

Impact of Government's Spending on the Welfare in Pakistan Economy

Safia Minhaj, Ph.D.

Assistant Professor,
Department of Economics,
University of Karachi, Karachi,
e-mail: safiaminhaj@uok.edu.pk;
Phone # +92 321 2556554

and

Professor Mohammed Nishat, Ph.D.

Institute of Business Administration, Karachi
e-mail: mnishat@iba.edu.pk

Abstract

This research paper attempts to examine the impact and significance of government spending, private investment and trade deficit on the welfare of the society of Pakistan over the period 1972 to 2017, within an ARDL framework. This study also focuses on disaggregated level of government expenditures such as the social sector (health and education), economic services, subsidies, maintenance of law and order in the country. The research questions addressed in this study are, do fiscal measures improve the welfare of the society or do they lead to misallocate public resources and harm the economic welfare? This study also examines the impact of varying composition of government outlays shaping overtime, and determines the short-run as well as long-run effect on major macroeconomic variables. The empirical results indicate that all components of government spending have significant long-run association with individual's welfare variable namely per capita income, except law and order spending which has negative effect but statistically insignificant. In case of employment level, the government spending on education has significant positive long-run impact on employment. However, spending on health has significant negative impact on employment. Other components of government spending have no significant support for employment. This study may provide some guidelines to priorities towards allocation of development and non-development budgets to enhance the welfare of individuals in Pakistan.

Keywords: Government Expenditure; Economic Growth, Welfare and Employment, ARDL

JEL Code: H53, F43, E24, C32

Impact of Government's Spending on the Welfare in Pakistan Economy

1. Introduction

Due to non-existence of Pareto optimality need of governments' role is increasing and economies are recognizing as welfare states. Thus the prime responsibility of the welfare governments that they protect economic and social wellbeing of their citizens. To the fulfillment of this responsibility there is continues increase in fiscal spending on one side and reduction in governments' revenue on the other side create budget deficit. According to the macroeconomic literature, budget deficits are expansionary to the economy as they enhance welfare and growth while budget surpluses are contractionary. However, the notion that more government expenditures can stimulate growth is controversial. When considering the appropriate policy measures that stimulate growth, policymakers are usually interested in demand management policies and supply side policies. Demand management policies concentrate on the management of money supply and government expenditures. Controlling money supply will affect the level of liquidity in the financial market, and thus alters private spending. A change in level of government spending directly affects aggregate demand i.e. private consumption, private investment, and external sector of the economy. All these determinates of aggregate demand directly or indirectly affect the individuals' welfare. Another point of view suggests that large fiscal spending which financed by taxation distort economic efficiency and economic growth via disincentive to work and to invest, discourage efficient allocation of resources. Furthermore, governments' regulation exceeds cost and burden of the economic system. The extreme version of the economists in literature allocate critical role of the government in economic growth especially in settling conflicts between private and social interests.

Loizides and Vamvoukas (2005) empirically evaluated the causal link between the size of the public sector and real per capita income within the bivariate and trivariate frameworks, by resorting the developments in the theory of co-integrated processes. In the choice of government size they followed the procedure adopted by practically all scholars and relate government spending to GNP. Practices, however, are more varied as to which types of public expenditures one should relate to GNP and whether one should use deflated or un-deflated data. Researchers have also used differing approaches regarding the inclusion of transfer payments in the size of the public sector. For example, Ram (1986) and Musgrave and Musgrave (1980) also excluded transfer payments from government expenditure for the reason that their inclusion overstates the size of government. Work by Ahsan, Kwan and Sahni (1996) and Ghali (1998), utilized an aggregate measure of government spending inclusive of transfer payments in their analysis. However, they investigated the causal chain between the expenditure of public sector and growth of the economy, transfer payments were

excluded, in order to be able to differentiate the effects of income redistribution and provision of public services on growth. Their basic results concluded that the public expenditure causes growth in national income both in the short or the long run, which means that public spending fosters overall economic development. Komain Jiranyakul (2007) examined the relationship between government expenditures and economic growth. The main results show that aggregate government expenditures cause economic growth, but economic growth does not cause government expenditures to expand.

In case of Pakistan very limited empirical studies are undertaken in the areas of government spending impact on welfare of individual's and employment particularly disaggregated components of government expenditure. Major studies are identified the impact of government spending and economic growth (Ashghar and Zahra, 2012; Asghar et. al., 2012; Akram and Khan, 2007; Hussain et. al., 2003; Aurangzeb, 2003). The basic research question of this study to find out whether public expenditure raises the welfare of an average citizen of the economy or not? The purpose of this research study is to empirically determine the impact of various components of governments expenditures namely education, health economic services, subsidies, and law and order, budget on economic wellbeing of the individuals, such as income per capita and employment level.

The remaining paper is outlined as follows. Section 2 is related to the detailed review literature. The data and econometric methodology is described in section 3, followed by estimation and discussion of results in section 4. Summary and concluding remarks are given in section 5.

2. Literature Review

Many empirical studies tried to find the relationship between government expenditure and economic growth in both developed and developing countries. Using different theories specifying the model and different research methodologies, highlighted that the effect of government expenditure on economic growth is either negative or positive, similar to the economic theories which confers two different approaches of government expenditure on economic development. Ghura (1995) produced an evidence of a negative relationship between government consumption and economic growth for South African countries. Yasin (2000) examined the relationship of government spending and economic growth in 26 sub-Saharan Africa countries on the basis of neoclassical production function for the same region. By using panel data from 1987 to 1997 period and employing both the fixed effect and random effect techniques, he found a different result which suggests that the government spending on capital formation has the expected positive and significant effect on economic growth and create favorable economic environment. Alexiou (2009) used the same econometric approach and explored the impact of different variables to study economic growth

for seven countries in the South Eastern Europe region spanning from 1995 to 2005. The results indicate that out of the five variables used in the estimation, government spending on capital formation, development assistance, private investment and a proxy for trade-openness all have positive and significant effect on economic growth, whereas the population growth, indicated no impact on economic growth.

Alshahrani & Alsadiq (2014) studied the effect of different types of government expenditure on economic growth in Saudi Arabia. They explored the long-run and short-run effects of the expenditures on growth using Vector Error Correction Model (VECM) technique employed time-series data over the period 1969–2010. Their results indicate that private domestic and public investments, as well as healthcare expenditure, inspire growth in the long-run. The result also indicated that the openness to trade and spending in the housing sector enhances short-run production. Knoop (1999) studied the effects of government spending on economic growth in the US economy, based on endogenous growth theory model, and found that a reduction in government spending would have a negative impact on economic growth and welfare. Guseh (1997) used time-series data over the period 1960–1985 for 59 middle-income developing countries employing the same technique of Knoop (1999), and found opposite results regarding the effects of government size on the rate of economic growth, and suggested that growth in government size has negative effects on economic growth.

Similar study undertaken by Attari & Javed (2013) explored the relationship among the rate of inflation, economic growth and government expenditure in one of developing countries in Asia, i.e. Pakistan. They used disaggregated government expenditure in to the government current expenditure and the government development expenditure during 1980-2010 and concluded that the coefficient of government current expenditure is statistically insignificant, but the coefficient of government development expenditure is statistically significant. The results infer that the government expenditures yield positive externalities and linkages. However, they argued that a large number of issues faced by the government of the developing countries, like utilization and the miss-allocation of resources, and if the government expenditures are utilized in the excess amount, the excessive capital expenditures become unproductive at the margin.

Nurudeen & Usman (2010) empirically determined the relationship between government expenditure and economic growth in Nigeria and developed their model based on Keynesian and endogenous growth model and they found that total capital expenditure, total recurrent expenditures, and government expenditure on education have negative effect on economic growth. On the contrary, rising government expenditure on transport and communication results to an increase in economic growth. Using the same endogenous growth model Hsieh & Lai (1994) found the relationship between government expenditure and economic growth

in G-7 countries, namely Canada, France, Germany, Italy, Japan, UK, and USA. Their empirical result suggested that the relationship between government spending and growth can vary significantly across time. They conclude that public spending contributed at best a small proportion to the economic growth.

Wahab (2011) studied the effects of aggregate and disaggregate government spending on economic growth by using a worldwide sample of 97 developing and developed countries for the period 1960–2004. For the disaggregate government spending estimation, he used data from 1980 to 2000 for 32 countries. By using symmetric and asymmetric model specifications, they found that aggregate government spending has positive output growth effects particularly in periods of its below-trend growth. Furthermore, he found that government consumption spending has no significant output growth effects, but government investment spending has positive output growth effects particularly when its growth falls below its trend-growth; this favorable effect turns negative when government investment spending growth exceeds its trend-growth.

In another study, Butkiewicz & Yanikkaya (2011) found a conflicting result that indicated that total expenditures have negative growth effects, but consumption expenditures have a negative growth effect in developing nations. Moreover, they argue that due to the ineffective governments in developing nations that discourage private investment, thus public investment become the substitute for private investment. They suggest that developing nations should limit their governments' consumption spending and invest in infrastructure to stimulate growth. Wu et al. (2010) in their empirical study strongly supported both Wagner's law and indicated that government spending is effective to economic growth regardless of the size of the government.

Tang (2001) applied Johansen's multivariate co-integration tests on Malaysian data and found no co-integration between national income and government expenditure. However, a short-run causality from national income to government expenditure was observed, supporting the Wagner's law during the study period of 1960-1998. Tang (2009) in another study stated that the government spending on education and defense are co-integrated with the national income, respectively, while it is not the case for government spending on health. A uni-directional causality pattern is identified from national income to the government spending on education, defense, and health. In literatures, it is concluded that the effect of government spending on economic growth can be positive or negative that is it either support the Keynesian hypothesis or the Wagner's law.

In case of Pakistan, Ashghar and Zahra (2012) found that major advantage of public spending on primary and secondary education is for lower income group helped them to get out of poverty trap by providing

through basic education to acquire the necessary skills which ultimately helps them to enter into the workforce. In another study Asghar et al. (2011) found positive impact of public expenditure in social sectors on economic development, whereas public expenditure also creates positive impact on human resources and economic development. For the promotion of education, it is essential that sufficient funds be allocated towards the sector because without this education for all goals cannot be achieved (Hussain et al. 2003). Aurangzeb (2003) found positive relation among GDP and health expenditure in both short run and long run and endorsed to facilitate lower income groups. Akram and Khan (2007) identified inequalities in resource allocation and service provision in public health spending particularly rural areas for government provision of health facilities. Asghar et al. (2012) suggested that public expenditures on health and education in rural areas can reduce poverty reduction. Zeeshan and Ahmed (2014) also evaluated the positive link among health care spending and economic growth. Asghar et al. (2012) also found that government expenditure on infrastructure, rural development and social safety net provides employment opportunities for unskilled workers in rural areas which ultimately reduces the inequality among rural and urban areas.

3. Data and Econometric Methodology

This study tried to find out the role of government in the welfare of the society. For this purpose, paper used per capita income and employment level of the economy as the proxy variables of the welfare. Annual data is used to check the impact of government sectors expenditures on welfare when per capita income is taken as proxy variable of welfare. Independent variables are expenditures on health, education, subsidy, economic services, law and order. All variables are in log form. This is first model. Quarterly data of employment, government expenditures on health, education, subsidy, economic services, law and order, private investment and trade deficit are used. This is second model. All data sets are taken from WDI, IFS, various issues of Economic Survey of Pakistan and Handbook of Statistics on Pakistan Economy 2005.

Model 1.

$$PC_t = \alpha_1 + \alpha_2 Health_t + \alpha_3 Edu_t + \alpha_4 LawOrder_t + \alpha_5 Eco Ser_t + \alpha_6 Subsidy_t + \varepsilon_t \quad (1)$$

Model 2

$$Emp_t = \beta_1 + \beta_2 Edu_t + \beta_3 Health_t + \beta_4 LawOrder_t + \beta_5 PI_t + \beta_6 TB_t + \varepsilon_t \quad (2)$$

Where:

PC = per Capita Income

Edu = Government expenditure on education

Health = Government expenditure on health
 Subsidy = Government spending as subsidy
 LawOrder = government spending on law order
 Emp = employment rate
 PI = private investment
 TB = current account deficit.
 ϵ_t = error term

For the assessment of these relationship and their direction of causation of variables autoregressive distributed lag (ARDL) framework is adopted. Pesaran (1995, 1996, 1997) and Pesaran and Shin (1995) developed ARDL approach, in ARDL model there is no need to involve pre-testing variables and test is possible on the existing level of variables.

ARDL approach to co-integration includes the conditional error correction version of the ARDL model:

$$\Delta \ln PC_t = \alpha_0 + \sum_{i=1}^p \kappa_i \Delta \ln PC_{t-i} + \sum_{i=0}^p \omega_i \Delta \ln Health_{t-i} + \sum_{i=1}^p \iota_i \Delta \ln Edu_{t-i} + \sum_{i=1}^p \psi_i \Delta \ln LO_{t-i} + \sum_{i=1}^p \nu_i \Delta \ln Eco Ser_{t-i} + \sum_{i=1}^p \tau_i \Delta \ln Subsidy_{t-i} + \zeta_1 \ln PC_{t-1} + \zeta_2 \ln Health_{t-1} + \zeta_3 \ln Edu_{t-1} + \zeta_4 \ln LO_{t-1} + \zeta_5 \ln Eco Ser_{t-1} + \zeta_6 \ln Subsidy_{t-1} + \xi_t \quad (3)$$

Where the Δ is the first difference and optimal lag length represented by p . The Bound Test is used to test the existence of long run relationship. F-statistics test value is greater than critical value bounds, it concludes that there is long run association between variables irrespective of their order of integration.

After the evidence of long run relationship the following model is estimated

$$\ln PC_t = \alpha_0 + \sum_{i=1}^p \kappa_{1i} \ln PC_{t-i} + \sum_{i=0}^p \omega_{1i} \Delta \ln Health_{t-i} + \sum_{i=1}^p \iota_{1i} \ln Edu_{t-i} + \sum_{i=1}^p \psi_{1i} \ln LO_{t-i} + \sum_{i=1}^p \nu_{1i} \ln Eco Ser_{t-i} + \sum_{i=1}^p \tau_{1i} \ln Subsidy_{t-i} + \nu_t \quad (4)$$

The ARDL specification for short run association determine by error correction model on the following form:

$$\Delta \ln PC_t = \alpha_0 + \sum_{i=1}^p \kappa_{2i} \Delta \ln PC_{t-i} + \sum_{i=0}^p \omega_{2i} \Delta \ln Health_{t-i} + \sum_{i=1}^p \iota_{2i} \Delta \ln Edu_{t-i} + \sum_{i=1}^p \psi_{2i} \Delta \ln LO_{t-i} + \sum_{i=1}^p \nu_{2i} \Delta \ln Eco Ser_{t-i} + \sum_{i=1}^p \tau_{2i} \Delta \ln Subsidy_{t-i} + \varpi ECM_{t-1} + \epsilon_t \quad (5)$$

Where ECM_{t-1} is the error correction term, define as:

$$\varpi ECM_{t-1} = \ln PC_t - \alpha_0 - \sum_{i=1}^p \kappa_{2i} \Delta \ln PC_{t-i} - \sum_{i=0}^p \omega_{2i} \Delta \ln Health_{t-i} - \sum_{i=1}^p \iota_{2i} \Delta \ln Edu_{t-i} - \sum_{i=1}^p \psi_{2i} \Delta \ln LO_{t-i} - \sum_{i=1}^p \nu_{2i} \Delta \ln Eco Ser_{t-i} - \sum_{i=1}^p \tau_{2i} \Delta \ln Subsidy_{t-i} \quad (6)$$

All coefficients of short run equation are representing the short run convergence of the model from towards long run equilibrium. ϖ is the speed of adjustment.

4. Estimation Discussion of Results

4.1. Descriptive Statistics

The results of descriptive statistics are reported in the Table 1 which explains the basic features of the data distinguished from inferential statistics. According to the results, mean values of economic services and subsidy are greater than median and remaining variables' mean values are lower than but very closer to their median values. Only per capita and education coefficients of skewness are negative, means that log tail of the curve is towards left. For the remaining variables health, economic service, subsidy, law and order are positive and their curves' log tails is towards right. All coefficients values of Kurtosis are less than 3 so they have more flat topped (Platykurtic) only health coefficient value is greater than 3 that is why it has less flat topped, (Leptokurtic). According to the JB test statistics data set is not normally distributed.

Table 1: Descriptive Statistics

	PC	Health	Education	Eco Ser	Law Order	Subsidy
Mean	9.62	2.55	3.70	1.35	1.49	2.59
Median	9.66	2.79	3.89	0.86	1.71	1.86
Std.Dev	1.55	2.13	1.97	1.37	1.26	1.74
Skewness	-.01	0.29	-0.13	0.58	0.13	0.53
Kurtosis	1.9	3.35	1.96	2.04	2.25	1.77
JB	2.36	0.92	2.27	4.45	1.24	5.16

4.2. Stationarity Test

Unit root test is a prerequisites of a time series. Results are shown in the Table 2 where only economic services expenditure become stationary at level and remaining other variables become stationary at first difference. It means variables have different level of integration.

Table 2: ADF Unit Root Test Results

Variables	LPC	Health	Educ	Eco Ser	Law order	Subsidy
-----------	-----	--------	------	---------	-----------	---------

Order of Integration	I(1)	I(1)	I(1)	I(0)	I(1)	I(1)
----------------------	------	------	------	------	------	------

After applying Dickey Fuller ADF test and its results, ARDL approach is used. There are few steps of the application of ARDL test. The first step is model selection on the basis lag criterion AIC and SC. 4 automatic lag model is selected as there AIC and SC values were the lowest.

4.3. Autocorrelation

Second step is to check either series are serially correlated or not. Breusch-Godfrey Serial Correlation LM test is applied.

H_0 = There is no serial correlation; H_1 = There is serial correlation

Table 3: Serial Correlation LM Test

F-stats	0.88	Prob. F	0.43
Obs. R^2	4.81	Prob. χ^2	0.09

According to the F-statistic and Chi-Square probabilities, they are more than 5% means that null hypothesis is not rejected here rather accepted here and there is no serial correlation. In the next step stability diagnostic test was conducted and according to the CUSUM and CUSUM Square figures all values lie within the red lines or under 5% level of significance. Which proof the stability of the model.

Figure 1.

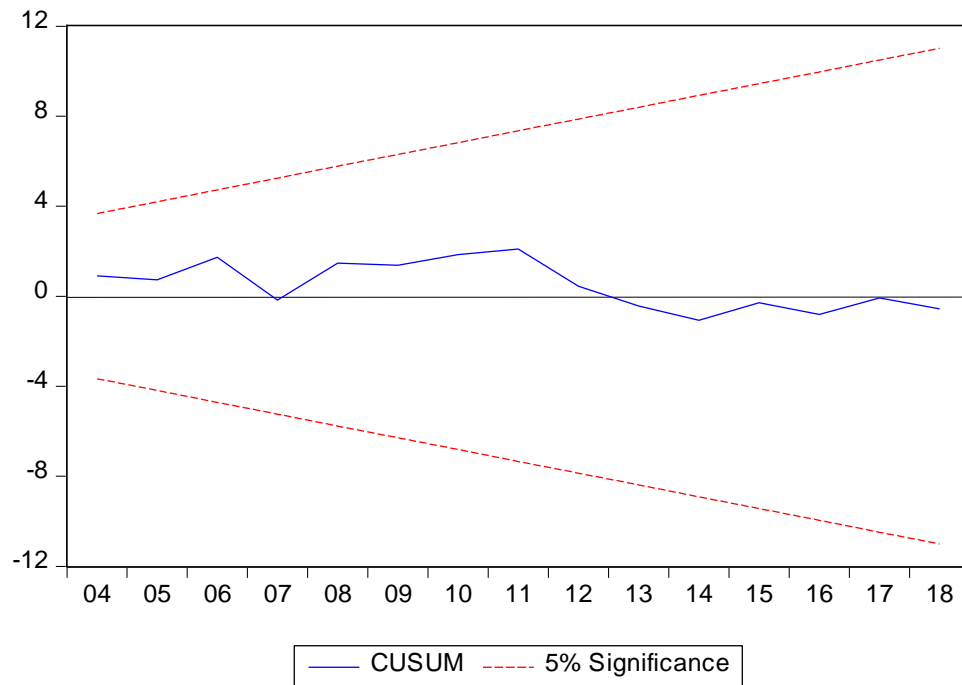
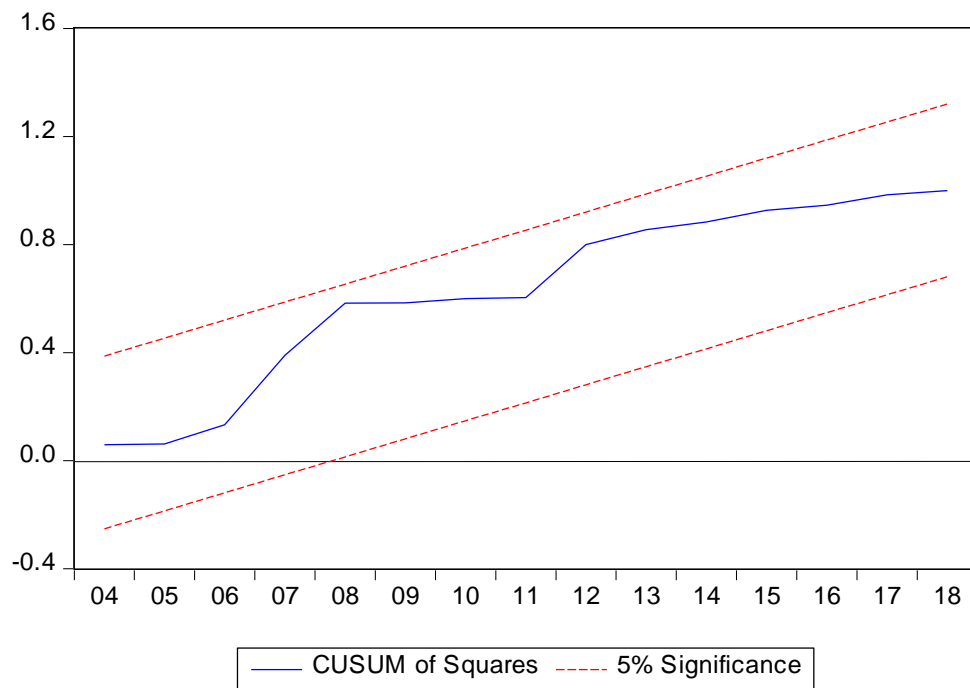


Figure 2



4.5. Bound Testing

For long run relationship this study applied Bound test for coefficient diagnose. According to the null hypothesis: no long run relationship exists. **F-Statistics = 4.46**, which is greater than upper bound critical value = 3.38 at 5% significant level. Null hypothesis is rejected here which support that there is a long run relationship.

Table 4: Bound Test

F-Statistics	4.46
Critical value 5%	3.38

Co-integration and Long run form. Co-integration coefficient value is – 0.34 and probability = 0.00. For long run relationship co-integrating value must be negative and probability should be less than 5%. According to the result there is a long run association of all variables towards Per Capita income. Long run co-integration is given below:

$$PC = 7.64^* - 0.133^* \text{ Health} + 0.62^* \text{ Edu.} - 0.15 \text{ Eco. Ser.} + 0.16 \text{ Law Order} + 0.28^* \text{ Subsidy}$$

Table 5: Co-integration Form

Variables	Coefficient	Variables	Coefficient
PC(-1)	-0.177 C1		
Health	-0.02* C2	Law Order	0.03 C14
Health (-1)	0.016*C3	L&O (-1)	-0.1* C15
Health (-2)	-0.004 C4	L&O(-2)	0.44* C16
Health (-3)	-0.01* C5	L&O(-3)	0.38* C17
Edu	0.05 C6	Subsidy	0.064* C18
Edu (-1)	-0.35* C7	Subsid(-1)	-0.13* C19
Edu (-2)	-0.09 C8	Subsid(-2)	-0.04* C20
Edu (-3)	-0.36* C9		
Eco Ser.	0.01 C10		
Eco Ser (-1)	0.046*C11		
Eco Ser (-2)	0.05* C12		
Eco Ser (-3)	0.045*C13		

Table 6: Wald Test

Null Hypothesis	Test Stats	Value	Prob.
C(2)=C(3)=C(4)=C(5)=0	F-statistic	3.6	0.03
	Chi-square	14.4	0.00
C(6)=C(7)=C(8)=C(9)=0	F-statistic	5.6	0.07
	Chi-square	10.3	0.03

C(10)=C(11)=C(12)=C(13)=0	F-statistic	4.42	0.01
	Chi-square	17.7	0.00
C(14)=C(15)=C(16)=C(17)=0	F-statistic	2.14	0.12
	Chi-square	8.58	0.07
C(18)=C(19)=C(20)=0	F-statistic	4.16	0.02
	Chi-square	12.5	0.00

Wald test result are presented in the Table where this study tested that whether the independent variables and their lags jointly associated with the dependent variable or not in the long run. According to the test results only law and order variable and its lags do not associate with per capita income in the long run. Null hypothesis is accepted here as all coefficients of law and order variables are jointly zero. On the other hand, remaining variables such as health, education, economic service and subsidy and their lags have jointly associated with the per capita income in the long run.

For checking short run relationship of this model, study applied error correction model. The value of error correction term (ECT) is -0.14^* . It means that the speed of adjustment of model from short run to long run equilibrium is 14%. In sum, this system is getting adjusted towards long run equilibrium at the speed of 14 %.

Model 2

$$Emp_t = \beta_1 + \beta_2 Edu_t + \beta_3 Health_t + \beta_4 LawOrder_t + \beta_5 PI_t + \beta_6 TB_t + \varepsilon_t$$

Unit root test is a prerequisites of a time series. Results are shown in the Table 2 where only employment become stationary at level and remaining other variables such as government expenditure on health, education, law and order, private investment and trade deficit become stationary at first difference. It means variables have different level of integration.

Table 7: ADF Unit Root Test Results

Variables	Employ	Health	Educ	Law order	PI	TB
Order of Integration	I(0)	I(1)	I(1)	I(1)	I(1)	I(1)

After applying Dickey Fuller ADF test and its results, ARDL test approach suitable to use. Following the procedure of ARDL method, in the first step model selection on the basis of lag criterion AIC and SC. 4 fixed lag model is selected as there AIC and SC values were the lowest. Second step is to check either series are serially correlated or not. Breusch-Godfrey Serial Correlation LM test is applied.

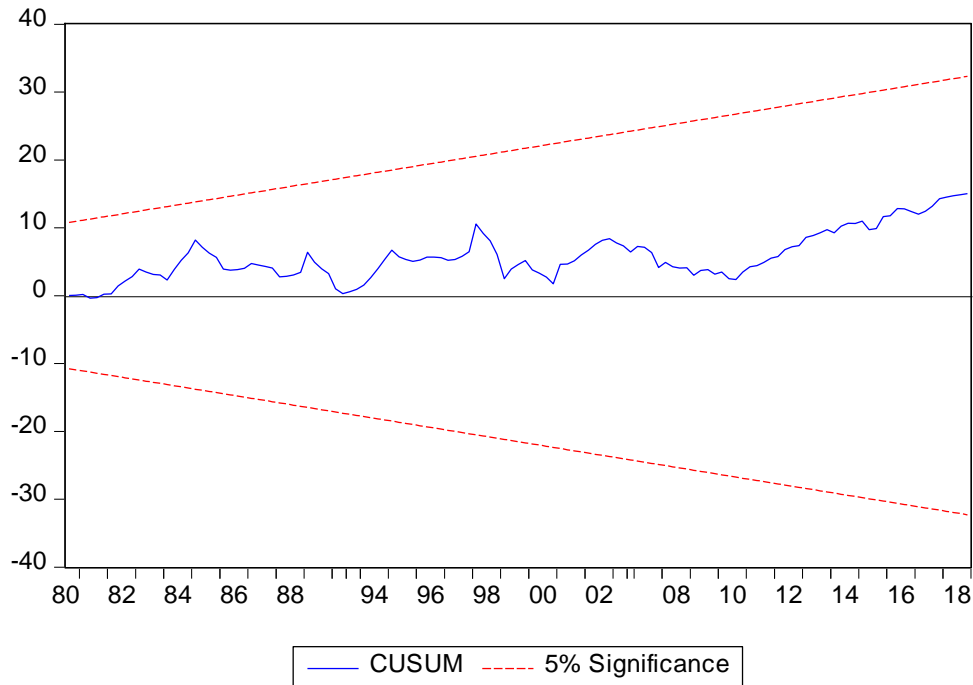
H_0 = There is no serial correlation; H_1 = There is serial correlation

Table 8: Serial Correlation LM Test

F-stats	0.38	Prob. F	0.68
Obs. R ²	0.95	Prob. χ^2	0.62

According to the F-statistic and Chi-Square probabilities, they are 68% and 62% respectively, means that null hypothesis is not rejected here rather accepted here and there is no serial correlation. In the next step stability diagnostic test was conducted and according to the CUSUM figure all values lie within the red lines or under 5% level of significance. Which proof the stability of the model.

Figure 3.



Bound Testing

For long run relationship this study applied Bound test for coefficient diagnose. According to the null hypothesis: no long run relationship exists. **F-Statistics = 7.85**, which is greater than upper bound critical value = 3.38 at 5% significant level. Null hypothesis is rejected here which support that there is a long run relationship.

Table 9: Bound Test

F-Statistics	7.85
Critical value 5%	3.38

Co-integration and Long run form. Co-integration coefficient value is – 0.06 and probability = 0.00. For long run relationship co-integrating value must be negative and probability should be less than 5%. According to the result there is a long run association of all variables towards employment. Long run co-integrating equation is given below:

$$\text{EMPLOY} = 4.16* -0.08*\text{Health} + 0.22*\text{Education} -0.03\text{law} -0.1278 \text{PI} -0.01 \text{TB}$$

There is health expenditure of government has negative but significant impact on employment level in Pakistan. Whereas expenditure on education has positive and significant impact on employment. Although the remaining variables such as government's expenditure on law and order, private investment and trade deficit have negative effect on employment but all are insignificant.

Table 10: Wald Test

Variables	Null Hypothesis	Test Stats	Value	Prob.
Employment	C(1)=C(2)=C(3)=0	F-statistic Chi-square	522 1568	0.00 0.00
Health	C(4)=C(5)=C(6)=C(7)=0	F-statistic Chi-square	5.6 10.3	0.04 0.03
Education	C(8)=C(9)=C(10)=C(11)= 0	F-statistic Chi-square	2.6 10.5	0.03 0.03
Law order	C(12)=C(13)=C(14)=C(15)= 0	F-statistic Chi-square	0.63 2.53	0.64 0.64
Private Investment	C(16)=C(17)=C(18)=C(19)=0	F-statistic Chi-square	0.68 2.7	0.60 0.60
Trade Deficit	C(20)=C(21)=C22)=C(23)=0	F-statistic	1.88	0.12

		Chi-square	7.5	0.11
--	--	------------	-----	------

Wald test result are presented in the Table 10 where this study tested that whether the independent variables and their lags jointly associated with the dependent variable or not in the long run. According to the test results only independent variables health, education, their lags and dependent variable lags are jointly affect the employment level in the long run, whereas expenditure on law and order, private investment and trade deficits and their lags do not associated with employment in the long run. Null hypothesis is accepted here as all coefficients of these variables are jointly zero. On the other hand, remaining variables such as health, education, and their lags have jointly associated with the employment in the long run.

Error Correction Model

For checking short run relationship of this model, study applied error correction model. The value of error correction term (ECT) is -0.035^* and significant. It means that the speed of adjustment of model from short run to long run equilibrium is 3.5 % during one quarter. In sum, this system is getting adjusted towards long run equilibrium at the speed of 3.5 %. All variables have long run as well as short run relationship.

Table 11: Wald Test

	Null Hypothesis	χ^2 Value	Prob.
Employ	$C(2)=C(3)=C(4)=C(5)=0$	139	0.00
Health	$C(6)=C(7)=C(8)=C(9)=0$	9.77	0.04
Education	$C(10)=C(11)=$ $C(12)=C(13)=0$	8.8	0.06
Law Order	$C(14)=C(15)=C(16)=C(17)=0$	0.3	0.98
Pvt. Inv.	$C(18)=C(19)=C(20)=C(21)=0$	2.08	0.72
Trade B.	$C(22)=C(23)=C(24)=C(25)=0$	2.07	0.72

Wald test results are presented in the Table 11. According to the results null hypothesis only

rejected in the case of employment and health, there is short run relationship of these variables to the dependent variable. However, other variables and their lags do not have joint association with the dependent variables.

5. Summary and Concluding Remarks

Government Spending in any economy affects welfare, the distribution of wealth, the magnitude and the allocation of productive capacity. The effect of government expenditures on the aggregate economy has got immense importance in the literature of economics especially for the developing countries. This research paper attempts to examine the impact and significance of government spending, private investment and trade deficit on the welfare of the society of Pakistan over the period 1972 to 2017, within an ARDL framework. This study also focuses on disaggregated level of government expenditures such as the social sector (health and education), economic services, subsidies, maintenance of law and order in the country. The research questions addressed in this study are, do fiscal measures improve the welfare of the society or do they lead to misallocate public resources and harm the economic welfare? This study also examines the impact of varying composition of government outlays shaping overtime, and determines the short-run as well as long-run effect on major macroeconomic variables. The empirical results indicate that all components of government spending have significant long-run association with individual's welfare variable namely per capita income, except law and order spending which has negative effect but statistically insignificant. In case of employment level, the government spending on education has significant positive long-run impact on employment. However, spending on health has significant negative impact on employment. Other components of government spending have no significant support for employment. This study may provide some guidelines to priorities towards allocation of development and non-development budgets to enhance the welfare of individuals in Pakistan. In last we mention the limitations of this study as the data series of income inequality and level of poverty are not readily available which may be a better indicator of individual's welfare as compared to per capita income. Future study may use these for comparison and better results.

References

- Adam, C.S. and Bevan, D.L. (2005) "Fiscal Deficits and Growth in Developing Countries", *Journal of Public Economics*, 89, 571-597.
- Ahsan, Syed M., Andy C. Kwan, and Balbir S. Sahni (1996), "Cointegration and Wagner's Hypothesis: Time-series Evidence for Canada," *Applied Economics* 28: 1055-58.
- Alexiou, C. (2009), "Government Spending and Economic Growth: Econometric Evidence from the South Eastern Europe (SEE)", *Journal of Economic and Social Research* 11(1) 2009, 1-16
- Alshahrani, S. A. Ali J. Alsadiq (2014), "Economic Growth and Government Spending in Saudi Arabia: An Empirical Investigation", *IMF Working Paper WP/14/3*
- Aschauer, D. A. (1989) "Is Public Expenditure Productive?" *Journal of Monetary Economics*, 23, 177-200.
- Asghar, N, Awan, A and Rehman, H 2012, Government Spending, Economic Growth and Rural Poverty in Pakistan, *Pakistan Journal of Social Sciences*, vol. 32, No. 2, pp. 469-483
- Asghar, N, Azim, P and Rehman, H 2011, Impact of Government Spending in Social Sectors on Economic Growth: A Case Study of Pakistan, *Journal of Business & Economics*, vol. 3, No.2, pp. 214-234
- Ashghar, Z and Zahra, M 2012, A Benefit Incidence Analysis of Public Spending on Education in Pakistan Using PSLM Data, *The Lahore Journal of Economics*, 17:2, pp. 111-136
- Attari, M. I. J., & Javed, A. Y. (2013). Inflation, Economic Growth and Government Expenditure of Pakistan: 1980-2010. *Procedia Economics and Finance*, 5, 58–67.
- Aurangzeb 2003, Relation between Health Expenditure and GDP in an Augmented Solow Growth Model for Pakistan: An Application of Co-integration and Error-Correction Modeling, *The Lahore Journal of Economics*, vol. 8, No.2
- Bénétrix, A. S. and Lane, P. R. (2009a) The impact of fiscal shocks on the Irish economy, *The Economic and Social Review*, 40, 407–34.
- Blanchard, O. and Perotti, R. (2002), "An empirical characterization of the dynamic effects of changes in government spending and taxes on output, *The Quarterly Journal of Economics*, 117.
- Bose, N., Haque, M. E. and Osborn, D.R. (2007), "Public Expenditure and Economic Growth: A Disaggregated Analysis for Developing Countries", *The Manchester School*, 75(5) 533–556.
- Burnside, A. C., Eichenbaum, M. and Fisher, J. D. M. (2004) Fiscal shocks and their consequences, *Journal of Economic Theory*, 115, 89–117.

- Cebi, C. and Culha, A.A. 2014. The Effects of Government Spending Shocks on the Real Exchange Rate and Trade Balance in Turkey. *Applied Economics*. 46(26) 3151-3162.
- Corsetti, G. and Müller, G. J. (2006) Twin deficits: squaring theory, evidence and common sense, *Economic Policy*, 21, 597–638.
- Ghali, K. H. (1998), “Government Size and Economic Growth: Evidence from a Multivariate Cointegration Analysis”, *Applied Economics*, 31, 975-87.
- Ghura, D. (1995), “Macro policies, external forces, and economic growth in Sub-Saharan Africa”, *Economic Development and Cultural Change*, 43(4), 759-78.
- Guseh, J. S. (1997). Government Size and Economic Growth in Developing Countries: A Political- Economy Framework. *Journal of Macroeconomics*, 19(1), 175–192.
- Hassan, M. K., Waheeduzzaman, M., & Rahman, A. (2003). Defense Expenditure and Economic Growth in the SAARC Countries. *The Journal of Social, Political, and Economic Studies*.
- Hsieh, E., & Lai, K. S. (1994). Government Spending and Economic Growth: The G-7 Experience. *Journal of Applied Economics*, 26, 535– 542.
- Knoop, T. A. (1999), “Growth, welfare, and the size of government”, *Journal of Economic Inquiry*, 37(1), 103- 119.
- Kim, S. and Roubini, N. (2008) Twin deficit or twin divergence? Fiscal policy, current account and real exchange rate in the U.S., *Journal of International Economics*, 74,
- Komain Jiranyakul, (2007), “The Relation between Government Expenditures and Economic Growth in Thailand”, Working Paper, School of Development Economics National Institute of Development Administration Bangkok, 10240, Thailand
- Loizides, J. and Vamvoukas, G. (2005) Government Expenditure and Economic Growth: Evidence from Trivariate Causality Testing, *Journal of Applied Economics* 8(1), 125-152.
- Mountford, A. and Uhlig, H. (2009) What are the effects of fiscal policy shocks? *Journal of Applied Econometrics*, 24, 960–92. doi:10.1002/jae.1079.
- Musgrave, Richard A., and Peggy B. Musgrave (1980), *Public Finance in Theory and Practice*, New York, McGraw Hill.
- Nurudeen, A., & Usman, A. (2010). Government Expenditure and Economic Growth in Nigeria, 1970-2008: A Disaggregated Analysis. *Business and Economics Journal*, 1–11.
- RAM, R. (1986), “Government Size and Economic Growth: A New Framework and Some Evidence from Cross-Section and Time-Series Data”, *American Economic Review*, 7(1), 191-203.

Tang, T. C. (2009). Wagner's Law versus Keynesian Hypothesis in Malaysia: An Impressionistic View. Discussion Paper 21/09, Department of Economics, Monash University, 1–10.

Tang, T. C. (2001). Government Expenditure and National Income in Malaysia. *Journal Analisis*, 8, 37–51.

Wahab, M. (2011). Asymmetric Output Growth Effects of Government Spending: Cross-Sectional and Panel Data Evidence. *International Review of Economics & Finance*, 20(4), 574–590.

Wu, S.-Y., Tang, J.-H., & Lin, E. S. (2010). The Impact of Government Expenditure on Economic Growth: How Sensitive to the Level of Development? *Journal of Policy Modeling*, 32(6), 804–817. <http://doi.org/10.1016/j.jpolmod.2010.05.011>

Yasin, M. (2000). Public Spending and Economic Growth: Empirical Investigation of Sub Saharan Africa. *Southwestern Economic Review*, 4(1), 59–68.