The Impact of Decentralized Economic Affairs Expenditures on Economic Growth:
A Time Series Analysis of Pakistan

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Abstract
The study has examined the impact of decentralized public spending on economic growth in Pakistan from 1972 to 2012. For examining the stationarity of variables, Augmented Dickey-Fuller (ADF) unit root test is used. Autoregressive Distributed Lag Approach (ARDL) is used for cointegration among the variables of the model. The estimated results of the study show that decentralized economic affair expenditures have negative and significant impact on economic growth in Pakistan over the selected time period. The results of the study show that decentralization of economic affairs expenditures is harmful for economic growth. On the basis of empirical results, this study proposes that decentralization of economic affair expenditures is growth retarding in case of Pakistan, so Pakistan must try to manage centralized economic affair expenditures for favorable economic growth.

Keywords: economic affair expenditures, decentralization, economic growth
JEL Code: O43, O47

I. Introduction

Simply, decentralization is a process by which resources and administrative responsibilities from central level to sub level governments are devolved (Rondinelli, 1981). Decentralization devolves powers from center to sub-level governments in a way that resources can be utilized efficiently to improve living standard of people by sharing work load of central government. After the emergence of capitalism, fiscal decentralization got policy importance as supporters of decentralization argue that effective governance can be achieved by empowering small units of government. Fiscal decentralization (FD) is a powerful tool to set targets for economic growth and it removes unjustified task of central government (Tiebout 1956). Fiscal decentralization gives financial and administrative autonomy to lower part of governments. From last few decades, there has been a growing interest among development economists, multilateral development agencies and governments on fiscal decentralization as a primary tool for promoting economic growth (Oates, 1993; Bruno and Pleskovic, 1996).

Fiscal decentralization has two basic assumptions; first decentralization will increase economic efficiency as local governments are capable of providing better services due to proximity and informational advantages and second competition and population mobility across local governments for the delivery of public services will ensure the right matching of preferences between local communities and local governments (Tiebout, 1956). However there is little empirical support for this claim that economic benefits of fiscal decentralization are significant (Rodríguez-Pose and Bwire, 2004). Empirical literature which discusses the relationship between economic growth and fiscal decentralization in the context of development is still in its preliminary stages (Bardhan, 2002). A large number of studies mention that economic growth and fiscal decentralization are independent phenomena and they seldom occurred (Rodden, 2002), while others find that the effects of fiscal decentralization are different in developed and in developing countries. This is the case of Davoodi and Zou (1997), who conclude that fiscal decentralization is negatively correlated to economic growth in developing countries, but has no significance in developed countries. Some studies found supportive and substantial relationship between economic growth and FD (Iimi, 2005). Some authors found slightly negative or no relationships (Davoodi and Zou, 1998; Rodriguez-Pose and Bwire, 2004; Thornton, 2007; Baskaran and Feld 2013). An inverted U-shaped link was observed between real GDP and FD (Thieben 2003).

The financial aspects of decentralization can be dangerous if they are not properly planned because small units can switch their costs to others (Hagen et al. 2000; Rodden et al. 2003). The taxation system in developing countries like Pakistan is centralized. The government collects huge amount of resources and redistributes it among the provinces for the correction of fiscal gaps. But the local democracy and political accountability tend to be vulnerable in developing and transition economies, the delivery of resources and public services is considered to be at greater risk of corruption and opportunistic behaviour at lower levels of government. Fiscal decentralization can also reinforce regional inequalities to the detriment of overall economic growth (Rodríguez-Pose and Ezcurra, 2010). Decentralization can make it less likely that certain regions benefit from sharing of best practices and economies of scale and as in many less developed regions the level of training of staff in local government is lower than elsewhere, even managing basic tasks such as accounting and record-keeping can become problematic (Odero, 2004).

This study focuses on finding the impact of FD on economic growth in Pakistan during the 1972 to 2012 period. The main objective of this study is to find the effect of decentralization of economic affairs expenditures from the overall fiscal decentralization in Pakistan. The present study is aimed at covering the literature gap regarding relationship of economic affairs expenditures and economic growth. The Present study identifies the strengths and weaknesses of the economic affair expenditures decentralization in Pakistan, through the compilation of its historical trends. This study will provide policy implications concerning devolution plan in Pakistan to make it more effective.

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II. Literature Review

Previous empirical studies established multiple type of relationship between fiscal decentralization and economic activities, some are clear positive some are clear negative while some ends with no relationship at all. The results, however, depend on the type of study, what was examined, what countries and time periods were covered and the empirical approach that was selected. Results also much depended on whether a study examined a single country (i.e. local and/or regional governments in one country) or covered the sub-central level in a cross-country setting. The fundamental, but often ignored, principle of fiscal decentralization entails resource mobilization. The sub-national governments are being granted more tax autonomy and funds for the resource mobilization in their own region, instead of waiting for the availability of public goods and services from remote central authority. In this way the economic efficiency can be enhanced across territories and localities within a country using available resources. Oates (1972) concludes that sub-national governments are more efficient in providing public goods and services to different regions. The reason is that sub-national governments are better informed about the preferences of the citizens than the national governments. Therefore, local level governments are in a better position for provision of public goods and services.

Brennan and Buchanan (1980) examine that improvement in provision of public goods and services and effectiveness in taxation arrangements can be enhanced via competition among different regional governments. The competition will lead the public officials to hunt their own interests and attempt to maximize their revenues. Oates (1985) could not find any strong, logical association between size of the government and the intensity of public sector centralization by using a sample of 25 developing and 16 developed countries. Weingast (1995) concludes that successful market requires suitable intended economic system along with sound political system that will restrict the capacity of the government to take possession of wealth. A form of restricted government is required where the political institutions assign credibility of economic and political rights. The author studies how limited government comes up in the West, examining the vital role of federalism for market protection in England and US. On the basis of federalism, the inspiring economic growth is happened in England during the 18th century and in US during 19th and early 20th centuries. It is also found that federalism proves amazing economic growth for the last 15 years in case of China.

Davoodi and Zou (1998) use data over the period 1970-1989 for 46 countries and find mixed results. They couldn't find any association between FD and economic growth in case of developed countries but have found a negative relationship in case of developing countries. They observe that developed countries are more decentralized than developing countries. On the average decentralization in developed countries is counted 33.3% and 20% in developing countries, while GDP per capita growth rate is 2% and 1.6% respectively. The authors point out the problem concerning measurement of fiscal decentralization, which is the share of subnational government expenditures to total government expenditures. This measure does not present the sign of autonomy for subnational government expenditures in making decisions.

Zhang and Zou (1998) use provincial panel data on different levels of governments during 1978-1992 and examine that expenditure decentralization has negative relationship with economic growth of provinces in China for the case of higher degree of decentralization. The results are significant and robust for negative association between FD and growth of GDP per capita across provinces of China. The outcomes are not in line with traditional theory of fiscal federalism of positive association between FD and economic growth. The understanding behind these surprising results may be current level of development in china where central government is restricted for public investment to develop basic infrastructure. Hence, there is a positive and significant association between development expenditure of central government and economic growth while provincial government spending and economic growth are negatively associated. The findings have implications for transition and developing economies following fiscal decentralization. More significantly, if expenditures and revenues are already highly decentralized, economic growth would be slow with further decentralization.

Thieben (2003) examines the long-run pragmatic association between FD and economic growth, total factor productivity, capital formation for the high-income OECD countries. The level of FD has converted into an intermediate level over the last 3 decades among the large number of high-income countries in OECD. The theoretical justification in favor and against FD points to clarify for this trend, because disadvantages for economic growth have been associated extreme centralization and decentralization. Therefore, the experimental movement of convergence would lead to growth. The analysis shows that there exists a positive relationship when FD is rising from low levels, arrives at a crest and then becomes negative. The policy implication recommends by the author is that the various countries where the level of FD has been relatively low can increase it to enhance growth.

Malik et al. (2007) find mixed results for the association of FD with growth rate of GDP per capita in Pakistan. The expenditure decentralization has positive and significant impact on economic development. It has statistically insignificant impact on economic development when expenditure decentralization is measured after subtracting defense and interest expenses. The other ratio revenue decentralization has negative relationship with economic growth. The authors conclude some results after examining mixed results of fiscal decentralization. At the initial stage of development, the central government is constrained with inadequate resources for public investment such as poverty reduction, defense, energy, debt servicing, highways etc. Such type of infrastructure development might have more significant outcome for economic growth. The fiscal decentralization would be beneficial if expenditures and revenue assignments are carried out according to level of economic development. The fiscal responsibilities must be best centralized at the initial level of economic development. At the end if revenue and expenditure decentralization rise constantly might have limited the pace of economic growth in Pakistan.

Samimi et al. (2010) find that fiscal decentralization has positive and significant influence on real GDP output of Iran. In the light of traditional theory of fiscal federalism, the results are consistent that FD usually makes positive contribution to local economic growth. The most important focus of the research is to get evidence of non-linear association between FD and economic growth for the provinces of Iran. They set up an analytical model to provide fundamental results of FD and economic growth by using panel data of cross-province with fixed-effect regression model for the period of 2001-2007.

Faridi (2011) concludes that FD is a source of improving public sector efficiency and hence leads to economic development. To analyze the relationship of FD and Economic growth, Time series data is used for the period of 1972 to 2009. The results come up with the conclusion that both revenue and expenditure decentralization are positively linked with growth rate of GDP per capita in Pakistan. The study also concludes that in order to raise the welfare of the people by enhancing economic growth, national government should hand over the fiscal powers to provinces and lower tier of governments. The author further analyzes that the levels of FD and its trend varies across indicators. Implementation of decentralization would be possible in different types of government activities. In most countries expenditures are carried out through sub-national governments and revenues are best centralized.

Iqbal et al. (2013) find existence of positive association between revenue decentralization and economic growth. Revenue generating responsibilities add positive externalities which ultimately raised per capita income. The expenditure decentralization is negatively associated with economic growth in Pakistan. The low quality of institutions is the main reason leading high level of corruption and the lack of accountability of public officials. The second reason is the inadequate physical infrastructure for desired results of expenditure decentralization. Composite decentralization positively contributes to economic growth. The analysis also shows that democratic institutions play a significant role to comprehend the benefits of FD. It also examines that for promoting economic growth, FD and democratic institutions are complement to each other.

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III. Historical Overview of Fiscal Decentralisation in Pakistan

Fiscal decentralization (FD) takes place due to inequality between generating revenue capability and expenditures demanded. The most crucial part of decentralization mechanism is reallocation of resources among the federal and provincial governments to overcome revenue and expenditures imbalances. The legislative arrangements are required for financial transfers between national and sub-national governments. It is observed that the mismatch between revenue generation capacity and actual expenditures requirements among different tiers of governments across developed and developing countries. A serious mismatch is observed in the sub-national revenue generation and expenditures in case of Pakistan. The statistics show that provincial governments generate only 18 percent of total revenue.

III.I The Structure of Government in Pakistan

The federation of Pakistan is governed under the constitution of 1973. The functions of the federal government and of each province are specified in constitution of 1973. Under the federal legislative, the federal government is responsible for undertaking the functions. The functions of federal government also include regulation and services. Functions of service nature include external affairs, foreign aid, defense, national highways, railways; stock exchanges, currency etc. There is a simultaneous legislative list of functions performed by either federal or provincial or both other than the functions mentioned earlier. These functions include social welfare, education, population planning and tourism. Left over functions such as irrigation, agriculture extension, police and the justice are primarily the responsibilities of provincial governments. The district governments have not been formally part of the constitution, though they were just part of Legal Framework Ordinance (LFO) of 2002 and now got provisional amnesty under the 17th amendment.

III.II The National Finance Commission (NFC) and Fiscal Federalism

A well-established mechanism exists in Pakistan for the reallocation of resources from federal to provincial governments. National Finance commission (NFC) is constituted for the inter-governmental transfer of resources. According to the constitution 1973, federal government was responsible to announce the NFC award every five year. The finance commission was nominated to propose and evaluate the process of resource distribution in Pakistan. The federal government collects the resources dispersed among the provinces. The resource distribution from central to provincial government is determined by some formula. Population has been the only criterion for distribution of resources since independence to 2009 in Pakistan. The new criterion was established for the distribution of resources in the 7th NFC award. To re-define share of each province in 7th NFC award, the following four indicators are used: (1) population, (2) poverty, (3) revenue generation capacity and (4) inverse population density (IPD). In the divisible pool, share of each province has varied over time (Table1).

Table 1
The Provincial Share (Percent) in Divisible Pool

Award	Punjab	Sindh	KPK	Baluchistan
NFC 1979	57.97	23.34	13.39	5.30
NFC 1991	57.88	23.28	13.54	5.30
NFC 1997	57.37	23.29	13.54	5.30
NFC 2006	57.37	23.71	13.82	5.11
NFC 2009	51.74	24.55	14.62	9.09

The share of Punjab based on its population in the 1991 NFC award was 57.88 and there was a slight cut in 2006. However, according to new distribution formula, the share of Punjab has declined to 51.74 percent in the 7th NFC award 2009. The share of Sindh was changed from 23.29 percent in 1991 to 24.55 percent in 2009 with the revised distribution formula. The share of KPK was changed from 13.54 in 1991

to 24.55 in 2009. In the same way, the share of Balochistan was increased from 5.3 percent in 1991 to 9.09 percent in 2009 with the revised formula.

III.III Review of Public Expenditures
Well organized expenditure management is a key economic instrument for the policy of reducing poverty and means development goals as it generates sufficient fiscal freedom which is essential to strengthen the efficient public services delivery such as education, health and basic infrastructure. Though, composition of government expenditure has an important role in this regard. Commonly government expenditures can be classified as current and capital. In order to enhance the economic growth of a country, an efficient combination of current and capital expenditures is required significantly. On internal and external front, expenditure management has always been difficult on account of a variety of challenges in Pakistan. There is a rapid increase in total expenditures due to high interest payments and heavy subsidies for loss making Public Sector Enterprises (PSEs) and energy. Simultaneously, lack of effective policy for resource mobilization and unexpected external inflows resulted serious fiscal instability as on the average fiscal deficit increased by 6.8 percent in last five years.

IV. Theoretical Framework
The rapid growth in the autonomy and responsibilities of subnational governments is one of the most noteworthy trends in governance in recent decades, especially in developing and transition economies (Rodríguez-Pose and Gill, 2003). Fiscal decentralization tends to be a relatively recent phenomenon in transitional and developing countries. In these countries the two main reasons for the emergence of decentralization are either the failures in economic planning by central governments and the changing international economic and political conditions (Smoke, 2001). In these circumstances decentralization has been sold as a means to achieve economic gains, rather than the more traditional objective of decentralization of delivering a better setting for ethnic, religious, cultural, or historical differences within nation-states (Rodriguez-Pose and Gill, 2005). The process of decentralization in transition and in developing countries has resulted in a large variety of devolved systems, with varying degrees of fiscal, administrative, and political powers awarded to subnational governments. The benefits of FD can take place if development of FD is matched with good institutions. The role of institutions is vital to apply the decentralization theorem effectively. Iimi (2005) incorporated the interaction term of FD with political institutions by extending further this framework. Following Iimi (2005), the modified model to confine the relationship among FD, political institutions and economic growth is as:

$$GDPg_t = f\left(\mathrm{FD}_t, PF_t, X_{it}\right) \tag{1}$$

where

$GDPg$ is the growth rate of per capita output,

FD is the fiscal decentralization measures,

PF represents political freedom,

X is a set of control variables,

and

$t = 1, 2, \ldots, N$. β_0, β_1, β_2 and β_3 are the scalar parameters and β is the estimated vector of parameters. X consists of those control variables which have been used frequently in growth literature such as Mankiw et al. (1992), Barro and Lee (1996) and Sala-i-Martin (1997). The model of economic affairs expenditure decentralization for Pakistan becomes as:

$$GDPg_t = \beta_0 + \beta_1 EAED_t + \beta_2 PF_t + \beta_3 PhC_t + \beta_4 INF_t + \beta_5 HC_t + \mu_{it} \tag{2}$$

where
- EAED is the measure of Economic Affairs Expenditures Decentralization,

- PhC is the measure of physical capital, Gross fixed capital formation growth rate (GFCFG) is used as proxy of physical capital,
- INF is the measure of inflation rate,
- HC represents Human Capital; secondary school enrollment is used as a proxy of human capital,
- PF is the measure of Political Freedom
- μ is the error term

IV.I The ARDL Model to Cointegration
To find long-run relationship among different variables of time series, various techniques and methods are available. To test long-run relationship, Engle and Granger (1987) used cointegration approach, Phillips and Hansen (1990) used modified OLS procedure and maximum likelihood by Johansen-Juselius (1990). Pesaran (1997) extended further this approach when variables of same order included in the model are combined. This test is not fit for small sample size because it has a major consequence of low power. Hence, the ARDL approach was used by Pesaran and Shin (1999) and extended further by Pesaran et al. (2001). For several reasons, this approach has been used in case of multivariate models.

The ARDL can be applied whether the basic regressors are stationary at level $I(0)$, purely at first difference I(1) or mix order of co-integration (Pesaran, 1997). The ARDL is not applicable in case of $I(2)$ variables. For the short-run dynamics and long-run equilibrium, the ARDL has better statistical approach as compared with Engle-Granger technique because the former is based on Vector Error Correction Model (VECM) and the latter is residual based (Pattichis, 1999). It is required to represent an equation in a conditional ARDL model in concern to the bound testing methodology as follows:

$$\Delta GDPg_t = \beta_1 + \beta_2 GDPg_{t-1} + \beta_3 FD_{it-1} + \beta_4 PF_{t-1} + \beta_5 X_{it-1}$$
$$+ \sum_{k=1}^{P} \beta_k \Delta GDPg_{it-k} + \sum_{j=0}^{P} \delta_j \Delta PF_{t-j} + \sum_{n=0}^{P} \gamma_n \Delta X_{it-n} + \mu_{it} \quad (3)$$

where the notation Δ shows change in variables.

The study will find the trend of association between variables in bound testing of Wald test in case of Pakistan. The following factors are necessary for applying Wald test: (1) integration order I(d) of the variables in ARDL model (2) whether intercept, trend or both are incorporated in the ARDL model (3) the number of explanatory variables in the ARDL model. The calculated F-value is compared with tabulated F-value developed by Pesaran and Pesaran (1997) or Pesaran et al. (2001) and additionally developed by Narayan (2005). The null hypothesis can be rejected if the F-statistic is greater than upper critical value in spite of integration order of the variables I(0) or I(1). It means that long-run relationship exists among variables. The null hypothesis cannot be rejected if F-statistic is less than lower critical value. However, if the F-statistic falls between upper and lower bounds, the test is inconclusive. When all the variables are stationary at first difference I(1), the decision criteria is based on upper critical value. If all the variables are stationary at level i.e. they are I(0), the decision criteria is based on lower critical value. The null and alternative hypotheses for cointegration test on the basis of above equation are given as:

$$H_0 : \beta_2 = \beta_3 = \beta_4 = \beta_5 = 0.$$

It states that there exists no cointegration among the variables.

$$H_1 : \beta_2 \neq \beta_3 \neq \beta_4 \neq \beta_5 \neq 0.$$

It states that there exists cointegration among the variables.

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If long-run cointegration relationship among variables confirms then the following Vector Error Correction Model (VECM) is needed to find short run relationship among the variables:

$$\Delta GDPg_t = \beta_1 + \sum_{k=1}^{p} \beta_k \Delta GDPg_{it-k} + \sum_{j=0}^{p} \delta_j \Delta PF_{t-j}$$
$$+ \sum_{n=0}^{p} \gamma_n \Delta X_{it-n} + \varphi ECT_{t-1} + \mu_{it} \qquad (4)$$

where ECT_{t-1} represents one time period lagged error correction term. The ECM specifies the adjustment speed back to the log-run equilibrium after a short-run shock. The diagnostic tests are carried out to ensure the goodness of fit of ARDL model. The sensitivity tests check the autoregressive, normality, heteroscedasticity, conditional heteroscedasticity and serial correlation related with the model.

V. Empirical Results and Discussion

The augmented Dickey-Fuller (ADF) (1981) test is used for checking the stationarity of the variables. The results reported in table are describing that economic growth, physical capital and inflation are stationary at level $I(0)$. While the variables, political freedom, human capital, inflation and economic affairs expenditures decentralization are stationary not stationary at level. But at first difference $I(1)$ all the variables of the model become stationary. Hence there is mix order of integration among the variables of the model which is suitable condition for applying Auto-regressive Distributed lag (ARDL) bound testing approach to co integration.

Table 2
Results of Unit Root Test

Variables	At Level		At 1ˢᵗ difference	
	t-statistics	p-value	t-statistics	p-value
GDPPCG	-5.564786	0.0000	-11.12846	0.0000
PF	-2.237688	0.1967	-6.488029	0.0000
GFCFG	-5.139609	0.0001	-9.215234	0.0000
HC	1.922534	0.9997	-4.090362	0.0028
INF	-3.230477	0.0254	-7.583488	0.0000
EAED	-2.381281	0.1533	-8.227437	0.0000

The lag order selection criterion of variables is presented in Table 3. An optimal lag length has been chosen on the basis of these criteria. The maximum two lags are permitted in Vector Auto-Regressive (VAR) to determine the optimum lag length on the basis of number of observations, the number of variables to be analyzed and lag constraint of the cointegration test. Lag selection like Schwarz information criteria (SC), Sequential Modified Likelihood Ratio (LR), Akaik Information Criteria (AIC), Final Prediction Error (FPE) and Hannan-Quinn Information Criteria (HQ) recommend an optimal lag length of 1. Hence for the analysis, the lag length 1 is being used.

The results of the bound testing approach are presented in table 4. The results of bound testing approach show that F-statistic is greater than the upper bound value at 5 percent so there is co-integration among the variables of the model. The long run results of the study are presented in the table 5, the results show that economic affairs expenditures decentralization is significant and negative relationship with economic growth in Pakistan. The results highlight that political freedom has negative and insignificant impact on economic growth. The estimated results show that inflation has negative and insignificant impact on economic growth. The estimated results of this study support the Iqbal et al., (2013). Human capital has negative and significant impact on economic growth in Pakistan as Afzal et al., (2010) and Middendorfe

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(2006) have study with same findings. The physical capital has significant and positive impact on economic growth in Pakistan as Jan et al., (2013) mention that physical capital is life blood of an economy.

Table 3
Lag Length Selection

VAR Lag Order Selection Criteria					
Lag	LogL	LR	FPE	AIC	SC	HQ
0	-657.9136	NA	24634482	34.04685	34.30279	34.13868
1	-506.6978	248.1491*	68505.75*	28.13835*	29.92988*	28.78113*
2	-479.8762	35.76215	125574.7	28.60904	31.93616	29.80278
* indicates lag order selected by the criterion						
LR: sequential modified LR test statistic (each test at 5% level)						
FPE: Final prediction error						
AIC: Akaike information criterion						
SC: Schwarz information criterion						
HQ: Hannan-Quinn information criterion						

Table 4
Bound testing analysis

F-statistic (Wald-Test) = 7.5145		
Level of Significance	Lower Bound Value	Upper Bound Value
5%	2.9873	4.3292
10%	2.4729	3.6840

Table 5
Long-run Results

Dependent variable= GDPPCG			
Variable	Coefficient	t-Statistic	p-value
EAED	-3.6651	-2.7281	0.010
PF	.33817	1.1133	.274
GFCFG	.084768	1.9718	.057
INF	-.043638	-.91665	.366
HC	-.0011990	-2.5637	.015

Table 6
Short-run Results

Dependent variable= dGDPPCG			
Variable	Coefficient	t-Statistic	p-value
dEAED	-1.2171	-.83170	.412
dPF	.39058	1.1243	.269
dGFCFG	.097907	1.8943	.067
dINF	-.050402	-.91252	.368
dHC	-.0013849	-2.4108	.022
Ecm (-1)	-1.1550	-6.9632	.000

After finding cointegration and long run results now we use error correction for examining the short run relationship among the variables of the model. The coefficient of ECT (-1) gives the adjustment speed of the model towards long-run equilibrium. The estimated coefficient of ECT is statistically significant and

the negative sign shows the convergence to the equilibrium. The coefficient indicates the time period is approximately nine months 1/1.155= 0.865801 for adjustment. Highly significant estimated coefficient of ECT also indicates cointegration among variables of our model.

Plot of Cumulative Sum of Recursive Residuals

The straight lines represent critical bounds at 5% significance level

Plot of Cumulative Sum of Squares of Recursive Residuals

The straight lines represent critical bounds at 5% significance level
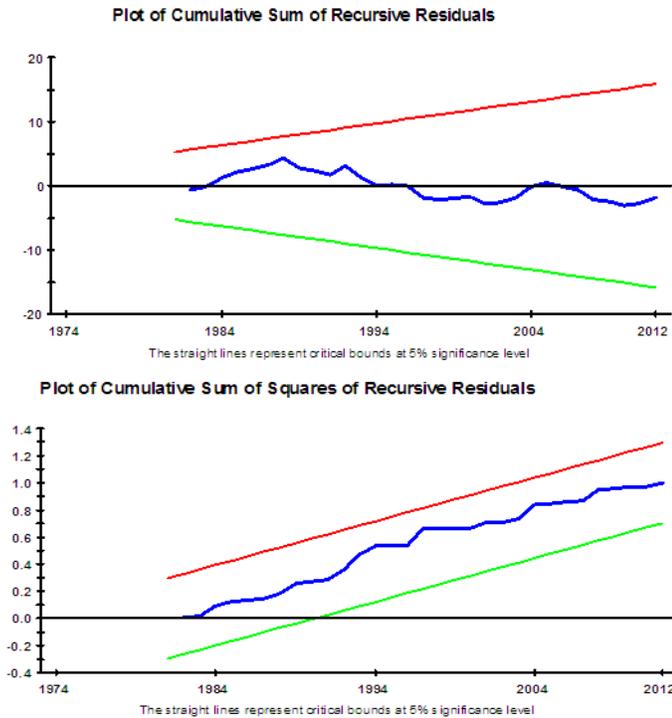
The cumulative sum (CUSUM) and CUSUMQ of recursive residuals are used to detect the structural stability of the equations. The systematic changes in the regression coefficients are detected through diagnostic tests. While the abrupt changes in the regression coefficients are identified through CUSUM and CUSUMQ. The results found in figures indicate that the test statistics are within band of 5 percent confidence interval. This implies the stability of the estimated model over the selected time period.

VI. Conclusions and Recommendations

The core idea behind this study is to examine the connection between decentralized public spending and economic growth of Pakistan. Particularly, present study provides the empirical evidence that decentralized economic affairs expenditures have negative impact on economic growth of Pakistan. The findings of the study reveal that the coefficient of decentralized economic affairs expenditures have found to be robust and negative. This confirms that decentralized economic affairs expenditures significantly reduces economic growth of Pakistan. The expenditures under economic affairs mainly energy, transport, construction and communication must be centralized. It means these expenditures should be carried out by central government in order to enhance economic growth. In the light of estimated empirical evidence, it is proposed that more decentralization of economic affairs expenditures must be restricted in some extent for enhancing economic growth in Pakistan.

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Appendix

Construction and Descriptions of Variables

The present study covers the time span from 1972 to 2012. Construction of the variables, their definitions and data sources are given as below:

   A. Fiscal Decentralization Measures

It is important to establish measures of fiscal decentralization to examine its role empirically. In literature on budget data, there are two methods which are used to compute FD, one is decentralization of

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expenditure and the other is decentralization of government income. Expenditure decentralization (ED) is calculated by dividing sub-national public spending on the aggregate public spending (aggregate of national and sub-national). Oates (1972) describes revenue centralization as a ratio of the central government revenue to the total government revenue and expenditure centralization as a ratio of the central government spending to total public spending. Woller and Phillips (1998) dropped defense expenditures and social security from the aggregate government expenditures in measuring FD because they were of the view that these spending do not represent decentralized public spending rather these are non-decentralized.

B. Economic Affairs Expenditures Decentralization

The ratio of provincial government economic affairs expenditures to total government economic affairs expenditures (Provincial as well as federal) is termed as Economic Affairs Expenditures Decentralization.

$$EAED \ = \ PEAE \ / \ PEAE + FEAE$$

Where

$EAED$, $PEAE$ and $FEAE$ are 'Economic Affairs Expenditures Decentralization', 'Provincial Economic Affairs Expenditures' and 'Federal Economic Affairs Expenditures', respectively. The data has been collected from Pakistan Statistical Year Book (various issues) published by Pakistan Bureau of Statistics, Government of Pakistan. Economic affairs expenditures include general economic, commercial and labor affairs, agriculture, food, irrigation, forestry and fishing. These expenditures also include construction, communication, energy, fuel and transport.

C. GDP Per Capita Growth Rate

The GDP per capita growth rate (GDPPCG) is in percentage form. The data for the variable has been obtained from World Development Indicators published by World Bank.

D. Political Freedom

The Political Freedom is an average Index of Political Rights Index and Civil Liberty Index. The Index ranges from 0(Full Freedom) to 7(No Freedom). The data has been taken from Freedom House.

E. Human Capital

The proxy of secondary school enrolment is taken as human capital. The data is taken from Economic Survey of Pakistan (2012-13).

F. Physical Capital

The Gross Fixed Capital Formation Growth rate is used as a proxy of Physical Capital. The data for this variable is taken from World Development Indicators published by World Bank.

G. Inflation Rate

The Inflation Rate is in annual percentage and the data has been collected from World Development Indicators published by World Bank.