Instrumental Effects of Fiscal Policy for Pakistan Economy

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Fiscal policy has much controversial debate regarding its effectiveness on economic growth. Taxation and government expenditure are two main instruments of fiscal policy. This paper is aimed to analyze the effect of different categories of government expenditure on economic growth of Pakistan. Based on impact on economic growth, government expenditures are classified into productive (having positive or neutral effect on economic growth) and unproductive expenditures (having negative or insignificant impact on economic growth). The data time span for this study is 1979-2012. After classification of expenditures, the impact of fiscal instruments is analyzed by utilizing the ARDL approach of Co integration which is a better estimation technique for small sample size. The results reveal that unproductive government expenditure have negative impact while productive government expenditure has insignificant impact on the economic growth. It is found that private investment positively and significantly affect the economic growth. On the other side, direct and indirect taxes have also insignificant impact on economic growth of Pakistan

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Introduction

There is a considerable debate over the efficacy of fiscal policy on economic growth, especially in developing countries. On the theoretical front, however, there are two main strands of literature regarding the role of fiscal policy. One view suggests that cutbacks in government spending are justified by the low productivity and inefficiency of government expenditures and the high welfare cost of taxation.

An alternative view is that government's support for knowledge accumulation, research & development, productive investment, the maintenance of law and order and the provision of other public goods and services can stimulate growth in both the short-run and the long run (Easterly and Ribelo (1993), Mauro (1995), Folster and Henrekson (1999).

According to neoclassical economists that every government should adopt the policy of balanced budget, i.e. the expenditures of a government must be equal to its revenues[2]. In other words, government imposes taxes equal to the expenditures which are necessary for provision of public goods and stability. They rejected this notion that fiscal policy is effective and maintained that fiscal policy by itself is largely ineffective that what matters is what happens to the quantity of money. They consider that effects of fiscal policy are temporary and minor.

On the other side, neo-Keynesian economists emphasized the budget deficits to sustain economy. They are of view that government should print new money instead of imposing taxes to fulfill its expenditures. They believe that fiscal policy actions exert significant and sustained influence on the level of economic activity. Fiscal policy variables are

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[2] It is also known as Swedish Budget, which was successful in maintaining stable economy.

among the important non-monetary factors which they believe also effect income. [3]

Barro (1990) grouped the public expenditures based on their impact on economic growth in productive public expenditures (which have a positive or neutral effect on economic growth) and unproductive public expenditures (which have negative or an insignificant impact on economic growth). Barro and Xavier Sala-i-Martin (2004) grouped the public revenues based on their impact on economic growth in distortionary public revenues (which have negative effects on economic growth) and non-distortionary public revenues (which are neutral or have an insignificant impact on economic growth).

It is generally argued that direct taxes may restrain the economic growth while indirect taxes have not different effects on economic growth. Atkinson and Stern (1980), Widmalm (2001) and European Commission (2006) found a neutral or positive impact of indirect taxes on economic growth while negative for direct taxes.

Barro (1990) and Kneller et al (1999) provided a theoretical basis for, as well as empirical evidence of, the beneficial effect of productive government expenditure and the harmful effect of taxation. In their empirical testing of the theoretical model for 22 OECD countries, Kneller et al (1999) used panel data estimation technique to verify Barro's (1990) theoretical model. But time series techniques are applied on annual time series data covering the period 1979– 2012 to carry out this analysis for a single country, Pakistan to see the effects of different categories of government expenditure on economic growth. Government expenditures are classified into productive and unproductive while tax revenues are decomposed into distortionary and non-distortionary categories.

Over the last two decades, the impact of fiscal policy has generated large volume of both theoretical and empirical literature. However,

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[3] For details see, Froyen, R.T. (1986), "Macroeconomics", Macmillan Publishing Company, New York.

most of these studies paid more attention to developed economies and the inclusion of developing countries in case of cross-country studies. A problem with most studies is that they do not test the effects of fiscal policy taking into account the structure of both taxation and expenditure, i.e. they focus on one side of government activity ignoring, at least partially, the other. The objective of this paper therefore is to disintegrate the government expenditures into productive and unproductive government expenditure following the Barro's criterion (1990) and investigating other causal factors that are hindrance in the path of sustainable economic growth of Pakistan covering the period from 1979-2012. It is also intended to make policy recommendations in the context of derived results.

The rest of the paper is organized as follow: section II presents the review of previous studies while section III describes the model specification and methodology. Section IV presents the empirical results and their interpretation. Furthermore, the conclusions and policy implications are part of section V.

Literature Review

Following literature review provide evidence that fiscal policy has different impacts on economic growth in the world as well as Pakistan by using same techniques and methods. There is an ample literature on this topic but most of the studies explored the relationship of fiscal policy and economic growth but much attention was not given for disintegrated tools of fiscal policy regarding their impact on economic growth. Furthermore, there is hardly any study present in case of Pakistan which analyses the impact of different categories of government expenditures upon economic growth.

Nazir et al (2013) investigated the long and short run effect of fiscal policy on GDP growth of Pakistan. Government consumption expenditure and per capita real revenues are used as fiscal variables while discount rate, trade openness and gross fixed capital formation

are treated as control variables to analyze their impact on GDP growth for the economy of Pakistan for the period of 1980-2012. Johansen co-integration and vector error correction model are applied to know the effects of fiscal variables on GDP growth in short and long run. The findings show that fiscal policy has vital role for meaningful economic progress. This study pointed out that government consumption expenditure has negative relation with GDP growth and public revenues have a progressive impact on economic activity of Pakistan. Less consumption expenditure and effective revenue structure is advocated to boost the economic growth of Pakistan.

Babalola and Aminu (2011) investigated the relationship between fiscal policy and economic growth in Nigeria over the period covering 1977-2009. Engle-Granger approach and Error Correction Model are applied to test the long and short run relationship among variables. GDP growth rate is taken as dependent variable while productive government expenditure, unproductive government expenditure, direct income tax and capital expenditure are considered as independent variables. The results show that both productive and unproductive expenditures have insignificant impact on economic growth. On the other side, contrary to economic theory, direct income tax has positive effect while capital expenditure has negative impact on economic growth of Nigeria. Improvement in government expenditure on health, education and economic services is recommended to boost economic growth.

Christie (2011) elaborated the different aspects of the relationship between government expenditure and long term economic growth. A model is developed by applying general method of moments (GMM) dynamic estimation techniques to know the nature of relationship among described variables for the panel of 136 developed and developing countries over the period of 1971-2005. It was concluded that if government spending is above critical threshold then there is negative effect on economic growth. The threshold level for

developed countries is 26-32 percent and for developing countries is 33 percent. Upon the basis of derived results, it is advised to control government expenditure because three quarters of 28 developed countries have a government size exceeding 30 percent of GDP as of 2001-2005. Ever-expanding governments will have negative effects on long run growth in these economies. It is also found in study that improvements in quality of government spending can dampen these negative effects. It is also pointed out that spending below the threshold level imposes serious offsetting influences between productive and unproductive expenditure, which mitigate the potential benefits from increased public spending.

Fatima et al (2011) explored the impact of fiscal deficit on investment and economic growth for the economy of Pakistan over the period of 1980 to 2009. The two stage least square method is adopted to estimate the simultaneous equation model. GDP growth and investment are considered as dependent variables while fiscal deficit, investment, exports, imports, foreign aid, inflation, real interest rate and population growth are taken as independent variables. It is concluded that fiscal deficit affects economic growth of country very adversely because of poor tax collection, inelastic tax system, complex tax laws, and heavy reliance on foreign trade taxes, large tax exemptions and incentives. Results also show that there is persistence deficit in balance of payments that creates fiscal deficit. Improvement in tax system and lowering the interest rate are policy implications for government in this study.

Kakar (2011) determined the impact of fiscal variables on economic growth in Pakistan covering the period from 1980-2009. Johansen Co integration, error correction and Granger causality techniques are applied to determine the relationship among the variables. In this study, GDP growth rate is considered as dependent variable while tax revenues, real interest rate, public expenditure, consumer price index, capital stock and population growth rate are taken as independent

variable. The findings show that fiscal policy affects the economic growth in long run. In short run, economic development can be stimulated by controlling interest rate and government expenditure at the cost of inflation.

Ali and Ahmad (2010) examined the effects of fiscal policy on macroeconomic activities over the period 1972-2008 for the economy of Pakistan. They applied the auto regressive distributed lag model and error correction model to determine the long and short run effect of fiscal policy on economic growth of Pakistan. Fiscal deficit and current account deficit are used as fiscal variables while private investment and inflation are treated as control variables. They found that long run relationship exists overall fiscal deficit and economic growth. Non development expenditure and politically motivated expenditure restrains the economic growth. They also analyzed that fiscal deficit positively affects up to some threshold level and it was considered in the narrow band of 3 to 4 percent of GDP. They advised that if government is able to reduce its budget deficit, eventually it would get rid of the vicious circle of debt overhanging problem, because the debt-GDP ratio would increase only if the fiscal deficit as a percentage of GDP exceeds the real GDP growth rate.

Rizvi et al (2010) investigated the relationship between government spending and economic growth in the province of Sindh for the period of 1979 to 2008. The Johansen co integration and error correction model are applied to know the effect in long and short run. Furthermore, impulse response function is also applied to observe the shocks of government spending on economic growth in Pakistan. It is derived that there is positive long run as well as short run relationship between development expenditure and economic growth in the province of Sindh. The Granger causality test indicates that government expenditures are caused by the economic growth. Impulse response function shows that GDP shocks explain 8 percent change in development expenditures.

Sheikh et al (2010) investigated the impact of domestic debt on economic growth of Pakistan over the period of 1972 to 2009. In this study, GDP is considered as dependent variable while total government expenditures, total domestic debt, exports, worker remittances, money supply, domestic debt servicing, exchange rate and foreign direct investment are considered as independent variables. Regression analysis of the study shows that domestic debt favorably affects the economic growth in Pakistan. It implies that domestic borrowing have been used to finance those government expenditure that contribute to growth rate of GDP. On the other side, adverse impact of domestic debt servicing on economic growth is also found. The negative impact of domestic debt servicing on economic growth is more than positive impact of domestic debt. To improve the revenue sources and efficient pursuit of tax reforms are advocated in this study.

Benos (2009) decomposed the public spending and revenues into subcategories and estimated their impact on economic growth for 14 EU countries over the period of 1990-2006. In the study, spending on education, health, housing community amenities, recreation, culture, religion, economic affairs, public order safety, defense and taxes on income, wealth, production, imports, capital and fiscal deficits are treated as fiscal variables while population, secondary education, employment growth, exports, imports and private investment are considered as non-fiscal variables. OLS and panel econometric techniques are applied and found that government spending on human capital enhancing activities does not affect growth significantly while expenditure on infrastructure has a positive impact on economic growth. It is also observed that distortionary taxes have negative effect on economic growth while budget deficit has an ambiguous impact on growth.

Padda and Akram (2009) investigated the impact of tax policies on economic growth for seven Asian economies namely; Pakistan, India,

Indonesia, Philippines, Nepal, Sri Lanka and Thailand over the period of 1971-2007. The results of panel data econometric technique show that the tax policies adopted by the developing countries have no evidence that the taxes affect the economic growth permanently. It is also derived that higher tax rate permanently reduces the level of output growth rate. Upon the basis of findings of study, it is advised that government should use debt and tax instruments simultaneously. Government should analyze that how much part of unexpected increase in government expenditure or decrease in output is becoming the permanent part of its expenditure. The permanent part should be financed by imposing taxes and transitory part should be financed by issuing bonds.

These studies reinforce the argument that empirical outcomes are likely to differ from country to country and time to time, even by using same techniques and methods. It can be viewed also from literature that there is hardly any study in our observation which may explore the effects of disintegrated instruments of fiscal policy in Pakistan. In this paper, efforts are made to analyze the role of fiscal policy and its disintegrated instruments for the macroeconomic activities like economic growth, private investment, external debt, inflation and fiscal deficit of Pakistan.

III.   Model Specification and Methodology
1.   Model Specification

In this section, a model is developed to know the effect of different categories of government expenditures and tax revenues. Upon the basis of derived results, expenditures are categorized into productive and unproductive expenditures while taxes are considered as distortionary and non-distortionary taxes.

Endogenous growth models provide an insight into why countries grow at different rates over long periods of time. Some of these models describe the influence of government expenditures and tax

rates on economic growth of an economy. Following Barro (1990), the standard model of representative, infinite lived household in a closed economy seeks to maximize overall utility as given by

$$U = \int_0^\infty u(c)\, e^{-pt}\, dt \qquad (1)$$

Where c is consumption per person and $p > 0$ is the constant rate of time preference. Population is considered as constant and utility function is given by

$$u(c) = \frac{c^{1-\theta} - 1}{1-\theta} \qquad (2)$$

It is assumed constant returns of capital following Rebelo (1991), so that

$$y = Ak \qquad (3)$$

where $A > 0$ is the constant net marginal product of capital. This production function can be modified to distinguish the human and non-human capital.

Now the analysis is incorporated with public sector. It is assumed that g is the quantity of public services provided to each household producer and these public services can be considered as an input to private production. Production now exhibits constant returns to scale in k and g together but diminishing returns in k separately. Now production function can be written as

$$y = \Phi(k,g) = \Phi\left(\frac{g}{k}\right) \qquad (4)$$

It is assumed here that production function is Cobb-Douglass, and then it can be written as

$$\frac{y}{k} = \Phi\left(\frac{g}{k}\right) = A\left(\frac{g}{k}\right)^{\propto} \qquad (5)$$

After simplifying, we get

$$y = Ak^{1-a}g^a \qquad (6)$$

Where y is per capita output, A is a productivity factor and k is per capita private capital. If the government expenditures are financed by a flat rate income tax

$$g = T = ty = t.\,\Phi\left(\frac{g}{k}\right) \qquad (7)$$

Where T is government revenue, t is the tax rate and g shows aggregate expenditure. But this equation has a constraint of balanced budget. In developing countries, it is hardly observed that government balances its budget so Kneller et al (1999) and Bleaney et al (2000) took a more practical view by assuming a non-balancing government budget constraint in some periods. Now (2.10) can be re-write as,

$$n\,g + C + b = L + \tau\,n\,y \qquad\qquad (8)$$

where b is the budget deficit/surplus in a given period. Both C and L are hypothesized to have zero effects on growth. The predicted sign of g and τ is positive and negative respectively. Similarly b is zero as long as Ricardian equivalence holds, but may not be zero otherwise (Bleaney et al, 2000).

Theoretically, a proportional tax on output affects private investment but a lump sum tax does not. Subject to specified utility function, Barro (1990) and Barro and Sala-i-Martin (1992) derived the long run growth rate in this model as,

$$\gamma = \lambda(1-\tau)(1-a)A^{1/(1-a)}(g/y)^{a/1-a} - \mu \qquad\qquad (9)$$

Where λ and μ stand for parameters in the assumed utility function. This equation shows that growth rate is decreasing function of distortionary tax rate τ) and an increasing function of productive government expenditures (g) while growth rate is not affected by non-distortionary revenues (L) and unproductive government expenditures(C).

By considering both fiscal (x_{it}) and non-fiscal (z_{it}) variables in the spirit of Kneller et al (1999), the growth equation becomes,

$$y_i = \propto + \sum_{i=1}^{k} \beta_i z_{it} + \sum_{j=1}^{m} \gamma_j x_{jt} + \in_{it} \qquad\qquad (10)$$

If the budget constraint is fully specified, then

$$\sum_{j=1}^{m} x_{jt} = 0$$

So expenditure must balance the revenue. To avoid this, we omit at least one element of x (x_m) to avoid perfect collinearity (Kneller et al 1999).Omitted variable should have neutral effect on economic growth. We can re-write (2.13) in the following form,

$$y_{it} = \propto + \sum_{i=1}^{k} \beta_i z_{it} + \sum_{j=1}^{m-1} \gamma_j x_{jt} + \gamma_m x_{mt} + \in_{it} \qquad (11)$$

Form (11) ,we omit x_{mt} to obtain our final growth equation

$$y_{it} = \propto + \sum_{i=1}^{k} \beta_i z_{it} + \sum_{j=1}^{m-1} (\gamma_j - \gamma_m) x_{jt} + \in_{it} \qquad (12)$$

Following is general form to analyze the impact of fiscal policy on economic growth.

$$Y = \beta_0 + \beta_1\, FPt + \beta_2\, Zt + \mu \qquad (13)$$

Where *FP* represents the fiscal policy variables and *Z* shows the control variables.

2. Methodology

To check the stationarity or the presence of unit root in time series data, Augmented Dicky Fuller Test is applied. After finding the integrating order of variables, the long run ARDL model can be estimated. The next step is to estimate the error correction model representation for short run dynamics. A simple OLS method is also applied to test the impact of different types of government expenditures and taxes to classify into productive and unproductive expenditures.

IV. Empirical Analysis

ADF and PP unit root test are applied in order to determine the order of integration of all variables. A summary of these tests is reported in following table.

Table 1

Unit Root Tests Results

VARIABLES	ADF (DRIFT & TREND)	
	LEVEL	1st DIFF
CAD (Current Account Deficit)	-2.00	-6.24*
CSE (Community Services Expenditures)	-2.21	-7.65*
DE (Development Expenditures)	-4.15*	-5.48*
DFE (Defense Expenditures)	-1.80	-5.26*
DT (Direct Taxes)	-3.72**	-7.47*
ED (External Debt)	-1.79	-4.69*
ESE (Economic Services Expenditures)	-2.38	-9.57*
GAE(General Administration Expenditures)	-1.67	-3.79*
IDT (Indirect Taxes)	1.77	-3.21***
INF (Inflation)	-2.12	-5.95*
INT (Interest Payments)	-3.27***	-5.0*
LAO (Law and Order Expenditures)	-3.78**	-6.72*
PCI (Per Capita Income)	-2.53	-5.85*
PGC (Productive Government Expenditures)	-1.45	-5.68*
PI (Private Investment)	-0.18	-7.50*
SUB (Subsidies)	-1.52	-5.53*
UGC (Unproductive Government Expenditure)	-2.91	-6.29*

Note: *, ** and *** shows significance at 1%, 5% and 10% level respectively.

Results presented in the above table show that each of the variables is integrated of different order. Some of them are I(0) while some are I(1). In this situation, econometric theory suggests that ARDL approach is the appropriate one in order to determine the dynamics of long run and short run dynamics of the relationship between variables of different models.

Now a regression is run using OLS method to know the impact of different expenditure variables on economic growth. After estimation of coefficients, different diagnostic tests are applied to check the

different assumptions of OLS regarding data.[4]A summary of estimated results is described below.

Table 2

Estimated Coefficients for Classification of Expenditures

Dependent Variable Real Per Capita Income	OLS Technique			
Regressors	Coefficients	Std. Error	t-Statistic	Prob.
CSE (community services expenditures)	0.12*	0.24	0.51	0.76
DFE (defense expenditures)	0.06	0.29	0.23	0.82
ESE (economic services expenditures)	0.06	0.11	0.60	0.55
GAE (general administration expenditure)	-0.48**	0.20	-2.31	0.03
LAO (law and order expenditure)	0.25	0.48	0.48	0.63
PI (private investment)	0.80*	0.69	1.15	0.00
INF (inflation)	-0.42*	0.16	-2.59	0.01
INT (interest payments)	-0.12**	0.18	-0.67	0.04
SUB (subsidies)	0.07	0.22	0.33	0.74
ED (external debt)	-0.56**	0.98	-0.57	0.05
DE (development expenditures)	0.19*	0.34	0.58	0.00
R^2 =0.96 Adjusted R^2=0.95 DW-stat =1.95 Serial Correlation LM Test=0.04(0.94) ARCH Test =0.69(0.41) White Heteroscedasticity =1.65(0.22) Jarque-Bera Test =0.07(0.96)				

Note: *and **shows significance at 1% and 5% level of significance.

The expenditure variables are calculated as percentage of GDP and then log transformation is applied. The estimated results indicate that community services expenditure (CSE), defense expenditure (DFE), economic services expenditure (ESE), development expenditure (DE) and subsidies(SUB) (because subsidies include the much people in

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[4] -Heteroscedasticity test, LM test, ARCH test, Normality test.

economic growth by increasing their purchasing power) have positive or neutral effect on economic growth so these expenditures are considered as productive government expenditure while general administration expenditure (GAE), interest payments (INT) and expenditure for law and order (LAO) have negative or insignificant impact on economic growth so these are treated as unproductive expenditure. The LAO expenditures are not sufficient to have a significant impact on economic growth. Taxation is another important tool of fiscal policy. Usually, any tax has a potential or real distortionary impact on economic growth, because it affects the choices of individual economic subjects (firms and individuals) regarding the activities which they carry on (production, investment, consumption or saving). (Mendoza et al.(1997), Milesi-Ferretti and Roubini (1998)).

A regression is also run using OLS method to know the impact of groups of tax revenues. The summary of results is pasted in the following.

Table3

Estimated Coefficients for Taxes

Dependent Variable Real Per Capita Income	OLS Technique			
Regressors	Coefficients	Std. Error	t-Statistic	Prob.
DT (direct taxes)	-0.82*	0.36	-2.24	0.01
IDT(indirect taxes)	-0.37	0.18	2.03	0.15
PI (private investment)	0.46*	0.47	0.96	0.00
ED (external debt)	-0.48*	0.64	-0.74	0.01
CAD (current account deficit)	-0.24*	0.09	-2.61	0.01
R^2 =0.96 Adjusted R^2=0.95 DW-stat =1.81 Serial Correlation LM Test=0.22(0.63) ARCH Test =0.28(0.59) White Heteroscedasticity =2.15(0.22) Jarque-Bera Test =0.38(0.82) Note: *and **shows significance at 1% and 5% level of significance.				

The data of variables except real per capita income growth is taken as percentage of GDP and then log transformation is applied. Real per capita income is considered as dependent variable to show the economic growth. After estimation of model, different diagnostic tests are applied to check the efficiency of data. Results show that direct tax revenues (DT) have significant negative impact on economic growth while indirect tax revenues (IDT) have insignificant effect on economic growth for Pakistan. It is also clear from results that private investment (PI) positively and significantly affects economic growth while external debt (ED) and current account deficit (CAD) negatively and significantly affect the economic growth.

After estimating the tools of fiscal policy separately, now a detailed and joint analysis of fiscal policy on economic growth is presented. Now ARDL technique is applied to estimate the long run and short run coefficients.

In this model, productive government expenditure (PGC), unproductive government expenditure (UGC), direct tax revenues (DT), indirect tax revenues (IDT), public debt (TD), and private investment (PI) are used as percentage of GDP while growth rates of inflation (INF) and real per capita income (PCI) are included where PCI is dependent variable and rest of variables are independent. All data is applied after log transformation. A summary of estimated coefficients is given below.

Table 4
Estimated Long Run Coefficients for Growth Equation

Dependent Variable Real Per Capita Income	ARDL Technique Order(1,0,1,0,0,1,0,0)			
Regressors	Coefficients	Std. Error	t-Statistic	Prob.
PGC	0.21	0.41	0.52	0.60
UGC	-0.17*	0.23	-0.75	0.00
DT	-0.38***	0.46	0.81	0.09
IDT	-0.14	0.46	-0.31	0.75
INF	-0.39*	0.13	-2.82	0.01
PI	0.86*	0.50	1.69	0.00
TD	-0.64**	0.29	-2.14	0.04
R^2 =0.97 Adjusted R^2=0.96 DW-stat =1.78 Serial Correlation LM Test=0.01(0.91) ARCH Test =1.62(0.21) White Heteroscedasticity =0.91(0.59) Jarque-Bera Test =0.38(0.82)				

Note: *, **and *** shows significance at 1%, 5% and 10% level of significance respectively.

It is clear from results that all variables are significant except PGC and IDT. The coefficient of PGC is positive but insignificant. One of the reasons might be the neutral effect of different categories of government expenditure on economic growth as described in table 2 because many types of public expenditure are not public oriented. Indirect taxes have insignificant effect. It may have insignificant effect due to corruption and bribery prevailing in Pakistan. UGC has negative and significant impact on economic growth. The major share of UGC goes for general administration and interest payments. There are many unnecessary expenditure regarding our bureaucracy and politicians. So public is deprived of fruits of such expenditure so it has

negative impact on growth of real per capita income. It is evident that inflation negatively and significantly affects the economic growth. This is due to the fact that inflation decreases domestic demand and increase the cost of production so it decelerates the economic growth. Barro (2013) analyzed for 100 countries and found that 10 percent increase in the inflation per year reduces the 0.2-0.3 percent economic growth. Khan and Senhadji (2001) investigated for 140 countries and their results suggest the existence of a threshold beyond which the inflation exerts a negative effect on economic growth. The threshold estimate is 7-11 percent for developing countries. Mubarik (2005) suggests 9 percent threshold inflation level above which inflation is inimical for economic growth of Pakistan. Moreover, Ayyoub et al (2011) found a harmful relationship of inflation for economic growth of Pakistan. The sign of coefficient of private investment is positive and significant so it indicates that increase in investment increases the productivity and there are more chances of employment so it accelerates the economic growth. The results show that public debt has also negative and significant impact on economic growth. The obtained results regarding debt are also supported by the studies carried out by Atique and Malik (2012), Rais and Anwar (2012) and Sheikh et al (2010) found an inverse relationship between economic growth and external as well as domestic debt for the economy of Pakistan. It may be due to that a major portion of GDP is spent for interest payments of public debt and it also decreases the foreign exchange reserves so it reduces the economic growth.

After estimating the long run relationship, we are able to estimate the error correction model for short run dynamics.

Table 5

Estimated Short Run Coefficients for Growth Equation

Dependent Variable Real Per Capita Income	ARDL Technique Order (1,0.1,0,0,1,0,0)			
Regressors	Coefficients	Std. Error	t-Statistic	Prob.
ΔPGC	0.15	0.29	0.51	0.61
ΔUGC	-0.50*	0.15	-3.30	0.00
ΔDT	-0.20	0.33	-0.61	0.54
ΔIDT	-0.23	0.55	-0.41	0.68
ΔINF	-0.29*	0.08	-3.47	0.01
ΔPI	0.18*	0.51	0.34	0.00
ΔTD	-0.68*	0.59	-1.16	0.01
ECM_{t-1}	-0.53**	0.24	-2.15	0.05
R^2=0.92 Adjusted R^2=0.84 DW-stat =1.85 Serial Correlation LM Test=0.03(0.85) ARCH Test =0.39(0.53) White Heteroscedasticity =0.27(0.40) Jarque-Bera Test =0.99(0.60)				

Note: * and ** shows significance at 1% and 5% level of significance.

The estimated lagged error correction term ECM_{t-1} is negative and significant. The negative and significant error correction term indicates that there is a long run relationship among the variables. The feedback coefficient is -0.53. It indicates that 53 percent disequilibrium is corrected in the short run. In short run, unproductive government expenditure, inflation and public debt decrease the economic growth 50, 29, and 68% respectively and significantly while PGD, DT and IDT have insignificant effect on economic growth in short run. On the other side, one percent increases in private investment increase 18 percent economic growth in short run.

V.   Conclusion and Policy Implications

The basic purpose of this paper is to investigate the classification and impact of different categories of government expenditure and taxation on economic growth. The data for empirical analysis is used from 1979-2012. To check the stationarity of data, ADF test is applied and found that all variables are integrated of order one or zero. After finding the integration order of variables, ARDL technique is applied.

By applying a simple OLS technique, the impact of different categories of government expenditure on economic growth is examined. Upon the basis of estimated results, expenditures are classified into productive (having positive or neutral effect on economic growth) and unproductive expenditure (having negative or insignificant effect on economic growth). After classification of expenditure, the impact of tools of fiscal policy and existence of long run relationship is determined on economic growth simultaneously. Results indicate that unproductive expenditure and direct taxes negatively and significantly affect the economic growth. On the other side, unproductive government expenditure has positive but insignificant impact on economic growth. There is dire need to reduce the level of unproductive government expenditure and direct taxes that are slowing down the economic growth. There is a major share of productive government expenditure in public expenditure but having insignificant effect. Such steps are required that may turn the productive expenditure into significant level. One reason of insignificance might be the corruption. According to report of transparency international 2013, there was a corruption of $180 billion during the last five years and Pakistan is now at 35th position of corrupted countries in the world. It is also admitted by the chairman of National Accountability Bureau (NAB) in a press conference held on 12th December 2012 that there is estimation of corruption of Rs.10-12 billion in Pakistan daily. Government should have to take

serious steps that may increase the efficiency of productive expenditure and decrease the level of unproductive expenditure to boost the economic growth.

References

Ali, S. and Ahmad, N. (2010), "The Effects of Fiscal Policy on Economic Growth: Empirical Evidences Based on Time Series Data from Pakistan", *The Pakistan Development Review*, 49(4): 497-512.

Atique, R. and Malik, K. (2012), "Impact of Domestic and External Debt on the Economic Growth of Pakistan", *World Applied Sciences Journal* 20(1): 120-129.

Atkinson, A.B. and Stern, N.H. (1980), "On the Switch from Direct to Indirect Taxation", *Journal of Public Economics*, 14:195-224.

Ayyoub, M. et al (2011), "Does Inflation Affect Economic Growth? The Case of Pakistan", *Pakistan Journal of Social Sciences,* 31(1): 51-64.

Babalola, S.K. and Aminu, U. (2011), "Fiscal Policy and Economic Growth Relationship in Nigeria", *International Journal of Business and Social Science,* 2(17).

Barro, R.J. (2013), "Inflation and Economic Growth", *Annals of Economics and Finance,*14(1): 85-109.

Barro, R.J. (1990), "Government Spending in a Simple Model of Endogenous Growth", *Journal of Political Economy*, 98(5):103-125.

Barro, R.J. and Xavier Sala-i-Martin (1992). "Public Finance in Models of Economic Growth", *Review of Economic Studies*, 59: 645-661.

Barro, R.J. and Xavier Sala-i-Martin (2004). *"Economic Growth",* MIT Press.

Benos, N. (2009), "Fiscal Policy and Economic growth: Empirical Evidence from EU Countries" working paper, *University of Loannina*, Greece.

Bleaney, M.F., Gemmel, N. and Kneller, R. (2000). "Testing the Endogenous Growth Model: Public Expenditure, Taxation, and Growth Over the Long Run", *Canadian Journal of Economics* 34(1):36-57.

Christie, A.L. (2011), "Essays on Fiscal Policy and Economic Growth", Ph.D. Dissertation, Georgia State University, Economics Department.

Easterly, W. and Rebelo, S. (1993), "Fiscal Policy and Economic Growth: An Empirical Investigation", *Journal of Monetary Economics*, 32: 417-458.

Euorpean Commission (2006), "Macroeconomic Effects of a Shift from Direct to Indirect Taxation: A Simulation for 15 EU Member States", A Meeting Held at Paris, 14-16 November 2006.

Fatima G., Ahmad A.M., and Rehman W. (2011), "Fiscal Deficit and Economic Growth: An Analysis of Pakistan's Economy", *International Journal of Trade, Economics and Finance*, 2(6).

Folster, S. and Henrekson, M. (1999), "Growth and the Public Sector: A Critique of the Critics", *European Journal of Political Economy*, 15:337-358.

Froyen, R.T. (1986), "Macroeconomics", Macmillan Publishing Company, New York.

Kakar, Z.K. (2011), "Impact of Fiscal Variables on Economic Development of Pakistan", *Romanian Journal of Fiscal Policy,* 2(2):1-10.

Khan, M.S. and Senhadiji S.A.(2001), "Threshold Effects in the Relationship Between Inflation and Growth", *IMF Staff Papers,* 48(1).

Kneller, R., Bleaney, M.F. and Gemmel, N. (1999), "Fiscal Policy and Growth: Evidence from OECD Countries", *Journal of Public Economics*, 74:171-190.

Mauro, P. (1995), "Corruption and Growth", *Quarterly Journal of Economics*, 110:681-712.

Mendoza, E.G., Milesi-Ferretti and Asea, P. (1997), "On the Ineffectiveness of Tax Policy in Altering Long Run Growth:

Harberger's Superneutrality Conjecture", *Journal of Public Economics,* 66: 99-126.

Milesi-Ferretti, and Roubini, N. (1998), "Growth Effects of Income and Consumption Taxes", *Journal of Money, Credit and Banking*30 (4).

Ministry of Finance (Various issue), *"*Pakistan *Economic Survey", Ministry of Finance*, Islamabad, Pakistan.

Mubarik, Y.A. (2005), "Inflation and Growth: An Estimate of the threshold Level of Inflation in Pakistan", *SBP Working Paper Series*, No. 8, June, 2005.

Nazir, R., Anwar M., Irshad M. and Shoukat A. (2013), "Does Fiscal Policy Matter for Growth? Empirical Evidence from Pakistan", *International Journal of Economics and Finance*, 5(3), 2013.

Padda, I.H. and Akram, N. (2009), '"The Impact of Tax Policies on Economic Growth: Evidence from Asian Economies" *The Pakistan Development Review,* 48(4): 961-971.

Rais, S.I. and Anwar, T. (2012), "Public Debt and Economic Growth in Pakistan: A Time Series Analysis From 1972-2010", *Academic Research International,* 2(1).

Rebelo, S. (1991), "Long-Run Policy Analysis and Long-Run Growth", *Journal of Political Economics*, 99(2).

Rizvi, Z.A., Qamar, Z. and Shamim, A., (2010), "Impact of Development Spending on Economic Growth Measuring the Effectiveness of Fiscal Policy in Sindh", *Pakistan Business Review*, 13(4).

Sheikh, M.R., Faridi, M.Z. and Tariq, K. (2010), "Domestic Debt and Economic Growth in Pakistan: An Empirical Analysis", *Pakistan Journal of Social Sciences,* 30(2):373-387.

State Bank of Pakistan (2010), *"Handbook of Statistics on Pakistan Economy"*, SBP, Karachi, Pakistan.

Widmalm, F. (2001), "Tax Structure and growth: Are some Taxes Better than Other?", *Public Choice,* 107:199-219.