

DIGITALES ARCHIV

ZBW – Leibniz-Informationszentrum Wirtschaft
ZBW – Leibniz Information Centre for Economics

Ahmed, Syed Shujaat; Javed, Asif

Article

The effect of public sector development expenditures and investment on economic growth : evidence from Pakistan

Provided in Cooperation with:

KSP Journals, Istanbul

Reference: Ahmed, Syed Shujaat/Javed, Asif (2017). The effect of public sector development expenditures and investment on economic growth : evidence from Pakistan. In: Journal of economics and political economy 4 (2), S. 203 - 214.

This Version is available at:

<http://hdl.handle.net/11159/889>

Kontakt/Contact

ZBW – Leibniz-Informationszentrum Wirtschaft/Leibniz Information Centre for Economics
Düsternbrooker Weg 120
24105 Kiel (Germany)
E-Mail: [rights\[at\]zbw.eu](mailto:rights[at]zbw.eu)
<https://www.zbw.eu/econis-archiv/>

Standard-Nutzungsbedingungen:

Dieses Dokument darf zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden. Sie dürfen dieses Dokument nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, aufführen, vertreiben oder anderweitig nutzen. Sofern für das Dokument eine Open-Content-Lizenz verwendet wurde, so gelten abweichend von diesen Nutzungsbedingungen die in der Lizenz gewährten Nutzungsrechte.

<https://zbw.eu/econis-archiv/termsfuse>

Terms of use:

This document may be saved and copied for your personal and scholarly purposes. You are not to copy it for public or commercial purposes, to exhibit the document in public, to perform, distribute or otherwise use the document in public. If the document is made available under a Creative Commons Licence you may exercise further usage rights as specified in the licence.

Journal of
Economics and Political Economy

www.kspjournals.org

Volume 4

June 2017

Issue 2

**The Effect of Public Sector Development Expenditures
and Investment on Economic Growth: Evidence from
Pakistan**

By Syed Shujaat AHMED ^{a†}
& Asif JAVED ^b

Abstract. It is an established fact that there is strong association between investment and economic growth of a country but no such direct consensus had been developed on the type of investment. i.e. what are the different sectors in which investment has led to long term impact and did contributed to the growth. The current study in this regard will focus on investigating the relationship of Public Sector Development Programme (PSDP), Foreign Direct Investment (FDI) and Private Investment with the growth. The study will use data from 1980-81 to 2015-16 in this regard and employ Johansen cointegration to investigate the long run relationship. It is found that with foreign direct investment, health expenditure and transport and communication expenditure has negative relationship in the long run. Where as private investment, education expenditure and expenditure on housing has positive relationship with growth. Based on these findings recommendations were totally investment centric with primary focus on reduction in taxes and other barriers to bring in more investment in long run. Beside taxation, recommendations were made on administrative balance both in tax system and public sectors which were made part of provincial domain after 18th amendment.

Keywords. Public Sector Development Programme, Foreign Direct Investment, Private Investment.

JEL. D92, O40, H51, H52.

1. Introduction

Fiscal policy can be regarded as fundamental instrument to establish the economic growth in the country. Role of government is important in order to provide the basic necessities to public. Priorities of government can be seen from the spending on different sectors. Health and education sector are the fundamental elements through which welfare of the public can be determined, as more spending on health and education sector develops human resource and paved way for economic development (Asgar *et al.*, 2011). Human Resource Development (HRD) in Pakistan is a far off dream as country lags behind other South Asian countries in terms of HRD (Wahab *et al.*, 2013). Hakro & Akram (2007) proclaim that spending on health and education sector in Pakistan is progressive in nature. The spending on human capital can bring positive results and also contribute towards economic development in Pakistan (Asgar *et al.*, 2011). After 18th amendment, powers have been transferred to provincial authorities and

^{a†} Pakistan Institute of Development Economics, Sustainable Development Policy Institute, Islamabad, Pakistan.

☎ . 051-2278134

✉ . shujaat@sdpi.org

^b Sustainable Development Policy Institute and MPhil Scholar, Pakistan Institute of Development Economics.

now they are responsible to accommodate the public accordingly. However, the capacity building of provincial governments is not done prior to this, due to which they have failed to produce effective results so far. Iqbal *et al.* (2013) also presents the similar views that fiscal decentralization fails to bring positive outcomes due to low institutional capacity at provincial level.

The current study uses the data for time period of 1980-81 to 205-16 and applies the Johansen cointegration technique for analysis of long term relation among public expenditure and economic growth in Pakistan. The variables used in the study are health expenditure, housing expenditure, transport and communication expenditure, education expenditure and expenditure on energy. Apart from PSDP, foreign direct investment (FDI), gross domestic product (GDP) and private investment are also taken into consideration. It is examined that infrastructure development has been the focus of government as it lies within the jurisdiction of central government, whereas the social sector including health and education sector show dismal performance because the provincial authorities are responsible for the policies and implementation strategies.

Following table depicts the sector-wise allocation of Federal PSDP;

Table 1. Sector-Wise Allocation in Federal PSDP 2015-16

Sector	Rs. Billion	Share (%)
Infrastructure	407.9	58.3
Social Sector	60.8	8.7
Science and information technology	6.7	1.0
Governance	6.5	0.9
Special areas (AJK, FATA, GB)	38.7	5.5
Special programs	168	24.0
Production sector	4.2	0.6
ERRA	7	1
Total size (Federal)	700	100

Source: Annual Plan 2015-16

The primary focus of government expenditure remains the infrastructure sector which is allocated more than 50% share of the PSDP. However, if we look at social sector, only 8.7% allotment is being made in this sector. This shows that government is not spending enough on health and education sector. This is opposite of what a government should do, as expenditure on health can increase the GDP growth in Pakistan (Aurangzeb, 2003).

The next section presents the literature review on link between public expenditures and social sector. In the next part, an overview of provincial expenditure is presented to show what the provincial governments are doing for development of social sector. Section three is based on methodology of the study and section four presents the results and discussion. Last section is based on conclusion and policy recommendations.

2. Literature Review

Defense expenditure by government appears to be detrimental and is a major part of budgetary expenditure in the form of non-development. Kalim & Hassan (2014) pointed out that defense expenditures increased poverty in Pakistan. They proved their claim by taking into the account foreign direct investment (FDI), development expenditure, inflation, industrial sector and social sector. Similar findings were observed by Shahbaz *et al.* (2013) and Hussain *et al.* (2008) where they found that defense expenditures had been major factor in reducing growth over the time.

Ali (2008) stressed that non development expenditures decrease the employment prospects and increase poverty in any country. Ashghar & Zahra (2012) observed that major advantage of public spending on primary and secondary education is for lower income group both at national as well as provincial level. Hence, it helped to get the poor people out of poverty trap by providing them basic education which ultimately helps to enter into the workforce

by having the necessary skills to find suitable jobs. 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). Public spending on education in Pakistan and Bangladesh is among the lowest in the region (SDPI, 2013).

Health sector is equally important as education sector and government must devise fundamental efforts to provide basic health facilities to each and every citizen of the country. Aurangzeb (2003) found positive relation among GDP and health expenditure in both short run and long run. He recommended that more facilities should be there to facilitate lower income groups. Akram & Khan (2007) also pointed out the prevalence of inequalities in resource allocation and service provision in public health spending. Rural areas are being neglected by the government for provision of health facilities. Asghar *et al.* (2012) stressed that public expenditures on health and education in rural areas can provide basis for poverty reduction. Zeeshan & Ahmed (2014) also evaluated the positive link among health care spending and economic growth.

Employment prospects can only be developed by devising a significant strategy and funds allocation. Asghar *et al.* (2012) analyzed that higher expenditure on infrastructure, rural development and social safety net by government tends to develop employment prospects particularly for unskilled workers in rural areas. This must be the attention point for the government as it reduces the inequality among rural and urban areas and also provide job opportunities to rural people at their door step, thus minimizes the likelihood of internal migration.

If we look at South Asian level, Pakistan still lags behind other countries in the region in terms of human capital development. Wahab *et al.* (2013) evaluated that government fails to spend enough on HRD as compared to other South Asian countries. The need of the time is to develop vocational institutes and their syllabus according to existing needs of the economy. For the purpose federal and provincial governments should act together for effective monitoring and implementation of HRD programs. The study by RAFTAAR (2015) also pointed out similar views that Pakistan lags behind in developing efficient human capital.

Pasha *et al.* (2011) elucidated that budget allocations for PSDP have decreased actually. Excessive spending on securities, debt servicing, security and subsidies has produced a fiscal imbalance. After the 18th amendment, provinces are off the view that they are given additional responsibilities without allocating the enough resources to deal with it.

3. A View of Provincial Expenditures

Government of Sindh (2015) formulates Vision 2025 which aims to develop medium and long term provincial development plan. Sectoral plans prepare strategy for promoting education, health, energy, irrigation, communication and mass transit. Quality education for all children is focus of the government whereas government has also increased the development budget and non-development spending for health sector.

Government of Sindh (2012) prepares Sindh Health Sector Strategy 2012-2020 that comprises development of district health systems especially under developed districts. Competent human resource, improved sector-wise access to basic drugs by quality assurance is also part of the strategy. The policy aims to increase the investment in health sector with the collaboration of private sector.

Budget Strategy Paper of Government of KPK is keen to attain 90% NER and leaving no child out of school by 2018. Along with this, promotion of primary level education is also the focal point. Budget is allocated for up-gradation and presenting the basic facilities at schools by Parent-Teacher Council. Girls Community School and Early Child Care Education Program are also part of promoting education in the region. Strategic Development Partner Framework and

Journal of Economics and Political Economy

Integrated Development Strategy focused to decrease Infant Mortality and Maternal Mortality Rate. Apart from this, healthcare insurance for serious diseases, Mother and Child Health, Insulin for Life and Special Initiative for enhancing immunization is also included in the program.

Government of KPK (2010) is keen to improve the health standards in the region by provision of quality services. The Health Sector Strategy 2010-17 intends to provide health facilities especially to poor segment of the region. Comprehensive Development Strategy stresses to lessen the mortality rate which occurs because of common diseases. Enhanced human resource management, governance and accountability and regulation and quality assurance is also part of the strategy.

Government of Punjab (2015) prepared Punjab Growth Strategy 2018 which is focused on quality employment through development of human capital. The Government's Skills Strategy in this regard stresses upon providing quality training at affordable cost for youth. Urban development is another important aspect of growth strategy which aims to develop cities as growth engines. Government is providing basic facilities to schools, especially to schools of girls whereas School Education Department has also initiated Emergency Enrolment Campaign in 2014 for promoting education. Punjab Education Foundation with association of private sector is encouraging the education facilities for poor segment of society. Decreasing the infant and maternal mortality rates, provision of water, sanitation and hygiene services are major aspects of improving health standards in the province.

PILDAT (2012) pointed out that government of Punjab strategic initiatives for health sector in MTDF 2012-15 which comprises focus on preventive health care and achievement of MDGs. Establishing rural health centers and attention towards secondary and tertiary health care is also included in the program. Food and drug testing laboratories, and promotion of medical education are also key aspects of the strategic plan.

Government of Baluchistan (2013) initiated a Baluchistan Education Sector Plan which intends to provide education to out of school children through 'alternate learning path' programme. Infrastructure development of schools, up gradation of various primary schools to middle and middle schools to higher secondary will also be made. The plan aims to amend the under-graduate program into 4 year program.

4. Methodology

This current study is to find out the long run effect of public investments (PSDP) on economic growth. To find out such relationship there is need for analyses based on graphical approach and quantified techniques e.g. Johansen cointegration is used. For this complete set of analysis data is taken from the period of 1980-81 to 2015-16. Data in this regard is taken for Public Sector Development Programme (PSDP) in which different components are taken into consideration i.e. health expenditure, housing expenditure, transport and communication expenditure, education expenditure and expenditure on energy. Besides PSDP, other variables include foreign direct investment (FDI); gross domestic product (GDP) and. Data sources which were used in this regard include annual budget briefs of different periods from budgetary document of different years and World Development Indicators. To formulate an empirical model, economic function is constructed which is as follows and used by (Ebong *et al.*, 2016) which is $GDP = f(\text{Physical capital, Labor, Government capital expenditure})$. Further extending this function we construct it by segregating government expenditure into housing expenditure (he), health expenditure (hhe), education expenditure (edu), gross fixed capital formation (gfcf), foreign direct investment (fdi) and transport and communication expenditure (transcom).

$$GDP = f(\text{he, hhe, edu, gfcf, fdi, transcom}) \quad (1)$$

Journal of Economics and Political Economy

While looking at the education expenditure it can be seen that, there had been increase over the period with various heads which were included under education expenditure. First decline was observed post 2010 when 18th amendment was passed. 18th amendment resulted in the devolution of various ministries to provinces making them provincial subjects. Education being one of the key ministries devolved to provinces was also devolved and during the power sharing there was sudden decline in the budget. Beside this devolution shocks related to natural disaster were also cause of declining education expenditure. During current government period, commitment had been shown to increase the education expenditure to the certain level which they have tried in fiscal budgets presented.

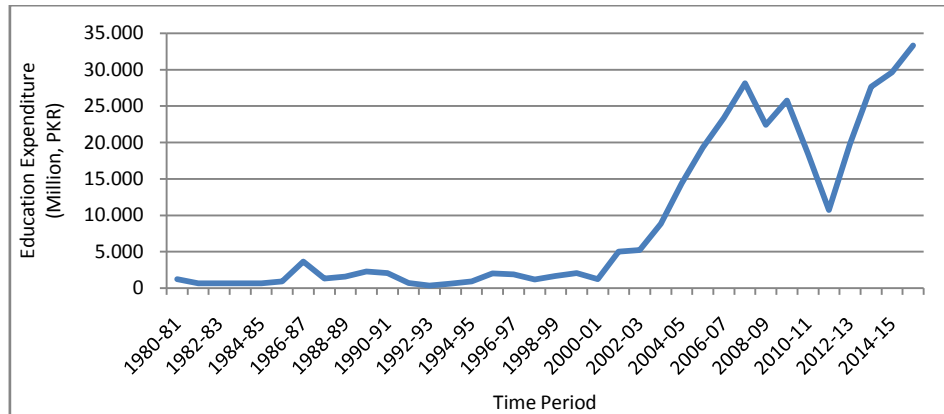


Figure 1. Education as Part of Public Sector Development Expenditure (Million, PKR)
Source: Annual Budget Briefs, Ministry of Finance

On the parallel focus of governments in Pakistan had been on infrastructure and in that most of the focus was there on National Highway authority, transport and communication department and ports and shipping. It can be seen from figure-2 given below that over the period there is increase in transport and communication expenditure. This increase can be credited to construction of road networks during 1990s' which include Motorways as key mean of communication, similarly post 2005 earth quake there was reconstruction of majority of the networks for communication and linking different areas to markets and access to main cities. The current expenditure increase can be attributed to various factors which include metro bus projects, motorway projects and various road and railway projects and it is also one of the key focuses of current government.

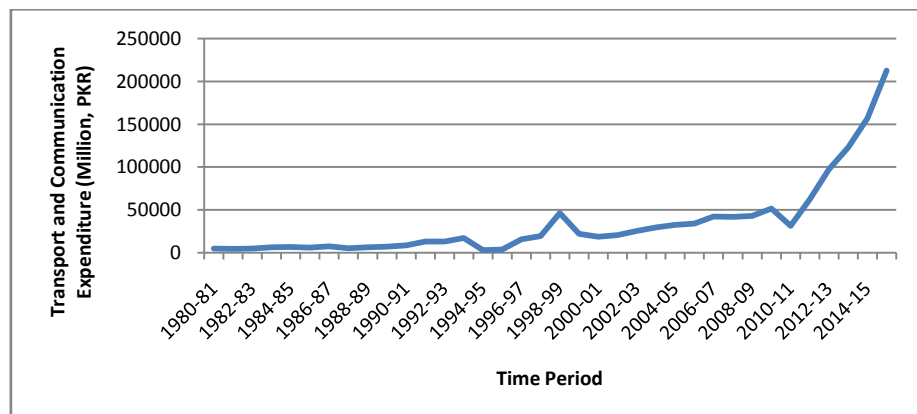


Figure 2. Transport and Communication Expenditure as Part of Public Sector Development Expenditure (Million, PKR)

Source: Annual Budget Briefs, Ministry of Finance

As can be seen from the health expenditure graph given below in figure-3, before 18th amendment where health ministry was another key ministry being given

to province with increasing share in budget over the period. Before devolution, when all expenditures were part of federation. Major heads for health expenditures included various health programmes under health being the key head; there was population welfare programme, health and nutrition. After 18th amendment most of these heads were transferred to provinces with new head developed under which special functions were kept under federation. National health, services coordination and regulation were the new head developed for special programmes which are still monitored by federation. Apart from these programmes current government came up with special programmes and tried to increase the health budget at federal level.

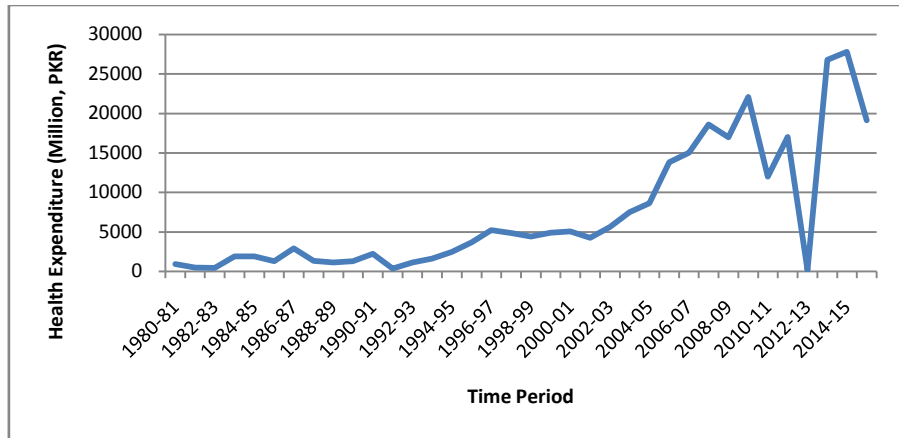


Figure 3. Health Expenditure as Part of Public Sector Development Programme (Million, PKR)

Source: Annual Budget Briefs, Ministry of Finance

On the parallel if housing expenditure is looked as shown in figure-4, it had been low in comparison to other major components of the budget. There had been many variations over the period in housing expenditure. The decline in government expenditure led the room for private investors to invest in real sector and as there is less room for government to invest in housing sector which thus leads to lower expenditure.

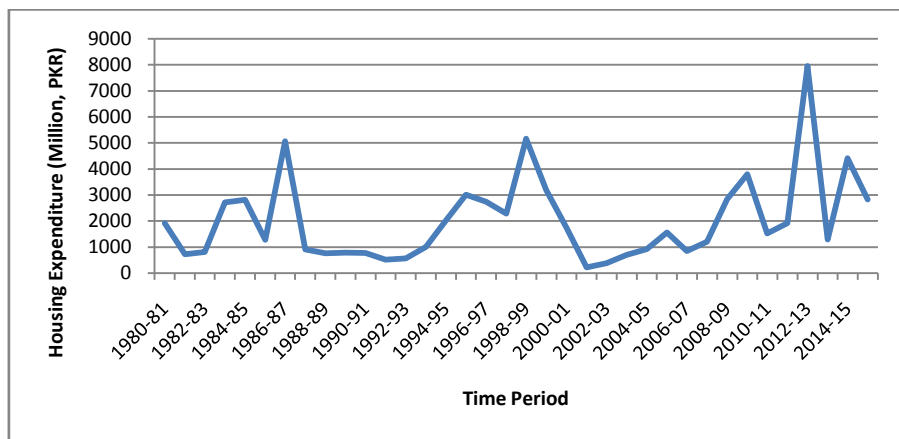


Figure 4. Housing Expenditure as Part of Public Sector Development Expenditure (Million, PKR)

Source: Annual Budget Briefs, Ministry of Finance

In order to analyze the underlying relationship, it is important to note that time series observations under the study need to be integrated of the same order. To check for same order of integration, (Dickey & Fuller, 1979) test is used. Once it get confirmed that all variables are integrated at same order, Johansen cointegration approach is used to test for long run relationship. To get into empirics of

johansencointegration, (Johansen, 1988) approach of Maximum Likelihood Method is followed. Consider a VAR of order (p):

$$y_t = A_1 y_{t-1} + \dots + A_p y_{t-p} + Bx_t + \varepsilon_t \quad (2)$$

Where y_t is a k-vector of non-stationary I (1) variables, x_t is a d-vector of deterministic variables, and ε_t is a vector of innovations. We may write this VAR as:

$$X_t = \mu + \Phi D_t + \Pi_p X_{t-p} + \dots + \Pi_1 X_{t-1} + e_t \quad (3)$$

There are two possible specifications for error correction: that is, two VECM (vector error correction models). Using long run VECM in this regard will be used which takes the following form:

$$\Delta X_t = \mu + \Phi D_t + \Pi X_{t-p} + \Gamma_{p-1} \Delta X_{t-p+1} + \dots + \Gamma_1 \Delta X_{t-1} + \varepsilon_t \quad (4)$$

With $t=1, \dots, t$

Where

$$\Gamma_i = \Pi_1 + \dots + \Pi_i - I \quad (5)$$

Where $i=1 \dots p-1$

Now to find the rank there are two test statistics which are primarily known in the process of Johansen cointegration. The two statistics are eigenvalue test and trace statistics. Eigenvalue tests that how many numbers of eigenvalues are not equal to zero. Maximum eigenvalues can be tested through the hypothesis where r is termed as rank of matrix and it ranges from zero to k and $k-1$. Hypothesis in this regard can be structured as:

$$H_0 : rank(\Pi) = r$$

$$H_a : rank(\Pi) = r + 1$$

Test statistic in this case of maximum eigenvalue test $\Pi(r, r + 1) = -T \log(1 - \lambda_{r+1})$

The test statistics for testing $H(r)$ in $H(r + 1)$ maximum statistic is:

$$-2(\log) Q((H(r) | H(r + 1))) = -T \ln(1 - \lambda_{r+1})$$

Johansen from this determines the number of cointegrating relationship on the bases of rank of Π matrix.

Similarly trace statistics can be obtained, if logarithm of equation mentioned above can be taken: $-2 \log Q((H(r) | H(n))) = -T \sum_{i=r+k}^n \log(1 - \lambda_i)$

Trace statistic test is a joint significant test where we test the Π matrix that trace test's calculated value is increasing through summing eigenvalue in it or not. Following hypothesis in this regard will be tested:

$$H_0 : rank k (\Pi) = r$$

$$H_0 : rank k (\Pi) > r$$

From this we can write test statistic as: $\Pi trace (r) = -T \sum_{i=r+1}^k \log(1 - \lambda_i)$

5. Results and Discussion

After obtaining data and testing for the time series properties of stationarity, it can be seen that all variables are integrated of the same order at 1% and 5% levels of significance. This same order of integration is a guarantee that Johanson cointegration approach can be used.

Table 2. Results for Test of Stationarity

Variable Name	Calculated Value	Order of Integration
Education	-6.21*	I(1)
Energy	-9.89*	I(1)
Transport and Communication	-6.24*	I(1)
Health	-9.82**	I(1)
House	-7.87**	I(1)
GDP	-6.15*	I(1)
Gross Fixed Capital Formation	-7.73*	I(1)
PSDP	-10.10*	I(1)
FDI	-6.18*	I(1)

Note: Expenditure on Health and Housing are significant at 1% level of significance, whereas Expenditure on Education, Energy, Transport and Communication along with GDP, Gross Fixed Capital Formation and FDI are stationary at 5% level of significance

As it is confirmed that all variables are integrated at the same order i.e. order of integration is 1. This led us to testing for long run relationship. To test for long run relationship, first thing to obtain is number of cointegrating equations which can be decided by trace statistics here. From the results it can be observed that there is one cointegrating equation. This can be seen below in the Table 3:

Table 3. Eigen value and Trace Statistics

Maximum Rank	Parms	LL	Eigenvalue	Trace statistic	5% Critical value
0	7	-77.81		135.13	124.24
1	20	-46.74	0.83	73.00*	94.15
2	31	-31.97	0.57	43.46	68.52
3	40	-23.76	0.37	27.04	47.21
4	47	-18.09	0.27	15.71	29.68
5	52	-13.45	0.23	6.42	15.41
6	55	-10.24	0.16	0.004	3.76
7	56	-10.24	0.00		

Note: * indicates number of long run equations

Based on the results from number of equations for long run, it is found that there is only one long run equation. The long run equation which shows relationship in this case is as follows:

$$\begin{aligned}
 lGDP_t = & 5.02 - 0.12lfdi_t + 1.08lgfcf_t + 0.04ledu_t - 0.08lhealth_t + \\
 & 0.10lhouse_t - 0.12lcomm_t + \varepsilon_t \tag{6} \\
 (5.63)(-36.47)(-2.91)(6.79)(-7.63) & \qquad \qquad \qquad (4.76)
 \end{aligned}$$

The results above show that there is negative relationship between economic growth and foreign direct investment (FDI). This negative relationship between growth and FDI can be attributed to the net FDI which is negative over the period and investment had been flying out of the country. This can be seen below in the figure

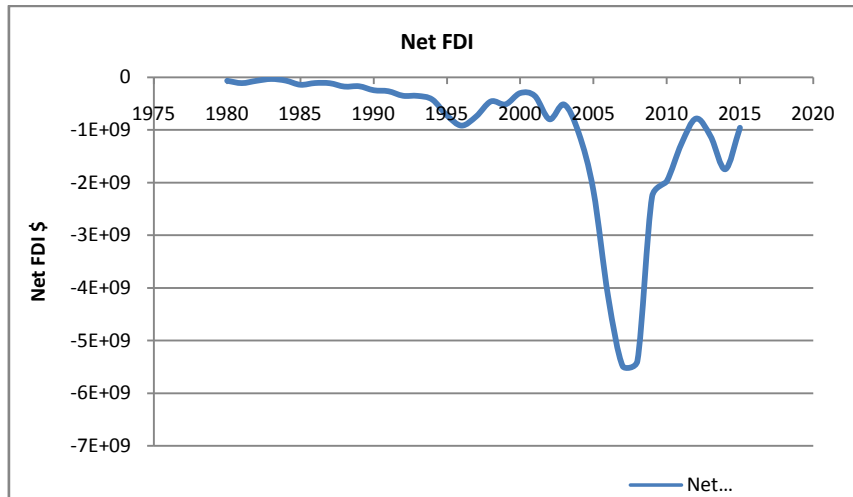


Figure 5. Net Foreign Direct Investment
Source: World Development Indicator

Similarly this negative sign of foreign direct investment can also be depicted to decline in new number of investments i.e. investments decline from 63 in 2013 to 35 in 2016. This declining number of investment can be attributed to high number of taxation i.e. firms are facing over 50 levies in the form of taxes, cess, user fees, permit, licenses and surcharges. Beside these taxes and surcharges there are number of withholding taxes, turnover taxes, further taxes and super taxes. These taxes are paid to federation, provinces and local governments, each with its different modus operandi for filing, assessing, submitting payments and auditing them. This increases transactions costs of businesses some of which are transferred to consumers, leading to higher price and loss of welfare. This negative relationship is in accordance with; (Falki, 2010) which was under an export promotion (EP) trade regime compared to an import-substitution (IS) regime. Similarly negative relationship between FDI and economic growth was also shown by (Khan, 2007) and (Kumar & Pradhan, 2002).

Similarly looking at gross fixed capital formation i.e. Private investment it is said to have positive relation with GDP. Positive relationship between gross fixed capital formation and gdp is also found by, (Dritsakis *et. al.*, 2006). Similarly positive relation was found by Suhaib and (Ndidi, 2015). Thus it shows that significant results corroborate with the Harrod-Domar model which proved that growth rate of national income will directly be related to saving ratio and/or capital formation (i.e. the more an economy is able to save-and-invest out of given GNP, the greater will be the growth of that GDP).

While looking at the PSDP components education, housing, health and transport and communication expenditure, it can be seen from the results that education and housing expenditure has positive relationship with economic growth whereas health and transportation and communication is having negative relationship with GDP. Positive relationship between housing expenditure and GDP was also found by (NAHB, 2009). Positive relationship of this housing expenditure can be attributed to increased housing consumption expenditure over the period as percentage of GDP for the case of Pakistan. Similarly education which is key component for building a human capital for long run is also positively related to GDP. This positive relationship also shows that with increased expenditure on education there will be increase in productivity which will further increase the economic activity and thus leading to positive growth. This positive relationship was found by (Mallick *et. al.*, 2016). On the contrary between health and transport and communication, Pakistani growth has negative relationship. This negative relationship is also due to weak contribution of transportation sector as its only role is in connectivity but with very small magnitude. This direction of relationship can

reverse if there gets associated different economic activities beside connectivity. As far as health expenditure is concerned it is also due to post 18th amendment where health sector had been given under provincial control and federal government is only looking after particular sections. In long run this relationship's magnitude is very small. It can reverse the direction to positive with more initiatives if taken in the long run where both federal and provincial government collaborates and provide sound facilities.

As long run relationship has been established, going towards short run VECM (equation obtained with all diagnostics cleared) it can be seen from the equation below that GDP is influenced by variables taken in this study in short run. It can be seen that foreign direct investment has negative relationship in short run as well which can be reasoned based on net foreign investment being negative. Similarly private investment has positive role in short run whereas health has positive role when lagged and expenditure on housing has positive relation in short run with GDP. Also it can be seen from the result that transport and communication has negative relationship in short run. It can be further observed from the given equation below that private investment; education expenditure, GDP, health expenditure and housing expenditure also have a lag effect in short run.

$$\begin{aligned} \Delta l g d p_t = & 0.18 - 0.06 \Delta l f d i_t + 0.14 \Delta l g f c f_t - 0.01 \Delta l h e a l t h_t + 0.01 \Delta l h o u s e_t \\ & (8.27) \quad (-5.18)(3.17)(-3.11) \quad (2.32) \\ & -0.02 \Delta l c o m m_t - 0.30 \Delta l g d p_{t-1} - 0.17 \Delta l g f c f_{t-1} - 0.02 \Delta l e d u_{t-1} \\ & + 0.01 \Delta l h e a l t h_{t-1} \\ & (-2.92)(-2.73)(-2.84)(-3.07)(3.57) \\ & -0.02 \Delta l h o u s e_{t-1} - 0.06 e_{t-1} + \mu_t \\ & (-3.36) \quad (-7.89) \end{aligned}$$

6. Conclusion and Policy Recommendations

Pakistan's public sector development expenditure pattern has huge uncertain behavior and much of the variations are there in major components which had being effecting investment in that particular sector and that low investment had led to low growth. Beside this uncertainty there has been a major factor of 18th amendment which resulted in devolution of key components like health, education and agriculture as primarily to provinces from federation. It is due to these factors investment had also been very low or growing at slow pace which resulted in low growth figures. This current study is an effort to find out the effect of public sector development expenditures and investment on economic growth. The key components of public sector development expenditure which are taken in this study are transportation and communication, housing, education, health. Beside these variables GDP, Foreign direct investment and gross fixed capital formation (domestic investment) are other variables. It is visible from the data that only transportation and communication expenditure is growing over the period. One reason for this growth being its centralized nature as this section is under federation from where it is being operated from National Highway Authority as key player. Other components like health, housing and education have many variations within the key reason for health and education being devolution and lack of heads coming under federal government. Being provincial subject it is now controlled by each province in accordance to their needs whereas in housing sector majority of the contribution is being done by real estate business which is being run by private sector had been a major cause of low expenditure by government in this sector. Empirically, it is found that foreign direct investment, health and transport and communication sector has negative relationship with growth. This negative relationship can be explained by the reason that net investment in Pakistan has been on negative side because of highly taxed system which discourages investors to bring investment in here. Beside taxation, there are certain factors' leading to high cost of doing business is another key reason for declining investment.

Similarly health expenditure has negative relationship with growth because of devolution being primary reason. Provinces run health sector as per their own needs leaving federation with specific programmes and monitoring duties. Transportation and communication with very weak role in connectivity in areas which do not have any access to market makes it to have negative relationship. On the parallel side private investment, education expenditure and housing expenditure has been playing significant role in economic growth of this country.

Based on the above discussion, to encourage foreign investor to invest there is need for reduction in number, rate and type of direct taxes. Secondly government should review proposals put forth by the recent tax reforms commission and move towards harmonized taxation. To encourage investors to invest in Pakistan, there is also need to bring some balance in tax contribution by different sectors of the economy. To give investors space in this system and to bring net foreign investment on positive side there is also need for separation of tax policy and administration functions. Ideally, a dedicated national tax policy unit should be maintained at the ministry of finance, while tax administration function may be left to both federal and provincial tax authorities. The administrative reforms can be expedited through strengthening of federal and provincial tax offices. Similarly there is need to bring in balance between the sectors of public domain which are under provincial constituency and federation should give complete autonomy to provinces to work on their own in these sectors. The only intervention by federation should be in a case of provision of finances which are needed to run the business. Research should be made component of federal domain from where recommendations can be put forward for better functioning.

References

- Ahmed, V., Abbas, A., & Ahmed, S. (2013). *Public Infrastructure and Economic Growth in Pakistan: A Dynamic CGE-Micro Simulation Analysis*, Springer, 117-143. doi. [10.1007/978-3-319-03137-8_5](https://doi.org/10.1007/978-3-319-03137-8_5)
- Akram, M., & Khan, F.J. (2007). Health care services and government spending in Pakistan, *PIDE Working Papers*, No.32. [[Retrieved from](#)].
- Ali, S. (2010). Does the choice of government expenditures affect poverty? Time series evidence from Pakistan, *International Conference on Applied Economics*. [[Retrieved from](#)].
- Asghar, N., Awan, A., & Rehman, H. (2012). Government spending, economic growth and rural poverty in Pakistan, *Pakistan Journal of Social Sciences*, 32(2), 469-483.
- Asghar, N., Azim, P., & Rehman, H. (2011). Impact of government spending in social sectors on economic growth: A case study of Pakistan, *Journal of Business & Economics*, 3(2), 214-234.
- Ashghar, Z., & Zahra, M. (2012). A Benefit Incidence Analysis of Public Spending on Education in Pakistan Using PSLM Data, *The Lahore Journal of Economics*, 17(2), 111-136.
- 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*, 8(2), 1-16.
- Dickey, D.A., & Fuller, W.A. (1981). Likelihood ratio statistics for auto-regressive time series with a unit root. *Econometrica*, 49(4), 1057-1072. doi. [10.2307/1912517](https://doi.org/10.2307/1912517)
- Dritsakis, N., Varelas, E., & Adamopoulos, A. (2006). The main determinants of economic growth: An empirical investigation with Granger causality analysis for Greece. *European Research Studies Journal*, 9(3-4), 47-58.
- Government of Balochistan, (2013). *Balochistan Education Sector Plan 2013-18*, Policy Planning and Implementation Unit, Education Department, Government of Balochistan.
- Government of Khyber Pakhtunkhwa, (2015). *Budget Strategy Paper 2015-16*, Government of Khyber Pakhtunkhwa.
- Government of KPK, (2010). *Khyber Pakhtunkhwa Health Sector Strategy 2010-17*, Government of Khyber Pakhtunkhwa.
- Government of Sindh, (2012). *Sindh Health Sector Strategy 2012-2020*, Government of Sindh.
- Government of Sindh, (2015). *Budget Strategy Paper 2015-16 to 2017-18*, Economic Reform Unit, Finance Department, Government of Sindh.
- Government of the Punjab, (2015). *Punjab Growth Strategy 2018: Accelerating Economic Growth and Improving Social Outcomes*, Government of the Punjab.
- Hakro, A.N., & Akram, M. (2007). The incidence of government expenditures on education and health: Microeconomic evidence from Pakistan, *The Lahore Journal of Economics*, 12(2), 27-48.
- Hussain, F., Hussain, S., & Erum, N. (2008). Is defense expenditure pro poor or anti poor in Pakistan? An empirical investigation, *Paper Presented at 30th AGM PIDE*. [[Retrieved from](#)].

Journal of Economics and Political Economy

- Hussain, F., Qasim, M.A., & Sheikh, K.M. (2003). An analysis of public expenditure on education in Pakistan, *The Pakistan Development Review*, 42(4), 771-780.
- Iqbal, N., ud Din, M., & Ghani, E. (2013). Fiscal Decentralization and Economic Growth: Role of Democratic Institutions, Pakistan Institute of Developing Economics, *Working Paper*, No. 89. [Retrieved from].
- Johansen, S. (1988) Statistical analysis of cointegrating vectors. *Journal of Economic Dynamics and Control*. 12(2-3), 231-254. doi. [10.1016/0165-1889\(88\)90041-3](https://doi.org/10.1016/0165-1889(88)90041-3)
- Kalim, R., & Hassan, M.S. (2013). Military Expenditure and Poverty in Pakistan, Proceedings of 3rd International Conference on Business Management, [Retrieved from].
- Kalim, R., & Hassan, M.S. (2014). Public defense spending poverty in Pakistan, *Review of Public Economics*, 211, 93-115. doi. [10.7866/HPE-RPE.14.4.3](https://doi.org/10.7866/HPE-RPE.14.4.3)
- Kelegama, S. (2012). *Foreign Aid in South Asia: The Emerging Scenario*, SAGE
- Mallick, L., Das, P.K., & Pradhan, K.C. (2016). Impact of educational expenditure on economic growth in major Asian countries: Evidence from econometric analysis. *Theoretical and Applied Economics*, 22(2), 173-186.
- National Association of Home Builders. (2009, July 30). Housing's Contribution to Gross Domestic Product. Retrieved February 12, 2010. [Retrieved from].
- Pasha, H., Imran, M., Iqbal, A., Ismail, Z., Sheikh, R., & Sherani, S. (2011). Review and analysis of Pakistan's public investment program, *International Growth Centre*, [Retrieved from].
- PILDAT, (2012). *Understanding Punjab Health Budget 2012-13: A Brief for Standing Committee on Health Provincial Assembly of the Punjab*, Pakistan Institute of Legislative Development and Transparency.
- RAFTAAR, (2015). *Pakistan's Public Expenditure: Insights & Reflections*, Research & Advocacy for the Advancement of Allied Reforms.
- SDPI, (2013). *Managing Intra-Country Growth Disparities in South Asia*, 6th South Asian Economic Summit. [Retrieved from].
- Shahbaz, M., Afza, T., & Shabbir, M.S. (2013). Does defence spending impede economic growth? Cointegration and causality analysis for Pakistan, *Defence and Peace Economics*, 24(2), 105-120. doi. [10.1080/10242694.2012.723159](https://doi.org/10.1080/10242694.2012.723159)
- Shuaib, I., & Ndidi, N.D.E. (2015). Capital formation: impact on the economic development of Nigeria 1960-2013. *European Journal of Business, Economics and Accountancy*, 3(3), 23-40.
- Wahab, M.A., Ahmed, V., & Javed, A. (2013). Human resource development, government spending and productivity of human capital in Pakistan, *SAARC Journal of Human Resource Development*, 9(1), 32-48.
- Zeshan, A., & Ahmed, V. (2014). How spending on defense versus human capital impacts economic productivity in South Asia?, *International Journal of Economics and Empirical Research*, 2(2), 74-83.



Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal. This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by-nc/4.0>).

