Foreign assistance and economic growth: evidence from Pakistan 1972 - 2010

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Abstract

This paper examines the relationship between foreign assistance and economic growth for the period 1972 to 2010. Past literature indicates that due to low domestic resource mobilization Pakistan had to resort to various forms of foreign assistance on a regular basis. Using time series data since 1972 and employing Johansen maximum likelihood procedure we show that foreign assistance in the absence of macroeconomic stabilization and structural reforms has a negative relationship with real per capita GDP. However national savings as percentage of GDP show a positive relationship with real per capita GDP. Pakistan has a long history of dependence on multilateral and bilateral development partners. Over the decades the share of grants as percentage of total foreign assistance has declined forcing the country to procure loans at harsh conditionalties. Given the positive impact of national savings on economic growth there is an urgent need for improving the tax base, promoting instruments that encourage savings culture in the private sector and attracting remittances from abroad. These increased savings would then have to be channelized towards productive investments which in turn require pro market reforms.

Keywords: Foreign assistance, Economic Growth, National Savings.

1. Introduction

Pakistan like many other developing counties stands dependent upon foreign assistance particularly for its development needs due to low domestic resource mobilization. Flows of savings from developed to non-developed economies have traditionally taken the form of grants and loans. The aid injection in theory brings rapid economic growth. Successful aid experiences suggest countries achieving, faster physical and human capital accumulation and in some instances improved welfare levels. There are also negative effects of foreign aid in aid recipient countries which divert large part of their funds (foreign assistance) to non-development public administration, defense expenditure and debt servicing. Furthermore, political instability, frequent changes in policies, misaligned public sector priorities and inefficiency of institutions

neutralizes the effect of aid on growth thereby having less than expected impact on poverty reduction (Ahmed and Wahab 2010).

Pack and Pack (1993) argued that aid ineffectiveness in developing countries is because of diversion of aid from development to deficit financing (which is largely owed to rising current expenditures), debt servicing, and perhaps also to own-source revenue reduction. Burnside and Dollar (2000) find positive impact of aid in developing countries in presence of prudent macroeconomic policies. However Easterly et al. (2003) find no support that aid works well under good policy environment. Chong et al. (2009) show significant effect of aid on inequality and poverty reduction. Furthermore they suggest that good institutions may be necessary for aid to reach the poor. When studied for specific social sector indicators Masud and Yontcheva (2005) show that NGO aid reduces infant mortality more effectively than official bilateral aid. Arndt et al. (2010) find that in the long run aid has a positive and statistically significant causal effect on growth and aid remains a key tool for enhancing the development prospects of poor countries. Johansson (2011) study aid inflows with respect to socio-economic conditions of recipient country and findings indicate that there is no evidence of indebtedness influencing aid composition.

Pakistan economy has remained dependent on foreign inflows for economic growth and development[1]. Using cointegration analysis, this paper examines the relationship between foreign assistance and economic growth during 1972 to 2010. Section 2 provides review of Pakistan-specific literature. Section 3 gives the background and the description of the model. Section 4 interprets the results and section 5 concludes.

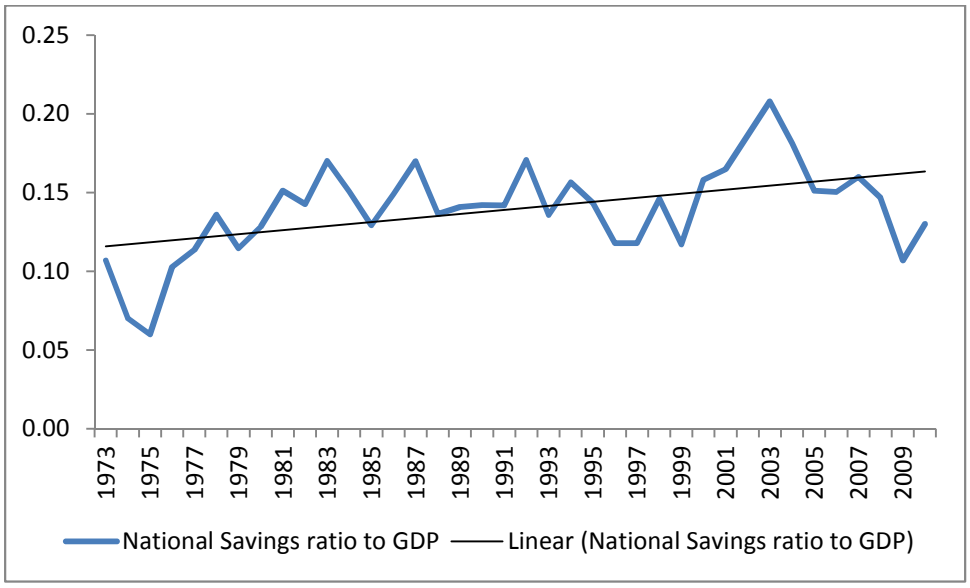
2. Role of Foreign Assistance in Pakistan Economy

Numerous studies have attempted to examine the relationship between foreign assistance and economic growth in case of Pakistan. Chisti and Hasan (1992) study the relationship between foreign aid and public investment and their findings show that foreign aid in the form of grants have modest impact on public investment whereas foreign assistance in the form of loans have insignificant effect. Rahim and Khan (1993) found an inconclusive relationship between aid, savings and economic growth. There is negative coefficient between aid and domestic resource mobilisation. However aid plays a definite role in determining overall savings behaviour in Pakistan. Khan (1997) study the impact of foreign aid and debt on economic growth analysis and show that the terms on which Pakistan has received the loan have changed over time. He finds that aid has negative causal effect on GDP. Iqbal (1997) discovered that foreign capital flows channelled through the public sector have a strong positive impact on social and non-development expenditures. However, foreign aid has little effect on development expenditure. The non-development expenditure has strong interdependence with social sector expenditures. Furthermore foreign assistance increases potential of tax revenue generation. Ishfaq (2004) explains that foreign aid, though in a limited manner, has assisted poverty reduction in Pakistan. Ghulam (2005) found the positive impact of ODA on economic growth, as the flow of foreign capital increases the GDP increases at a decreasing rate. However rising aid flows substituted for domestic savings ultimately increasing the debt burden. Ahmed and Wahab (2010) by using a computable general equilibrium (CGE) model show that a 50 percent increase in foreign savings will increase real

[1] Tax to GDP ratio in 2010 was 10.9 percent which is one of the lowest in the region.

private consumption by 2.8 percent, imports by 3.7 percent, exports by 6.5 percent and reduce poverty by 3.1 percent

Figure 1 National Savings ratio to GDP 1973 to 2010



Source: Economic survey of Pakistan

Figure 1 show the national savings of Pakistan as percentage of GDP. National savings as ratio to GDP has increased over time. One can observe the consistent spikes in national savings with respect to GDP. Although national savings increased over time but not sufficient to meet the domestic investment demands therefore country highly depends on foreign savings.

Figure 2 Foreign Assistance ratio to GDP

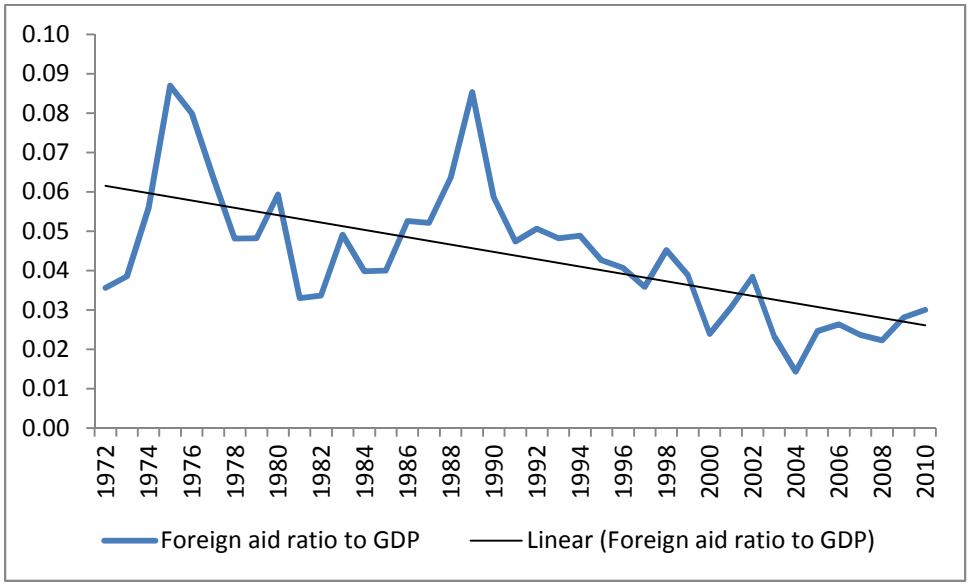


Figure 2 show foreign assistance inflows as percentage of GDP from 1972 to 2010. During this period Pakistan experienced declining trend and high volatility in foreign assistance inflows ratio to GDP.

3. Model and Data

Mbaku (1993) device the relationship between foreign aid and economic growth and show that the impact of foreign aid on economic growth was negative for Cameroon. Mbaku etal. (1994) estimated the long run relationship using Johansen cointegration test between foreign aid and economic growth for Cameroon during 1970 to 1990. Findings show that foreign aid and domestic savings had contributed to economic growth and thus were complementary inputs. The different results in 1993 and 1994 studies by Mbaku were mainly due to change in methodology.

In order to estimate the long run relationship between foreign aid and economic growth for Pakistan, we have followed the methodology used in Mbaku (1994). In order to test the cointegration it is essential that the variables in the model, under consideration, are of the same order of integration (see Engle and Granger, 1987; and Cuthbertson, Hall and Taylor, 1993).The order of integration of series can be determined by using the Dickey–Fuller tests (Fuller 1976, Dickey and Fuller 1979, 1981). The widely used cointegration techniques are the Engle–Granger two-step cointegration technique (Engle and Granger 1987) and the Johansen's maximum likelihood procedure (see Johansen, 1988). Of these two the Johansen's maximum likelihood procedure is more robust and possesses a number of distinct econometric advantages (Banerjee et al. 1993). The cointegration form specified as:

$$PCY = \beta 0 + \beta_1 SY + \beta_2 GRANTDY + \beta_3 LOANDY + \beta_4 TGRNTDY + e \ldots\ldots\ldots\ldots\ldots\ldots (1)$$

and

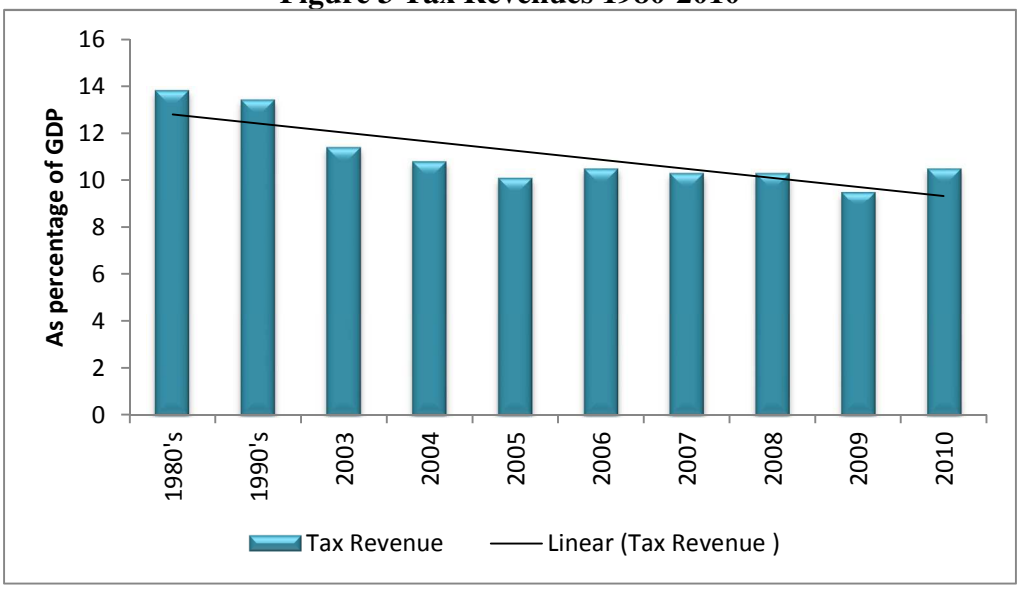
$$PCY = \gamma_0 + \gamma_1 SY + \gamma_2 AIDDY + V \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

Where *PCY* is per capita real *GDP, SY* is the savings to *GDP* ratio, *GRANTDY* is grants as a percentage of *GDP,LOANDY* is loans dispersed as a percentage of *GDP, TGRNTDY* is technical cooperation grants as a percentage *of GDP, AIDDY* is foreign aid to *GDP* ratio and *e* and *V* are the disturbance terms for Equations 1 and 2 respectively. We have used published time series data since 1972 and the source for most of this data is Federal Bureau of Statistics in Pakistan.

4. Foreign assistance and Economic Growth

Pakistan has long a way to go before it can have a well established taxation system, instruments for promotion of private savings and taping international markets for capital inflows. During 1980s and 1990s the tax revenue as percentage of GDP was 13.8 percent and 13.4 percent on average which had gone down to 9.5 percent by 2009. Figure 3 shows the declining trend of tax revenues overtime. The agriculture and many services sectors still remain out of the tax net. The large informal economy also poses high tax administration and compliance costs. The tax gap in Pakistan currently is over Rs 600 billion (Ahmed 2009). In order to finance the twin deficits government has remained dependent on foreign assistance which in later years was procured on harsher terms.

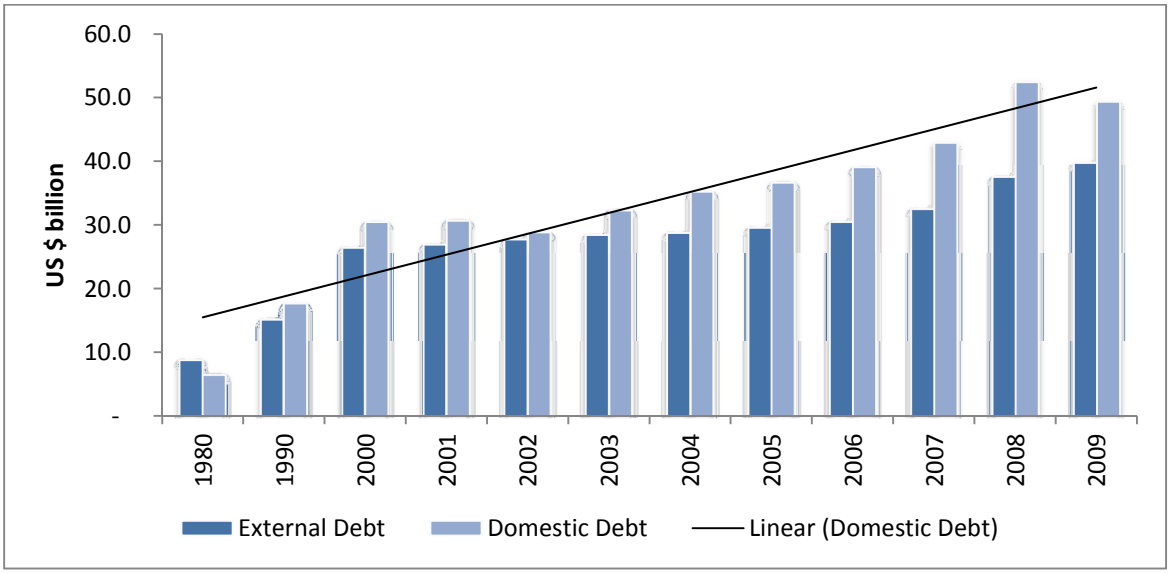
Figure 3 Tax Revenues 1980-2010



Source: Economic Survey of Pakistan (Various Issues)

Pakistan's debt stock has also ballooned over time. Figure 4 shows the debt stock of Pakistan from 1980 to 2010. In 1980s and 1990s the external debt was $ 8.7 and $ 15.2 billion and domestic debt was $ 6.4 and $ 17.7 billion. Overall debt stock has shown rising trend and reported an external debt stock at $ 39.9 billion and domestic debt at $ 49.3 billion in 2009. In the recent times the threat to fiscal sustainability comes from servicing of domestic debt which the government has been obtaining to finance losses of public sector enterprises, untargeted subsidies and a generous public sector investment program with main focus on infrastructure financing. The external and internal threat to national security forced the government to run a high security and defense budget which led Pakistan to exceeding the fiscal deficit targets set with the IMF in 2010. This also contributed to a higher inflation despite of a generally depressed demand for real sectors output.

Figure 4 Overall Debt Stock



Source: Economic Survey of Pakistan (various issues)

Table 1 shows the debt servicing burden of Pakistan over the past five years. The 2005 debt serving as percentage of exports receipts, foreign exchange earningsand GDP increased prominently during 2009 and 2010 reaching level that now threaten medium term macroeconomic stability. Pakistan has recently introduced the 18th amendment to the constitution which allows provinces to directly secure assistance from donors. However economic practitioners are of the view that such a system should not be put in place without proper management of national debt by federal government.

Table 1 Debt Servicing 2005-10

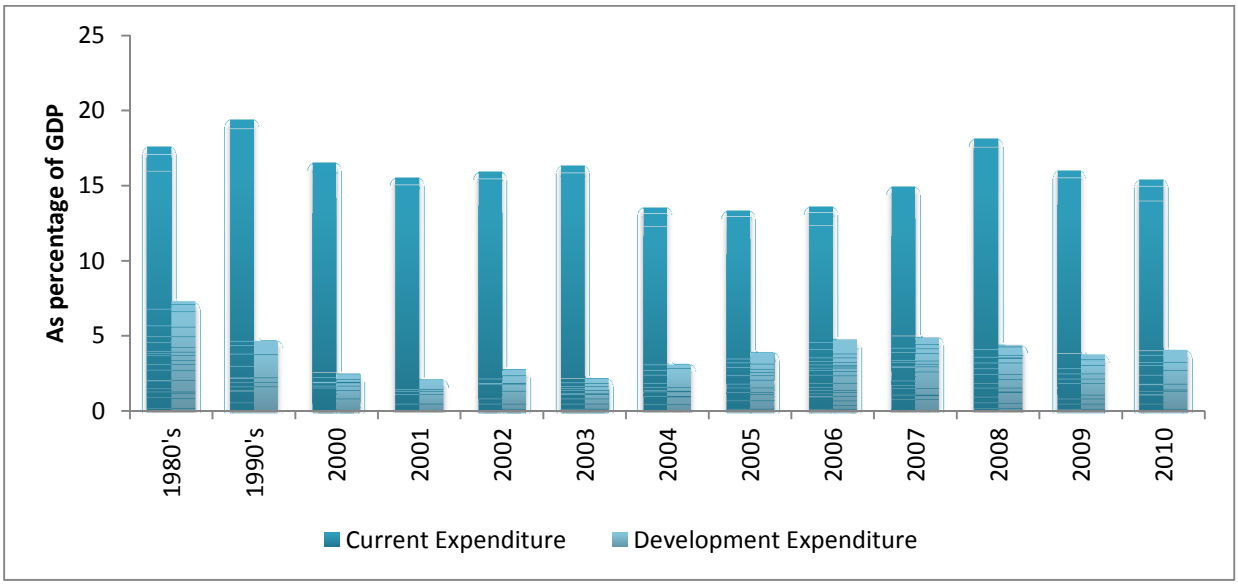
Year	Debt Servicing as percentage of Exports Receipts	Debt Servicing as percentage of Foreign Exchange Earning	Debt Servicing as percentage of GDP
2005	10.2	5.5	1.3
2006	9.6	5.1	1.2
2007	9.3	4.9	1.1
2008	8.6	4.8	1.1
2009	15.1	8.2	1.8
2010	13.3	7.0	1.5

Source: Economic Affairs Division

The accumulation of high debt stock is mainly due to deficit financing which includes high current expenditures by government, particularly those related to security, law and order and defense. Figure 5 shows the overall government expenditures, which exhibit that the proportion of development expenditures is significantly low as compared to current expenditures. In 1980s and 1990s the current expenditure was 17.6 and 19.6 as percentage of GDP respectively and development expenditure was 7.3 and 4.7 as percentage of GDP respectively. In other regional economies development expenditures to GDP ratio has been maintained at relatively higher levels. The focus is usually on those public sector investments that can provide a level

playing field for the private sector and in doing so such public sector investments can crowd-in foreign and domestic private investment.

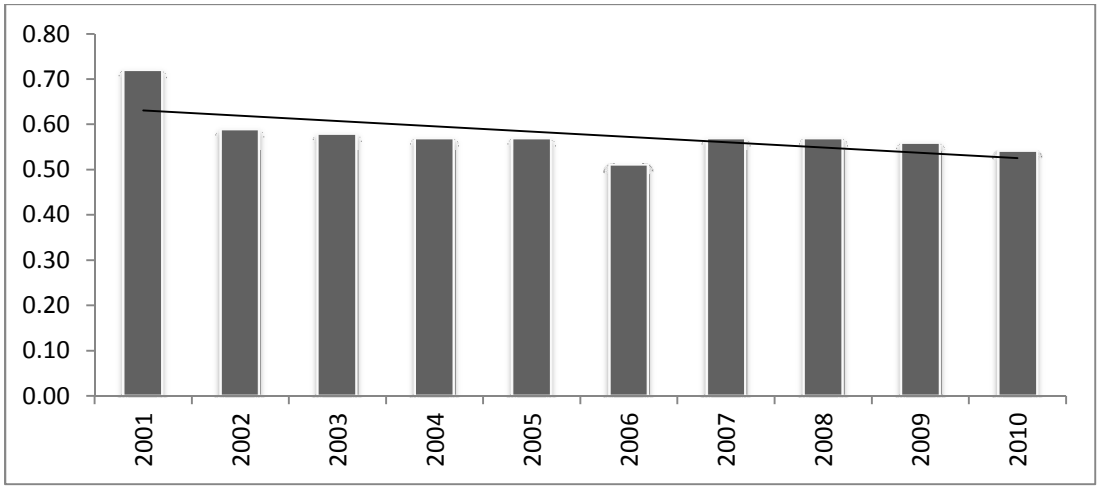
Figure 5 Government Expenditures 1980-2010



Source: Economic Survey of Pakistan

Figure 6 show the total health expenditures from 2001 to 2010. The total expenditures as percentage of GDP have declined over time. This may be one of the reasons of meager performance in heath indicators. Comparing Pakistan's health sector performance with other regional economies like Bangladesh, India, Nepal and Sri Lanka. It is evident that it has inadequate performance in reduction of mortalities and high population growth rates (See Table 2).

Figure 6 Total Health Expenditures (As % of GDP)



Source: Economic Survey of Pakistan

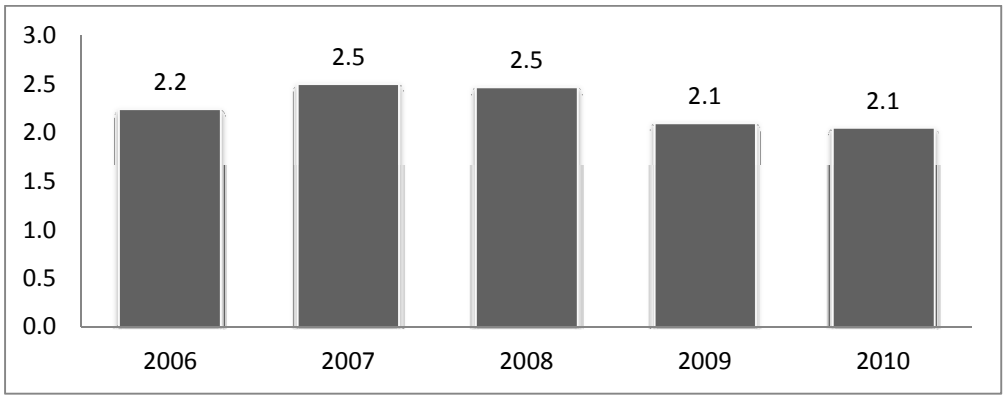
Table 2 Health Indicators

Countries	Life Expectancy (2008)	Infant Mortality Per 1000 (2009)	Mortality Under 5 Per 1000 (2009)	Population Avg. Annual growth rate (2009)
Pakistan	**67**	**65.1**	**95.2**	**2.10**
Sri Lanka	74	18.5	12.9	0.94
Bangladesh	66	59.0	69.3	1.29
Nepal	67	47.5	71.6	1.28
India	64	30.1	78.6	1.55

Source: Economic Survey of Pakistan

Figure 7 show Pakistan's public expenditures on education from 2006 to 2010. Expenditures on education are quite low in comparison with the other emerging and regional economies of Asia (See Table 3). Low expense on education has contributed poorly towards literacy rate. Pakistan stands low in literacy ratio in comparison with China, Malaysia, Sri Lanka and Vietnam.

Figure 7 Public Expenditures on Education (as % of GDP)



Source: Economic Survey of Pakistan

Table 3 Public Expenditures on Education and Literacy ratios (2009)

Country	Public Sector Spending (As % GDP)	Literacy rate (Percentage)
Bangladesh	2.6	55
China	-	93.7
India	3.3	-
Indonesia	3.5	-
Iran	5.2	-
Malaysia	4.7	92.1
Nepal	3.2	57.9
Pakistan	2.1	57
Sri Lanka	…	90.6
Thailand	4.5	-
Vietnam	5.3	92.5

Source: Economic Survey of Pakistan

Foreign assistance in the absence of structural reforms has been ineffective in contributing positively towards economic growth for Pakistan. The preoccupation with macroeconomic crises and stabilization has not let the economic managers to look beyond the short term. Besides the proportion of grants in total foreign assistance significantly declined as compared to loans thus imposing substantial debt servicing costs. During the first five year plan the share of grants in total foreign assistance was 77.2 percent as percentage of total foreign assistance which declined to 29.6 percent during 1999-2009. Share of loans in foreign assistance has significantly increased from 22.8 percent during first five year plan to 70.4 percent between 1999 and 2009.

Figure 8: Loans and Grants as percentage of Total Foreign Assistance

Year	Loans	Grants
Up to 30-06-1960	22.8	77.2
2nd Plan (1961-65)	51.5	48.5
3rd Plan (1966-70)	76.4	23.6
Non-Plan (1971-78)	88.9	11.1
5th Plan (1979-83)	76.3	23.7
6th Plan(1984-88)	71.8	28.2
7th Plan (1989-93)	79.0	21.0
8th Plan (1994-98)	90.4	9.6
Non-Plan (1999-2009)	70.4	29.6
Grand Total	**76.9**	**23.1**

Source: Economic Affair Division and author's analysis

The conditionalties associated with loans in terms of interest payments and repayment period were translated from softer to harsher terms. For instance interest payments during 1960s on loans were 3.3 percent which rose to 4.8 percent in 1980s see also (Hussain 1999).

Table 4 Terms and Conditions Associated with Loans

Periods	Interest Rate (%)	Payment period (Years)	Grace period(Years)
1950's	4.6	21	2
1960's	3.3	30	7
1970's	3.6	25	6
1980's	4.8	28	7
1990's	4.4	21	6
2005-09	1.3	25.1	-

Source: Economic Survey of Pakistan

5. Results

The results of Augmented Dickey Fuller (ADF) test are exhibited in Table 5. The endogenous i.e. real per capita income and exogenous variables i.e. foreign assistance and national savings are stationary at first difference on 5 percent level of significance.

Table 5 ADF-Unit Root test

Variable	**Intercept**	**Trend and Intercept**	**Remarks**
Real Per Capita GDP			
Level	1.66 (0.99)	-1.46 (0.82)	
1st Difference	-4.00 (0.00)	-4.15 0.01	I(1)
Foreign Assistance as percentage of GDP			
Level	-1.40 (0.57)	-2.60 (0.28)	
1st Difference	-6.31 (0.00)	-6.21 (0.00)	I(1)
Savings as percentage of GDP			
Level	-2.57 (0.10)	-2.57 (0.30)	
1st Difference	-6.89 (0.00)	-7.08 (0.00)	I(1)

Table 6 shows the results from Johansen's maximum likelihood procedure. Both the trace statistics and eigenvalues show that there is a unique long run relationship among the variables because in both cases the test shows one cointegrating equation at 10 percent significance level. Thus the Johansen cointegration test confirms the existence of a unique long run relationship among the variables namely, real per capita GDP, foreign assistance and savings.

Table 6 Results of Johansen's maximum likelihood procedure

Null Hypothesis	Alternate Hypothesis	Eigen Values	λ - Max Eigen statistics	λ - Trace statistics
r = 0	r = 1	0.46	20.60**	36.71*
r ≤ 1	r = 2	0.32	12.70	16.11
r ≤ 2	r = 3	0.10	3.41	3.41

Note: * and ** indicates significance at 5% and 10% levels respectively

In Table **7** we report the normalized coefficients of the cointegrating equation, Equation 2 and the results of the restricted likelihood ratio μ tests. Although the magnitudes of the coefficients of foreign assistance to GDP and national savings to GDP variables appear rather large, however they are significant. The coefficients of foreign assistance to GDP has negative whereas savings to GDP variables has positive relation with growth.

Table 7 Normalized cointegrating vector and hypothesis test

Variables	Normalized co-integrating Coefficient	Hypothesis test* (μ)
Foreign Assistance	143202 [275723.8]	-2.00
National Savings	80452.3 [-271326.8]	3.37

* Null hypothesis is the coefficient equal to zero. Indicates statistical significance at the 5% level. (The likelihood ratio, l 3, is distributed as a chi-square variable (1) under the null hypothesis). Normalized coefficients are reported in brackets.

6. Conclusion

In this study an effort has been made to access the impact of foreign assistance on economic growth. We have also discussed the issue of scarce domestic resources and the difficulties in bridging the saving investment gap. The analysis covers the period from 1972 to 2010. Results show that foreign assistance has negative whereas national savings has positive impact on economic growth of Pakistan. The negative effect of foreign assistance on economic growth can be justified persistently on grounds of poor macroeconomic fundamentals which result in accumulation of debt stock. Over the decades the share of grants as percentage of total foreign assistance has also declined and the loans procured by Pakistan translated into harsh conditionalities. Given the positive impact of national savings on economic growth, there is an urgent need for improving domestic resource mobilization ensuring macroeconomic stability and reducing reliance on foreign loans.

There is a need to increase the tax base of the country bybringing the presently exempt agriculture and services sectors in the tax net, bringing automation in tax system to avoid tax evasion, encouraging the tax payers through innovative incentives.

Government's current expenditures needs should not be financed through any mode of foreign investment. Pakistan markets are still heavily regulated and sector picking prevails through a distortive tax and subsidy culture. In the medium to long run government may device a

plan to only limits role to policy and regulations, leaving ownership, financing and management of productive sectors to the market.

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