
</tr>
<tr>
<td>D(ARD(-1))</td>
<td>14.488</td>
<td>(3.866)</td>
<td>[3.747]</td>
</tr>
<tr>
<td>D(INF(-1))</td>
<td>0.110</td>
<td>(0.036)</td>
<td>[3.070]</td>
</tr>
<tr>
<td>D(POP(-1))</td>
<td>-0.035</td>
<td>(0.008)</td>
<td>[4.427]</td>
</tr>
<tr>
<td>D(TO(-1))</td>
<td>13.976</td>
<td>(4.678)</td>
<td>[2.987]</td>
</tr>
<tr>
<td>EC_{t-1}</td>
<td>-0.137</td>
<td>(0.147)</td>
<td>[-0.934]</td>
</tr>
</tbody>
</table>

VEC Residual Serial Correlation LM Tests

Null Hypothesis: no serial correlation
Results and Discussions

The study provides empirical evidence for the relationship between economic growth and fiscal decentralization in Pakistan based on time series data for the period of 1972 to 2010. Our results indicate a positive relationship between fiscal decentralization and economic growth in Pakistan. The results suggest that increased decentralization (more autonomy) for provincial or local governments on both the revenue and the expenditures side will promote economic growth. These empirical results differ from some previous studies that have shown a negative relationship between fiscal decentralization and economic growth in developing economies (Davoodi and Zuo, 1998; Zhang and Zuo, 1998; Woller and Phillips, 1997; Martinez-Vazquez and McNab, 2002; Naumets, 2003; Jin and Zou, 2005).

The results of our empirical investigation show that, in Pakistan, a one percent increase in adjusted decentralization expenditures will induce to increase the growth rate by 3.58 percent. The positive association between decentralized expenditures and economic growth in Pakistan is consistent with some previous literature (Jin et al. 1999; Yilmaz, 2000; Qiao et al. 2002; Akia and Sakata, 2002; Behnich et al. 2002). Results show that one percent increase in adjusted decentralization revenue will induce an increase of 11.66 percent growth rate in Pakistan (Desai et al. 2003; Feld et al. 2005; Jin et al. 2005; Iimi, 2005, Gil-Serrate and Lopez-Laborda, 2006). According to these findings fiscal decentralization is an effective tool to increase the productivity of public sector and foster the long term economic growth in Pakistan as Oates (1972) suggested.

The impacts of non-adjusted decentralization revenue and expenditures on economic growth could be stronger than adjusted fiscal decentralization variables. The non-adjusted fiscal decentralization variables overstated the impact of fiscal decentralization due to the presence of grants, federal transfers, and shares of non-tax revenue that are included. The regression results show a strong relationship between the non-adjusted fiscal decentralization variable and economic growth. On the expenditures side, the inclusion of payments of interest on debt and defense expenditures shows a stronger association between fiscal decentralization and economic growth (Barenstein and de Mello; 2001).

Notwithstanding, we would caution that the impact of fiscal decentralization on economic growth could be declining with further adjustments in revenue and expenditures.

To capture the precise impact of fiscal decentralization on economic growth, we control for the population growth (POP), inflation rate (INF) and trade openness.
The results show that population growth (POP) has a negative correlation with economic growth (EGr) in Pakistan, while trade openness (TO) and inflation rate (INF) have a strong positive correlation with EGr (similar to Naqvi and Khan, 1989; De Gregorio, 1996; Frenkel and Mehrez, 1998; Burdekin et al., 2004; Ahmad and Mortaza, 2005).

The actual level of fiscal decentralization in Pakistan is still relatively low. The tax system in Pakistan is still highly centralized and the local governments have authority of tax collection largely on behalf of the central government. The distribution of resources between central and provincial governments still seems to be a challenging and complex phenomenon in Pakistan but this study provides some evidence that by passing through revenue to the provinces, there is some positive impact vis-à-vis the economic growth of the country.

Finally, the results show that the impact of revenue decentralization on economic growth is almost four times that of expenditure decentralization. Different studies of fiscal decentralization highlight that the best federal transfer system should take both the competitive as well as cooperative aspect of fiscal decentralization into account. A balance between the two sides of fiscal decentralization (revenue and expenditure) could increase the welfare of the people and ensure long run growth in an economy. The fiscal autonomy on revenue and expenditures to the lower tiers of governments could generate a competitive environment among the local governments (Brennan and Buchanan, 1980). A balanced and competitive fiscal decentralization may be considered a prerequisite to enhance the provision of goods and services and revenue generation at the local level, and it would later account for higher GDP growth.

V. Conclusion

The empirical results presented in this paper show that fiscal decentralization (revenue and expenditure) is an effective tool to foster economic growth in Pakistan. These findings are consistent with the majority of previous literature which find a positive impact of fiscal decentralization on economic growth (Naqvi and Khan, 1989; De Gregorio, 1996; Frenkel and Mehrez, 1998; Burdekin et al., 2004; Lin and Liu, 2000, Zhang and Zou, 2001; Qaio et al., 2002; Ahmad and Mortaza, 2005; Jin and Weingast; 2005). Although the empirical investigation shows that revenue and expenditures decentralization are beneficial for Pakistan, there exists a mismatch in expenditures and revenue assignments. The process of fiscal decentralization is favorable for encouraging economic growth but in developing economies the number of constraints which could curb the effectiveness of fiscal decentralization are greater than in developed economies. Therefore, a balance between revenue and expenditure decentralization to promote economic growth should must be followed for sustained economic growth (Boadway and Habson, 1993). However, to embark on a successful fiscal decentralization process, particularly in developing economies like Pakistan, the fiscal balance in revenue and expenditure assignments is a must; otherwise its consequences may harm economic growth. Particularly in Pakistan, lower levels of governments (provincial and local) still face the problem of centralized tax revenue and the distribution of revenue through a of set formulas which impact the competitive environment among the local governments and minimize the impact of fiscal decentralization.
References


