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Pattern of Development and Sustainable Economic Growth In Pakistan: A Descriptive Analysis

Fizza Younis and Aslam Chaudhary and Muhammad Akbar

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Title: Pattern and Sustainability of Development in Pakistan

- 1. Fizza Younis** (First and Corresponding author)
Department of Economics, Forman Christian College (A Chartered University) Lahore,
Pakistan
- 2. Muhammad Aslam Chaudhary** (Second author)
Department of Economics, University of Lahore, Lahore, Pakistan
- 3. Muhammad Akbar** (Third author)
Department of Economics, Forman Christian College (A Chartered University) Lahore,
Pakistan

Abstract

The study attempts to examine the pattern of development and its sustainability in case of Pakistan by analyzing all major macroeconomic, social and environmental variables, using data from 1950 to 2013. Literature shows that low savings and investment rates, budget deficit, institutional shortcomings, lack of human development and environmental degradation remains some of the major issues faced by the country. These factors together along with bad governance are considered as the major cause of unsustainable development.

The descriptive analysis of the growth rates and averages of selected variables is conducted to study the pattern of economic growth and development. The Hicks-Page-Hartwick-Solow rule is applied for measuring sustainable development. The study reveals that Pakistan has experienced unsustainable economic growth since its birth. Savings and investment has remained low and there is persistence of fiscal deficit. Furthermore trade deficit worsens the balance of payment situation. Investment in infrastructure, especially social infrastructure is inadequate and, hence human development is neglected. In addition, there is environmental degradation. Thus there is need for policies that encompass economic, social and environmental sectors. In other words policies should aim at achieving sustainable development.

The sustainable development index utilizes the data of savings, depreciation of man made capital and environmental capital. The value of index for Pakistan is less than zero (fails to meet weak sustainability criteria) hence development is unsustainable. To improve the index national savings must be increased and invested in a way that will decrease the rate of depreciation of both man made and environmental capital.

JEL classification: O11; O53; Y10

Keywords: Pakistan economy; Pattern of development; Sustainable growth; Data analysis

1. Introduction

The development in Pakistan has always been a slow process. Although the country has witnessed high GDP growth rates but the social sector has lagged behind. The Human Development Index (HDI) ranking of Pakistan is 145 out of 187 countries (2011).¹ Bad governance, lack of competitive environment and institutional shortcomings are the primary constraints on the economic growth of the country (Hyder, Asma *et al.* (2008)).

Pakistan is the sixth most populous country with the population estimated to be around 180 million and growing at the rate 2.03%, where 22.3% of the population lives below poverty line making poverty alleviation one of the most important expected outcomes of the development process. At present the economic outlook of the country is bleak with the GNP per capita of \$1372, inflation rate 10.8%, national savings 10.7% of GDP, investment is 12.5% of GDP and fiscal deficit stood at 5% of GDP (2012)². The real GDP growth rate was 7.5 % in 2004, following the world financial crisis (2008) it declined to 1.7 % in 2009 and now it is 3.7 %. The public debt also increased after 2008 from 55.5 % of GDP in 2007 to 58.1 % in 2009, it now stands at 59.4 % of GDP (2011).

In addition to financial resource constraint shortage of natural resources and destruction of environment can also pose limitation on economic growth (Anderson *et al.*, 2003). Today importance is being given to environmental concerns while mapping out the policies for developing countries because of the linkage between the two. There is no universal definition of sustainable development but the widely accepted definition is by Brundtland Commission (1987) which states that it is “*the development that meets the needs of present generations without compromising the ability of future generations to meet their needs.*” In other words to achieve sustainable development a country must balance its social, economic and environmental objectives or needs for future, while making decisions today.³ According to another definition the sustainable development means “*improving the quality of human life while living within the carrying capacity of supporting ecosystems*” (IUCN; UNEP; WWF, 1991).

Sustainable development means that the economic activities should not be extended farther than the level of maintenance of man-made and natural capital stock will permit (United Nations Statistical Office (1992)). The investment in social and economic infrastructure and its maintenance can bring us closer to the goal of achieving sustainable economic growth as it will increase economy’s potential for growth along with preserving the environmental resources (e.g. by building dams, roads, wind mills, developing infrastructure for the availability of safe drinking water etc).

¹ Human Development Report, 2011.

² Pakistan Economic Survey, 2011-12 & www.undp.pk

³ The World Bank Group, <http://www.worldbank.org/depweb/english/sd.html>.

In Pakistan, savings and investment remain low on one hand. On the other hand, there is poverty⁴ which is an important cause and effect of environmental degradation. According to environmental performance index (EPI), Pakistan's rank is 120 and the Trend EPI rank is 72. Pakistan's environmental performance has shown little to no improvement over the last decade, as EPI rank was 123 and EPI trend rank was 72 in 2000 that shows weak performance.⁵ Similarly, GAIN index shows ranking of Pakistan as 140th with the score 48.5 and the trend is decreasing instead of improving. Vulnerability rank is 133 and readiness rank is 156. It makes Pakistan 21st most vulnerable to climate change and 56th least ready country to improve resilience.⁶

Hussain (1988) outlines some important issues regarding Pakistan's economy which had been a hindrance in achieving economic sustainability. It is argued that the economic growth in Pakistan could not be sustained when domestic savings, export growth, debt servicing expenditure and energy export bill are performing badly. The result was budget shortfall and balance of payment deficit. Fragile economic structure, poverty, unemployment, child labor, energy crisis and environmental degradation were argued to be the hurdles in the path of sustainable development. Policies were recommended to achieve the goal of sustainable development one of which was investment in infrastructure development, especially in energy production. However there has been no empirical study that probes whether or not the criteria for sustainable development is fulfilled in Pakistan.

In another study, Hussain (2009) discusses the process of deterioration of governance institutions and economy's structure concluding that the policies followed in Ayub's regime created social and economic disparities on one hand and locked the economy into an inadequate industrial structure on the other. Z. A. Bhutto's period was marked with increasing budget deficit and growing losses because of nationalization. During the Zia regime (1977-1987), Pakistan witnessed decline in investment and growth side by side an increasing poverty. In 1990s the growth rates as well as private investment declined, while poverty and unemployment increased due to bad governance. President Musharraf's era was not much different thus Pakistan's fails to achieve sustainable economic growth.

Pakistan's growth experience since 1947 to 2007 has also been studied by Husain (2010). It chalks out some of the achievements as well as failures and proposing policies to make growth sustainable for the future. According to the study, the growth experience of Pakistan shows that GDP growth is associated with the growth of total factor productivity (TFP), adequate investment in human capital would have ensured higher per capita income, pattern of growth to pre-poor can be influenced by public policies and that the inequality and regional disparities have increased regardless of the economic performance. Some of the prerequisites for better economic

⁴ See table 1.1

⁵ EPI 2012, <http://www.epi.yale.edu>

⁶ <http://index.gain.org/country/pakistan>

performance are political stability, strong institutions and investment in infrastructure and human capital.

Similarly McCartney (2011) has overviewed the factors affecting economic growth in Pakistan since independence utilizing the methodology of case study. The purpose was to verify the common belief that Pakistan's economy is influenced by external factor rather than domestic forces. The results show that the "dependant" Pakistan belief is misplaced and the economic growth is driven by domestic forces rather than global. The paper has identified five broad episodes of stagnation and growth, three of growth and two of stagnation, and although the growth episodes of Ayub and Musharraf's era does weakly support dependency hypothesis the whole story is different and domestic policy and governance reforms are the factors effecting growth most. Although the case study methodology has no formal method for the selection of case study the paper argues that it has allowed greater attention to be given to the causal mechanism linking policy and growth, furthermore, there is little correlation between growth rates across time periods in LCDs (evidence is given for India), therefore, case study methodology can be used but it would have been more appropriate if correlation between growth rates across time periods was analyzed for Pakistan.

Iqbal and Zahid (1998) examined the impact of some important macroeconomic variables on the economic growth of Pakistan over the period of 1956 to 1996. Multiple regression analysis is utilized for that purpose. Simple growth equations are used and the variables which are included follow regressions of Easterly (1993) and Barro (1991). Empirical results show that primary education, physical capital and trade openness has positive impact on economic growth where as budget deficit and external debt has negative impact on the economic growth. Furthermore, it is suggested that long-run growth-oriented policies are needed for sustainable growth. The development of said key variables is also examined over time which shows the need for the development of human and physical capital, as well as, the mobilization of domestic resources.

Sherani (2008) has also overviewed the macroeconomic conditions prevailing in the country concluding that Pakistan's imbalances are the result of wrong priorities and the flawed policies rather than exogenous factors. It is argued that the need of the hour is to introduce policies which will help the economy to deal with both the short-run hardships and the long-run sustainability. If the issue of macroeconomic stability is ignored then investment and growth will slow down and ultimately poor will be affected adversely.

Another study by Qayyum *et al.* (2008) has tried to determine the binding constraint on economic growth for Pakistan by utilizing decision tree methodology, following Hausmann *et al.* (2005). The analysis indicates that three binding constraints are poor governance, weak institutional framework and lack of competitive environment. They ruled out low savings rate as a constraint to economic growth because of low interest rates on savings. The decision tree methodology has several advantages but it can give bias results when the outcomes are linked

and the data include categorical variables, therefore, these results should be interpreted with caution.

Qureshi *et al.* (2010) have analyzed the impact of political instability on economic development taking the annual time series data for the years 1971-2008 and the results show a negative relationship between the two. It is concluded that for the long-run sustainability and prosperity of the country a stable political setup is a prerequisite. Political instability index is constructed using principal component technique and traditional variables are utilized to measure the economic development. Simple OLS technique is used for the analysis, which although is often used for time series analysis, is more appropriate for cross-section data rendering it inefficient.⁷ Still the study is a contribution to meager amount of literature on political instability and economic development in Pakistan.

There have been evidence that openness and integration with other countries is not conducive for Pakistan's economic growth. Ahmed and Khan (2008) studied the possible economic impact of the integration of Pakistan with South-East Asian countries concluding that it will not be sustainable for Pakistan. Empirical evidence show that in Pakistan (from 1987-2007) inflation has been above 4% per annum and exchange rate has been moderately volatile. The world wide trade share of the country is 0.2%. Pakistan has 10% of the region's population whereas its contribution to GDP is only 6%. Furthermore, there the long-run economic growth is unsustainable and short-run macroeconomic instability is prevailing in the country. Possible policy measures which could help improve the situation include, increasing investment in human capital, focusing on skill development in the labor market and promoting technological and managerial innovations. In their study Shahbaz *et.al* (2008) analyzes the macroeconomic determinants of sustained growth after the Structural Adjustment Program (SAP). The results show that SAP has failed to achieve its objectives. It reveals that inflation and trade-openness have negative effect upon economic growth while remittances and domestic investment have positive impact on growth in Pakistan. Some variables were not included in the study because of non-availability of the data. Therefore it would be useful to conduct more comprehensive study to find out the impact of other important macroeconomic variables on economic growth.

Comparative studies have also been done using data from various countries and finding the factors affecting the pattern of economic growth and development. Berg *et.al* (2008) have identified the structural breaks in economic growth of 140 countries using an extension of Bai and Parro's (1988, 2003) approach and analyzed some economic and political characteristics which seem to make economic growth sustainable. The results show that growth duration is significantly related to the equality and income distribution in the country, export orientation, democratic institutions and macroeconomic stability. Syrquin and Chenery (1989) studied the long-run pattern of development from 1950-1983, using panel data from 108 countries. This study tried to determine the structural changes in the economy by focusing on the processes of

⁷ Simonoff, Jeffrey S. (2011).

resource allocation. It concluded that level of development is associated with the structure of the economy and the structural change can be explained by the transformation of economy from agriculture to industrial economy with high income. Furthermore, the pattern of development varies over time depending on the exogenous factors influencing the structural change at micro-level. The degree of trade openness also affects the pattern of structural change and the results suggested that the higher level of trade openness achieved better performance.

Alam (2012) studied the impact of globalization, poverty, industrialization, urbanization, fertilizer usage, population and education on the environmental degradation using time series analysis. The results showed that globalization and education reduce environmental degradation, whereas, increased industrial and agriculture activity, population as well as poverty has negative effect on environmental degradation. In addition the impact of all these variables on economic growth is also analyzed and the results indicate that poverty, inadequate education and environmental degradation are the hindrance in the path of sustainable development. This result is based on theory rather the empirical evidence because sustainable development is not measured directly. No theoretical background is discussed here for the model used. Water pollution is used to indicate in environmental degradation but the author does not justify this choice as environmental degradation comes in many ways such as air pollution, soil erosion, climate change, deforestation etc.

Alam *et al.* (2007) have investigated the impact of population growth, urbanization, economic growth and energy intensity on environmental degradation in Pakistan. The paper analyzes the impact of all these variables on sustainable economic growth as well. The paper argues that for sustainable development, the environmental degradation must not increase but it should decrease with time. Results show that development depends upon energy use and resulting CO₂ emission. It has significant positive effect on economic growth. The urbanization and population growth also increases the process of environmental degradation and decrease development in the long-run.

In the section of the paper, an attempt has been made to analyze the pattern of development experience in Pakistan over the years (1950-2013). It is divided in sub-sections to make this analysis more comprehensive. Section three is about sustainable development and then the study is concluded in section four.

2. Pattern of Development

At the time of its birth the natural and human resources were underdeveloped in Pakistan. There was neither any industrial base nor skilled labor available. The first decade was a struggle to overcome the challenges which country faced after independence. In spite of this, the early decade was the decade of rapid industrialization. Average GDP growth rate during the first decade remained low at 3.1%, agriculture and industrial growth rates were 1.4% and 9.1% respectively. Inflation was 2.5 and it was perhaps the only time when there was fiscal surplus of

2.2% of GDP. During the second decade, efforts were made to build the institutions which contribute to the economic growth of the country. The economic policies followed during this time period focused on the improvement of GNP growth rate and welfare strategy was based on the “trickle-down effect”. Furthermore, the dependence on foreign aid increased to fill the dual gap (saving-investment gap and import-export gap). As a result, the GDP growth rate increased (6.8% on average) but the social sector was largely neglected, inflation increased to 3.2% and fiscal deficit was 2.1% of GDP on average. The inequality also increased substantially during this time period, proving that “trickle-down effect” was not the right notion to base the economic policies on (Aslam, 2011).

The average GDP growth rate decreased to 4.8% during the Bhutto regime. Industrial and agriculture growth rates were low, 5.5% and 2.4% respectively, and fiscal deficit increased to 5.3% of GDP⁸.

In the early 1980’s, the flexible exchange rate policies and the remittances from abroad helped improving balance of payments. The GDP growth rate also increased to more than 6% on average but the fiscal deficit remained an issue (7.1% of the GDP).⁹

1990s was the era of political instability in the country which affected the economic conditions as well. The GDP growth rate remained low (4.6 % on average) and fiscal deficit remained unmanageable (6.9% on average).

The decade of 2000s can be considered as mixed success. Where on one hand the major economic indicators improved on average, but the social sector remains neglected.

Bakai (1979) suggested that the policies of the 1960s should once again be implemented as that was the decade of high and sustained economic growth. But the data shows that social sector was neglected during that time period. Similarly in 1980s, there was high GDP growth but again the social sector remained under-developed, the need is, therefore, to devise policies that improve not only economic sector but the social sector as well. The most important areas for development are agriculture, industries and the administrative and political systems of the country (Burki and Robert, 1986).

A. Economic Growth

The five year averages of GDP, GNP, GDP per capita growth rates, the net factor income from abroad (every fifth year’s value) and sectoral growth rates are shown in table 2.1. According to these results it can be seen that the GDP and per capita growth rates were low during the 1950s. Growth rates increased substantially during the 1960s but decreased once again in the beginning of the decade of 70s. These results are consistent with Bakai (1979).

⁸ The values are average of the time period 1970-78

⁹ Aslam, M., 2011

In the late 70s, growth rates increased once again. There was also considerable increase in NFIA, Rs. 258 million in 1975 to Rs. 3152 million in 1980, and further increase during early 1980s (Rs. 28814 million). This is also reflected in the difference between GDP and GNP growth rates. In 1980 GDP growth rate was 4.65, whereas, GNP growth rate was 4.70. Growth rates were also high during early 1990s but decreased later on. This was also a time of political instability in the country. During the early 2000s the growth rates remained low, real GDP growth rate was 1.97% in 2001 and the GDP per capita growth rate decreased by 2.38%. After 2004 growth rates increased but decreased once again, GDP growth rate from 7.2% in 2008 to 3.63% in 2009. The increased average growth rates during the late 2000s shown in table 3.1 are because of the high growth rates during 2005-08.

The GDP per capita growth rate had remained very low during the first few decades, increasing in 60s and then again it decreased in the 70s. In the 90s and 2000s the GDP per capita growth rate was marginally better than the prior decades but decreased in 2013 to 0.41% (5-year average). One of the reasons behind low GDP per capita is high population growth rate in the country.

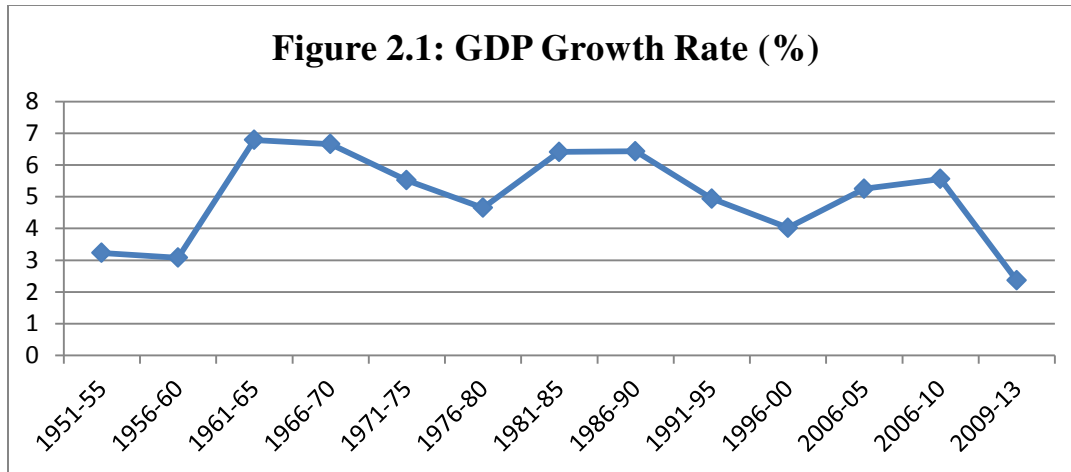
Table: 2.1 GDP, GNP, GDP Per Capita Growth Rates (Average %), Net Factor Income from Abroad (NFIA) and Sectoral Growth Rates (%)

Year	GDP	GNP	GDP/Capita	NFIA*	Agriculture	Industry	Services
1951-55	3.23	3.23	0.75	-4	1.34	10.22	3.9
1956-60	3.08	3.08	0.7	-23	2.12	6.1	3.16
1961-65	6.79	6.79	4.17	-61	3.8	13.24	7.3
1966-70	6.66	6.66	3.9	2	6.34	8.8	6.16
1971-75	5.52	5.52	2.61	258	0.84	5.12	7.1
1976-80	4.65	4.7	1.39	3152	3.9	7.14	5.4
1981-85	6.41	6.77	2.84	28814	3.78	7.98	7.9
1986-90	6.43	6.15	3.01	17163	4.36	7.52	5.36
1991-95	4.94	4.8	2.17	4031	4.26	5.06	5.12
1996-00	4.02	3.98	1.37	-47956	4.86	3.34	3.88
2006-05	5.25	5.93	2.86	88750	2.18	7.94	5.48
2006-10	5.56	5.83	3.68	193711	3.48	3.46	5.14
2009-13	5.14	5.42	3.22	193711	2.96	2.78	3.82

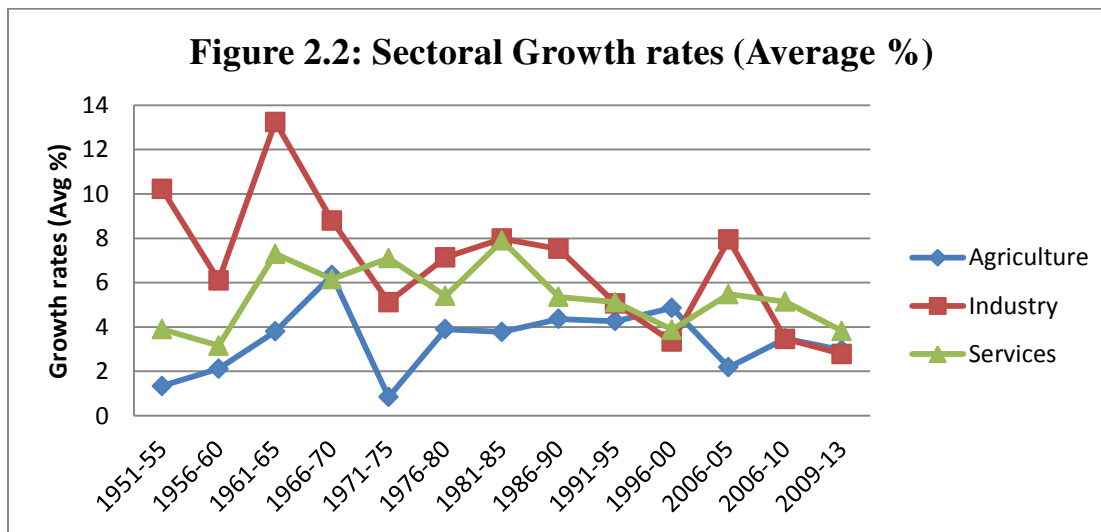
Source: Handbook of Statistics on Pakistan Economy, 2010, WDI Data Bank & Pakistan Economic Survey, 2012-13

In 2011 the GDP, GNP and GDP per capita growth rates were 3.7%, 3.58% and 1.65% respectively.¹⁰ The GDP growth rate of Pakistan (1950-2011) based on 5 year average are shown in figure 2.1. It captures the fluctuations in the growth rate.

¹⁰ Pakistan Economic Survey, 2011-12



Sectoral growth rates were quite low during the 1950s. During the 1960s, the industrial and services sectors grew rapidly but the agriculture potential of the country remained untapped, as is shown by the data in table 2.2. There were droughts in 1970-71, 1971-72 and 1974-75. A flood in 1973-74 and a major rust attack on wheat crop in 1977-78. In addition to this there was a mishap at Tarbela and public investment in Pak Steel Mill and port Qasim, which diverted the funds from public investment in agriculture and its growth rate decreased to 0.84% (1966-75). These factors were probably the reason because of which growth rates decreased in all sectors during late 70s. During the decades of 1980s and 1990s, there was marginal increase in the growth rates but they decreased again during 2000s as shown by the figure 2.2.



It also shows that the agricultural growth rates remain lowest than the other two sectors during all time periods. Services sector growth rates show lesser fluctuations and industrial growth rates are highest in the early 1950s and 1960s.

The share of agricultural sector in GDP is decreasing consistently, whereas, that of services sector is increasing as shown in table 2.2. The share of industrial sector has increased as well but

not by much. In 1950 agriculture sector, was 53.2% of GDP and the services sector was only 37.2% of GDP but in 2011 services sector is 53.3% of GDP whereas agricultural sector is only 20.90% of GDP. Industrial sector was 9.6% of GDP in 1950 and now it comprises 25.80% of GDP. In other words Pakistan has shifted from agriculture sector economy to services sector economy.

Table: 2.2 Share of Major Sectors in GDP (%)

Year	1. Agriculture	2. Industrial	3. Services & Utilities
1950	53.20	9.60	37.20
1955	48.00	13.40	38.60
1960	45.80	15.50	38.70
1965	39.70	20.70	39.60
1970	38.90	22.70	38.40
1975	32.70	23.50	43.80
1980	30.60	25.60	43.80
1985	27.40	23.40	49.20
1990	25.80	25.60	48.60
1995	24.90	25.80	49.30
2000	25.90	23.40	50.70
2005	22.40	26.30	51.30
2010	20.30	27.20	50.20
2011	20.90	25.80	53.30

Source: Handbook of Statistics on Pakistan Economy 2010 and Pakistan Economic Survey 2011-12

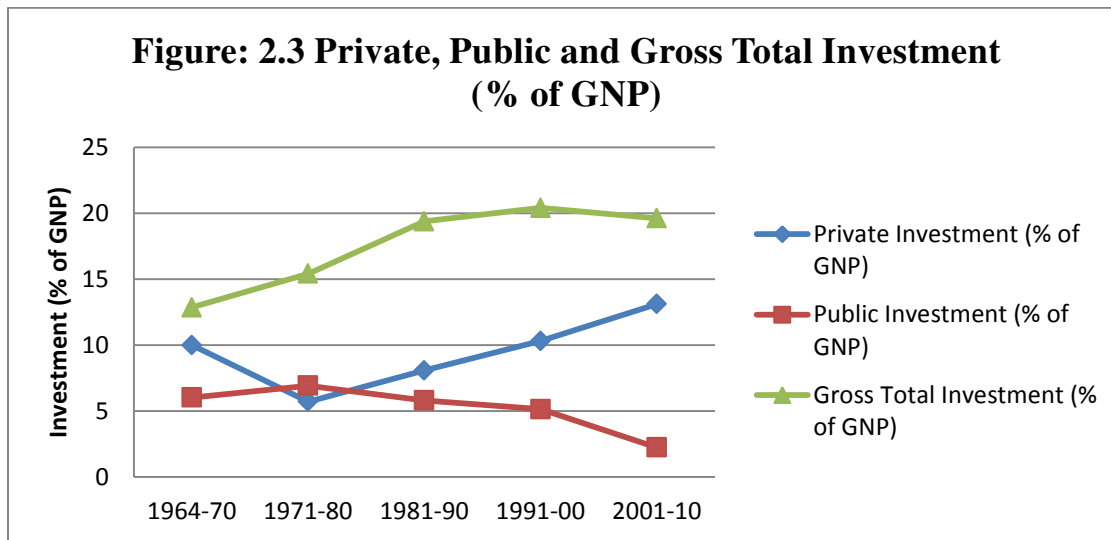
B. Savings and Investment

Savings and investment are the two important factors which play a significant role in uplifting the economy. Unfortunately in Pakistan savings and investments have always remained low as shown by the tables and figures below.

The private, public, gross and foreign direct investment in Pakistan as percentage of GNP (average %) are shown in table 2.3. It can be seen that in 1970s the private investment was decreasing. It decreased from 9% of GNP (1966-70) to 5.09% (1971-75) and then further decreased to 5.38% (1976-80). The average private investment is only 10.32% of the GNP (2009-13).

Public investment on the other hand has been decreasing since 1980s as shown by the figure 2.3. On average it was only around 5% of GNP in 1970s, increased in late 70s to average of 8.64% of GNP but since then it has decreased and stands at only 0.98% of GNP.

According to the table 2.3 and figure 2.3 the gross total investment, although increasing, is still very low in Pakistan. It was around 12% of GNP in late 60s and early 70s, 18% in 80s, increased in early 90s but again decreased during the late 90s to an average of 18 to 19% of GNP. It has increased in late 2000s to an average of 20% of GNP, now it is 14.98% (2009-13)



The reason behind low investment rates is lack of sufficient domestic resource mobilization in the country and surmounting fiscal deficit. The national and domestic savings has always remained low in the country as shown in table 2.3. It can be seen that during the 70s the investment cannot be matched by the national savings and hence to finance it the dependence on external resource inflow increased. One of the reasons can be political instability and the separation of East Pakistan during early 70s but the most important factor was the nature of investment. During that time period most of the investment was done in housing, transport and agriculture sector.¹¹

¹¹ Bakai, 1979

Table: 2.3 Financing Investment (% of GNP)

Year	Private Investment	Public Investment	Gross total Investment	FDI	National Savings	Public Savings	NERI
1966-70	9	5.74	12.14	9.44	–	–	–
1971-75	6.09	5.19	12.67	4.26	–	–	–
1976-80	5.32	8.64	18.16	1.51	13.25	1.73	4.91
1981-85	7.59	5.82	18.96	1.6	15.08	2.27	3.87
1986-90	8.55	5.78	19.8	2.54	15.56	1.39	4.24
1991-95	10.42	5.71	21.64	2.61	16.58	2.42	5.06
1996-00	10.21	4.56	19.15	2.8	14.36	0.82	4.8
2001-05	11.94	2.58	18.22	1.54	18.76	2.74	-0.98
2006-10	14.28	1.91	20.99	4.06	13.44	1.11	5.49
2009-13	10.32	0.98	14.98	–			

Source: Self calculated using data from various sources

National savings was 7.88% of GNP in the late 70s and it increased to only 11.38% of GNP in late 80s, which is still very low. On average the national savings is at maximum in 2005 at 17.82% of GNP but it still did not match with the standard of 20% of GNP in comparable economies. It has decreased again and it is 13.44% of GNP in 2010.

The public savings as a percentage of GNP have always been very low, on average only 1-2% of the GNP. The net external resource inflow was 4.91% in 1976-80, it increased to 5.06% of GNP in 1991-95 and has stayed around 5 to 3% of GNP with the exception of 2001-05, when it was -0.98% of GNP. The reason is that for the years 2002, 2003 and 2004 the net external resource inflow is negative, showing that resource outflow is more than the inflow. Interestingly, these are the years for which national savings is at its maximum i.e. average of 18% of GNP. The external resource inflow is used to fill the gap between domestic savings and the investment. For year 2005, the domestic savings almost matches the investment. But for year 2010, the gap between investment and savings increases once again and so does the external resource inflow as shown in the table 2.3. Two of the possible reasons, that have an effect on the savings rate, can be low real interest rate and lack or inefficiency of financial institutions. Some of the past studies show the evidence of both.¹²

C. Balance of Payment

The balance of payment situation in Pakistan has not been very strong either. Brief overview of the balance of payment since 1950 is given in the table 2.4. In 1950 the trade deficit was \$113.9 million and current deficit was \$98 million. In 1955 the trade account is surplus of \$53.7 million and current account deficit decreased to \$20 million. After that the trade and the current account

¹² Zaidi, S. Akbar (1999), Issues in Pakistan's Economy, Oxford University Press.

deficits increased until 1970. By 1975 the trade deficit had increased to \$1057.4 million and current account deficit to \$1397 million. This situation worsened in 1980, when the trade deficit and current account deficit stood at \$2345.1 million and \$3036 million respectively.

Table: 2.4 Pakistan's Balance of Payments (Million Dollars)

Items	1950	1955	1960	1965	1970	1975	1980
A-Trade Balance	-113.9	53.7	-129.8	-623.2	-383.7	-1057.4	-2345.1
Imports	275.6	205	517	1129	1071	2113.6	4740.3
Exports	161.7	258.7	387.2	505.8	687.3	1039	2364.7
B-Capital & Monetary Gold (Net)	95	-3	-25	381	399	1049	818
Private Capital Movements	1	4	1	2	-2	96	139
Direct Investment	1	7	3	37	78	15	68
Long-Term Loans	–	20	17	293	227	613	–
C-Current Account (Net)	-98	-20	-182	-633	-570	-1397	-3036
Invisibles (Net)	-134	-179	-35	-139	-109	-32	1375
Foreign Travel	-8	-14	-5	-9	-3	-18	18
Investment Income	-5	-1	-7	-40	-72	-98	-281
Government Expenditure	-103	-138	-5	-11	-23	-28	-79
Miscellaneous	-9	2	11	44	-3	16	74
D-Errors & Omissions (Net)	11	–	–	-48	8	15	16

Continued

In 1990 there is minor decrease in two deficits but in 1995 they increased once again. Similarly in 2002 the deficit is less than 1995 but increased in 2005 and increased further in 2010, when trade deficit is \$15163 million and current account deficit is \$3946 million.

The persistence of deficit in Pakistan can be attributed largely to the foreign trade pattern of the country. The terms of trade of the country are shown in table 2.5. It can be seen that although the term of trades improved from 1960 to 1965, they deteriorated after that until the early 70s. In the late 70s TOT improved again but only for a short time period, similarly TOT improved in 1995 but have been deteriorating since then.

Items	1985	1990	1995	2000	2005	2010	2013
A-Trade Balance	-3381.3	-1922	-2224.9	-1691.8	-6183.8	-15163	-11,264
Imports	5919.4	6941.1	10394.4	10309.4	20598.1	34710	29,597
Exports	2504.1	4964.7	8137.2	8568.6	14391.1	19290	18,333
B-Capital & Monetary Gold (Net)	294	1775	2476	-4179	685	178	-
Private Capital Movements	-	-	-	-	-	-	-
Direct Investment	70	216	442	472	-1622	-2172	512
Long-Term Loans (Official)	157	918	783	-663			-
C-Current Account (Net)	-4367	-4101	-4921	-4206	-1534	-3946	-1,028
Invisibles (Net)	1872	594	53	269	2546	7392	-
Foreign Travel	-28	-251	-288	-142	-995	-593	-
Investment Income	-506	-966	-1771	-2018	-2387	-3286	-
Government Expenditure	-	-	-	-	-	-	-
Miscellaneous	16	118	412	46	-	-	-
D-Errors & Omissions (Net)	-31	45	-75	503	-7	-62	-231

Source: Handbook of Statistics on Pakistan Economy, 2010

A. Human Development

The population of Pakistan was 33.74 million in 1951¹³ and it has increased to almost five-folds to 184.35 million in 2013. Pakistan is the sixth most populous country of the world and currently the population growth rate is estimated to be 2.05%. The population growth rate of Pakistan increased to more than 3% in the 70s and 80s. It started declining in the 90s and was 1.77% in 2005. On the other hand the crude birth rate and the crude death rate have also decreased since 1950s. In the table 2.6 demographic profile of Pakistan is given. It includes rural and urban population since 1950, labor force as percentage of population, crude birth rate, crude death rate and population growth rate of Pakistan. From the table it can be seen that the crude death rate of Pakistan has decreased from 15 per 1000 (1965) to 7.3 per 1000 (2011), whereas, the crude birth rate has decreased from 42 per 1000 (1965) to 27.5 per 1000 (2011). The CBR has decreased faster after the 1990s while the CDR has been decreasing slowly since the 1960s.

¹³ Handbook of Statistics on Pakistan Economy, 2010.

Table: 2.5 Indices of Unit Value of Exports and Imports & Terms of Trade Index

Year	Exports	Imports	T.O.T
1960	122.50	166.83	73.43
1965	127.75	140.14	91.18
1970	106.10	122.20	86.80
1975	409.72	614.45	66.68
1980	29.00	49.25	129.49
1985	30.35	54.21	116.43
1990	61.90	67.89	108.69
1995	88.52	105.49	119.19
2000	100	100	100.00
2005	177.79	233.40	75.19
2010	237.14	347.78	50.38
2011	280.72	401.12	52.42

Source: Handbook of Statistics on Pakistan Economy,2010 and WDI Data Bank

The labor force of the country and the rural and urban population is also shown in the table. The percentage of civilian labor force has decreased since the 1960s and that of non-civilian has increased until 2000s.

Standard of living, healthy life and access to education are the three dimensions which Human Development Index measured. It consists of Education Index, Health Index and Income Index. The Education Index is calculated using the mean years if schooling index and expected years of schooling index. If a country has attained perfect education then the Education Index will be 1. Its value is 0.8 or greater for most of the developed nations. In Pakistan Education Index has increased from 0.211 (1980) to 0.386 (2011). Regardless of the improvement the value is still very low and there is a need to invest more in education. Education is one of the major components in determining the well being and quality of life. In 2011 the literacy rate was 58% in Pakistan, 69% for male and only 46% for female.¹⁴

¹⁴ Pakistan Economic Survey, 2011-12

Table: 2.6 Demographic Profile of Pakistan

Year	Population (million)			Labor force (% of pop)				C.B.R. per 000 persons	C.D.R. per 000 persons	Pop GR %
	Total	Rural	Urban	Civilian Total	Civilian Employed	Civilian Un- Emp.	Non- Civilian			
1960	45.92	–	–	–	–	–	–	–	–	2.34
1965	51.99	–	–	33.76	33.28	0.48	66.24	42.00	15.00	2.56
1970	59.38	–	–	30.34	29.88	0.60	69.66	–	–	2.72
1975	68.48	–	–	29.5	29.00	0.50	70.50	–	–	3.00
1981*	85.09	60.92	24.18	27.57	26.72	0.85	72.43	–	11.80	3.40
1985	95.47	–	–	29.4	28.51	0.90	70.6	43.30	11.50	3.38
1990	109.70	–	–	–	–	–	–	40.60	10.60	2.92
1995	124.49	94.95	29.54	27.46	25.98	1.48	72.54	37.40	9.50	2.56
2000	139.96	93.63	46.13	28.97	26.70	2.27	71.03	25.00	8.00	2.28
2005	153.96	101.55	52.41	–	–	–	–	27.00	8.40	1.77
2010	173.51	110.46	63.05	–	–	–	–	28.4	7.3	1.8
2013	184.35	114.48	69.87	–	–	–	–	26.80	7.0	2.00

Source: handbook of statistics on Pakistan Economy, 2010, Pakistan Economic survey, 2011-12 sources

and World Bank Database

*Census Year

Health Index is calculated using life expectancy at birth data represented in the form of an index. The Health Index score has improved from 0.523 (1970) to 0.717 (2011). The life expectancy is 65.99 (2011). Although there is an improvement in the index but it has been very slow because of the external factors which affect the opportunities of healthy life. Pollution and environmental hazards remain one of the major factors. For example, the massive floods in 2010 caused a significant decrease in the health and nutrition expenditures, from Rs. 79 billion (2010) to Rs. 42

billion (2011). Total health and nutrition expenditures for the year 2013 are estimated to be Rs. 79.46 billion.¹⁵

Income Index represents GNI per capita (PPP) in the form of an index.¹⁶ It measures the living standard. The Income Index has improved from 0.366 in 1980 to 0.464 in 2011. It does not account for the inequality in income. If the inequality is considered then for year 2011 there is 11.1% loss in the value of this index.

The Human Development Index of Pakistan is shown in table 2.7. Pakistan's HDI in 2011 was 0.504 and the ranking as 145 out of 187 countries. It has increased from 0.359 in 1980. It shows on average 1.1% annual increase.¹⁷ Although the GDP growth rate and economic stability are very important but the quality of life is the most important indicator of progress. The HDI is a more comprehensive measure of well being than GDP. It takes into account three important dimensions of human development; healthy life, being educated and standard of living. In 2011 HDI was adjusted for inequality as well. For Pakistan the inequality-adjusted HDI is 0.346 (Human Development Report, 2011). It shows a loss of 31.4% in HDI score. It shows that if inequality is considered the situation becomes even more precarious as majority of the population is deprived of basic human needs such as access to health facilities and education.

**Table: 2.7 Education Index (E.I.) Health Index (H.I.), Income Index (I.I.)
& Human Development Index (H.D.I.)**

Year	E.I.	H.I.	I.I.	H.D.I.
1970	–	0.523	–	–
1980	0.211	0.597	0.366	0.359
1985	0.231	0.621	0.395	0.384
1990	0.241	0.642	0.411	0.399
1995	0.266	0.663	0.421	0.42
2000	0.288	0.68	0.423	0.436
2005	0.358	0.695	0.445	0.48
2006	0.358	0.698	0.45	0.483
2007	0.374	0.702	0.455	0.493
2008	0.378	0.705	0.455	0.495
2009	0.383	0.709	0.458	0.499
2010	0.386	0.713	0.462	0.503
2011	0.386	0.717	0.464	0.504

Source: <http://hdr.undp.org>. Data figures for all available years.

¹⁵ Pakistan Economic survey, 2011-13

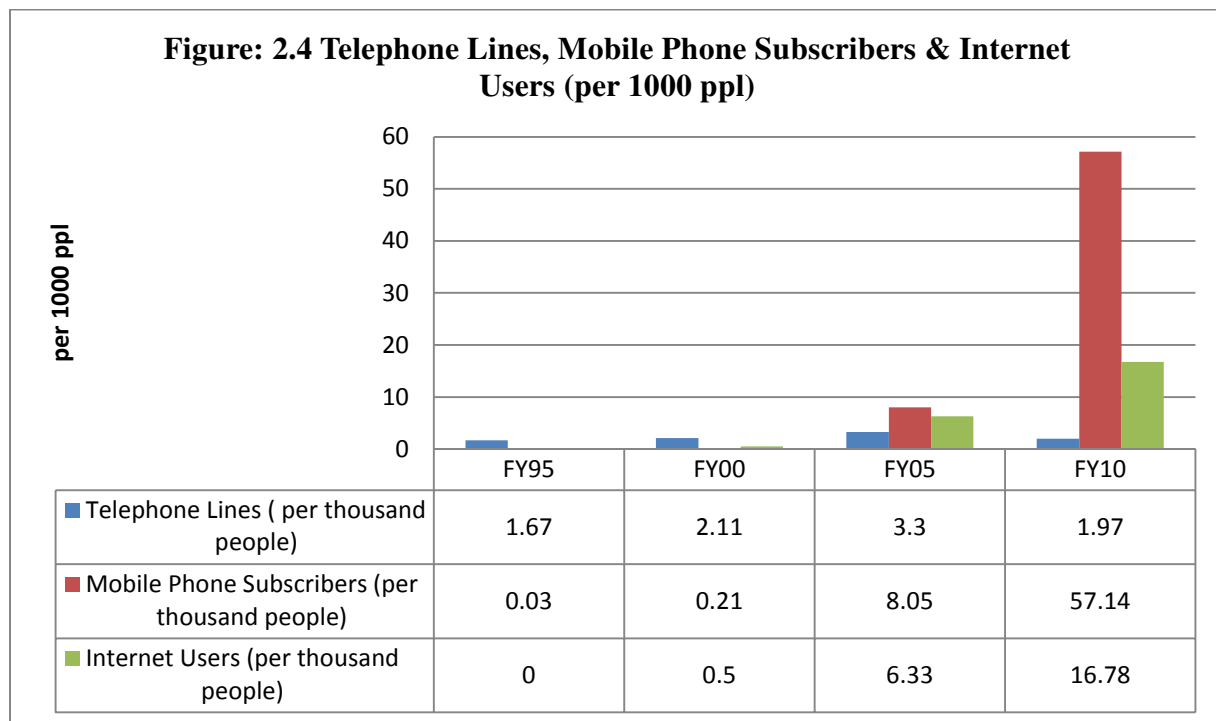
¹⁶ <http://hdr.undp.org/en/data/indicators/>

¹⁷ Recently the number of countries included as well as underlying methodology has changed, therefore, it might be misleading to compare the values with previously published reports (Human Development Report, 2011)

B. Infrastructure Development

Infrastructure is one of the fundamental requirements for the smooth functioning of the economy. Transport infrastructure is required to move good from one place to another, within and across countries. Electricity is required in homes and industries. Hospitals and schools are required to provide people with access to knowledge and better health services. Similarly, effective sanitation and water is necessary for the betterment of health and living standards in other words infrastructure facilitates the working of all sectors of an economy.¹⁸

The availability of communication facilities per thousand people is shown in figure 2.4. In the 2000s there has been an increase in the mobile phone and internet services. In 2010, as seen in the figure 2.4, mobile phone subscribers increased tremendously. There was also substantial increase in the internet users but the telephone lines have decreased.



Source: Pakistan Economic Survey, 2011-12 and World Bank Estimates

The total number of health establishments and educational institutions in Pakistan is given in the table 2.8. The health expenditure has only increased from 0.05% of GDP in 1950 to 0.54% of GDP in 2010.¹⁹ It shows that the availability of health and education facilities in the country is very low. Health facilities fall under one of the most important determinants of development for Pakistan as it is still in the first stage of development.²⁰

¹⁸ The Pakistan Infrastructure Report, 2011.

¹⁹ Handbook of Statistics on Pakistan's Economy, 2010

²⁰ Jan, Sajjad Ahmad *et al.*, 2012.

Insufficient energy supply is another hurdle in the development of the economy. It adversely affects the industrial sector and the effect of energy consumption and economic growth is well established in the literature, furthermore, it has been found that electricity consumption leads to economic growth, although the economic growth caused total energy consumption.²¹

The five year average growth rates of electricity generation capacity and total generation are given in table 2.8. Even after taking 5-year averages the growth rates do not show much improvement. In the 50s the electricity generation capacity grew at 14% on average and the total electricity produced increased by 28.82%. The electricity generation capacity growth rate decreased in the late 50s and further decreased in the 60s, whereas the total electricity generation growth rate decreased in late 50s but increased again in the early 60s. After 1970 the growth rates of both electricity generation capacity and total electricity generated have been very low. In the late 2000s the electricity generation capacity and total generation have decreased and the average growth rates are only 3.09% and 2.75% (2010).

Table: 2.8 Educational institutes, Health Establishments, Transport and Electricity Generation Growth Rates (Average %)

Year	Educational Inst.	Health Estab.	Roads (total)	Railways (Route)	Air Traffic (Flown)	Generation Capacity	Total Generation
1950	12136	1218	25303	8506	257		
1955	16625	1515	30735	8533	2721	14.59	28.82
1960	21210	1921	30854	8524	8458	25.17	13.07
1965	37330	2628	35008	8534	18905	13.04	24.43
1970	47396	2954	31673	8515	28646	15.08	14.36
1975	60105	4718	38632	8811	28183	6.46	7.49
1980	66573	5931	95660	8823	67456	10.8	9.33
1985	85447	7926	118471	8775	47562	9.04	9.79
1990	135455	10398	162345	8775	62330	6.93	9.99
1995	163375	10824	207645	8775	72339	8.15	6.77
2000	193364	11487	248340	7791	76212	6.31	3.66
2005	207306	12637	258214	7791	80699	2.19	6.7
2010	231692	12948	260760	7791	81588	3.09	2.75
2011	231052	12985	259463	7791	84898		

Source: 50 Years of Pakistan in Statistics, 1997-98, Pakistan Economic Survey, 2011-12 and Handbook of Statistics on Pakistan Economy, 2010

Transport facilities are just as important for the economic growth and human development. It facilitates the sustainable economic growth (Phang, 2003). There are many reasons for this, for example, the transportation infrastructure can be viewed as a direct input in the production process and sometimes as an unpaid factor of production, it can make other existing inputs more

²¹ Aqeel, A. and Butt, M. Sabihuddin, 2001.

productive, for instant, well developed roads network can reduce the transportation cost by facilitating the transport of good to the markets in less time. It can also affect economic growth by influencing the aggregate demand and realizing the goal of providing people with access to education and health facilities. In addition to all this it can also attract resources from other region thus proving that transportation infrastructure is crucial for economic development.²²

The availability of roads, railways and air traffic transport facilities in Pakistan are also shown in table 2.8. The railways (route) has decreased since 1980s, whereas, the roads (lengths) and air traffic (flown 000) have increased since 1950s. The quality of these facilities cannot be determined from this data. It is also important that the roads networks and railway networks are well designed to make it more productive.

C. Environment

One of the important dimensions of sustainable development is the environmental sustainability. The health concerns arise if there is inadequate pollution control. Similarly, availability of natural resources is important for the economic growth. It is important to preserve these resources and manage them to avoid costly shortages e.g. if surface water management is improved then water shortage can be mitigated. As the country is facing water scarcity, which is affecting agriculture sector as well as households' consumption, the achievement of sustainable development will be a challenge.²³ There is a need to manage the existing water sources in a way that will ensure sustainability.

Pakistan is among the countries with lowest forests area (ranking 113 among 140 countries)²⁴. The forest area is only 2.19% of the total land area (2010) as shown in table 2.9. Another environmental concern i.e. population density has increased almost four folds to 225.19 persons per sq. kilometer in 2010 from 54 persons per sq. kilometer in 1960. CO₂ emission has also been increasing and was 0.86 in 2005. Natural resources rents as percentage of GDP are also given in the table 2.9. In 1970 it was 0.80% of GDP, it increased in 70s and early 80s but decreased after that and was 3.37% of GDP in 1985. It decreased to 2.49% of GDP in 1995 after which it increased and was 7.85% of GDP in 2005 but has decreased since then, 3.92% (2005). Infrastructure development can improve the management of environmental resources.

3. Sustainable Development In Pakistan

Sustainable development has become more important with rapid globalization and a number of indices are developed for its measurement. Due to its multidimensional nature it is not possible to devise any one comprehensive index which can be considered perfect, some might give

²² Pradhan, Rudra P. and Bagchi, Tapan P. (2012)

²³ Compendium of Environment, 2010

²⁴ Compendium of Environment, 2010

varying results, therefore, based on the scope of the study we can utilize the index most appropriate for fulfilling our objectives.²⁵

Table: 2.9 Pakistan’s Environment (Selective Variables)

Year	Forest Area	Population. Density	CO2 Emis.	N.R.R.
1960		54	0.31	–
1965		67.45	0.38	–
1970		77.03	0.41	0.80
1975		88.84	0.34	2.89
1980		104.42	0.40	3.93
1985		123.85	0.49	3.37
1990	3.28	145.09	0.61	3.56
1995		165.20	0.66	2.49
2000	2.74	187.48	0.74	4.45
2005	2.47	205.80	0.86	7.85
2010	2.19	225.19	–	3.92
2011	2.13		–	

Source: World Development Indicators and Asian Development Bank, Database

Variables: Forest Area is as percentage of total land area, CO2 Emis. is metric ton per capita emission, N.R.R. is total natural resources rents as percentage of GDP,

There are numerous studies available, where the authors have established a relationship between sustainable development and capital stock. The rationale behind it is that for development to be sustainable there should be constant real consumption over time, therefore, according to Hartwick (1977, 1978a, 1978b, 1990) the countries which rely heavily on non-renewable resources, such as oil, must re-invest the rents earned from the exploitation of these resources. Solow (1986) took Hartwick’s work further, showing that “Hartwick rule” implies a constant underlying capital stock. Hicks (1946) and Page (1977) had also done similar work, establishing “constant capital stock rule”. Based upon their work the Hicks-Page-Hartwick-Solow rule as an indicator for sustainable development can be derived as. Pearce and Atkinson’s (1992, 1993) studies show.

²⁵ Nourry (2008)

$$Z_1 = \left(\frac{S}{Y}\right) - \left(\frac{\delta_m}{Y}\right) - \left(\frac{\delta_n}{Y}\right) \dots (1)$$

And alternatively it can be;

$$Z_2 = S - \delta_m - \delta_n \dots (2)$$

Where, Z is sustainability index, S is the savings, Y is income and δ_m and δ_n denote depreciation of man-made capital and depreciation of natural capital respectively. The environmental depreciation is calculated using data of carbon dioxide damage, energy depletion, mineral depletion, natural resource depletion, net forest depletion and particulate emission damage. The man made capital depreciation is the consumption of fixed capital.

According to the weak sustainability criteria if

$$Z_1 = Z_2 \geq 0 \dots (3)$$

Then development is sustainable.

The above criterion of sustainable development is the “weak sustainability” criterion. The capital stock can be man-made (i.e. machinery, roads etc), natural resources and human capital and the weak sustainability criteria assumes that these components of capital stock can be substituted with each other. Another assumption is that human capital and technology remains constant. The assumption of substitutability of the capital stock is consistent with environmental economist’s view but ecological literature denies it, therefore, it is limited in scope.²⁶ The reasons behind the imperfect substitutability of man-made and natural capital are;

- The rent from exploiting natural resources is rarely fully re-invested in man-made capital as some of it is consumed, thus, contributing to environmental degradation.
- There are certain natural resources which irreversible, once depleted they cannot be replaced (i.e. extinct species). Similarly man-made capital might never be able to substitute ozone layer.
- Another issue is that for making man-made capital natural capital is required, this can very well reduce the net capital.
- Lastly, human knowledge of “ecological processes” is not complete, this can hinders the substitution, furthermore, it might be considered immoral in cases where substitution requires destruction of irreplaceable natural resource.²⁷

Another drawback of this criterion is taking technology constant; whereas, for sustainability technological change must exceed the population growth (Pearce and Atkinson’s (1992, 1993)).

²⁶ For more details see Pearce and Atkinson’s (1992, 1993)

²⁷ Cistulli, Vito (2002). Environment in Decentralized Development: Economic and Institutional Issues.

$$\lambda \geq n \dots (4)$$

The measurement of technology can pose a problem. There are various recent studies on economic growth which have taken technology as an endogenous variable rather than exogenous.

The countries can import natural resources via international trade and in those cases this rule will be misleading. A more comprehensive rule can be derived overcoming these draw backs. Proops and Atkinson (1998) have presented a weak sustainability criterion for an open economy but this issue effects strong sustainability criterion more than it does the weak criterion. A strong sustainability criterion does not assume the substitutability of the capital, thus implying that natural capital stock remains either constant or increase over time. But this will in turn imply that the future generations are better off (because technology is not constant) then the present generation. According to the definition of sustainable development this is not a necessity, therefore, as mainstream economics suggests, the weak sustainability criterion can be used to measure the sustainability of an economy, hence, it can be concluded that if equation (3) is being fulfilled then according to weak sustainability criterion, the development is sustainable.

Table 3.1 Sustainable Development Index

Year	S	δ_m	δ_n	Z_2
1973	10.61437716	12.28	4.55	-6.21
1975	5.927178848	9.8234	5.05	-8.95
1980	12.69889053	8.7845	5.70	-1.79
1985	11.96078892	8.5279	5.10	-1.67
1990	13.60978358	9.3783	7.14	-2.91
1995	14.2328995	10.0052	5.79	-1.56
2000	16.01759988	8.397	8.36	-0.73
2005	17.12608356	8.0985	12.07	-3.05
2010	13.30344038	8.4743	7.41	-2.58

Source: World Development Indicator, Data Bank and Pakistan Economic Survey, 2011-12

According to the above table it can be seen that development is unsustainable in Pakistan as it fails to meet the weak sustainability criteria and Z_2 is less than zero for all the selected years.

Conclusion

The economic growth and development experience of Pakistan since 1950s is analyzed and based on this analysis we can deduce that Pakistan has failed to achieve macroeconomic stability and prosperity, especially in regard of building physical and human capital. The economy has shifted from agricultural to services sector economy with 57.7% share in the GDP. The

agricultural growth rate has remained low, only around 3% on average in 2000s. This indicates that there is a need for agricultural reforms so that the country can tap into its potential. Another reason to focus on this sector is that most of Pakistan's exports include agricultural commodities and it is seen that the trade deficit is one of the main contributor to overall budget deficit. As the terms of trade of Pakistan are deteriorating, therefore, there is a need to improve agricultural sector so that the trade deficit and hence budget deficit can be reduced. Another constraint on agriculture growth rate is the availability of water resources. There is a need for surface water management infrastructure to avoid shortages.

Industrial growth has also been slow since 1970s. It is only around 5% on average in recent years. There is insufficient energy supply and low investment which has been a hindrance in achieving high growth rates. Low savings rate, unmanageable budget deficit and lack of domestic resource mobilization are among few of the difficulties the country is facing. Due to this Pakistan has failed to sustain economic growth. As shown in the table 3.1 the GDP growth rate has structural breaks with periods of high growth rate of 6% or more and low growth of rate 2% or less. Same trend can be seen in the growth rate of GDP per Capita. The literature review revealed that among the variables which sustain economic growth, domestic savings, export growth and degree of equality of income distribution are also influential.²⁸ Considering this we can see from above discussion that the persisting low domestic savings, increasing trade deficit and inequality of income distribution has contributed to the unsustainability of economic growth in the country.

In addition to this the human development has also been unsatisfactory. The increasing population and the lack of proper resource management have resulted in unaffordable increase in energy consumption and degradation of environment. The insufficiency of financial resources has caused low investment in human capital in the form of education and health. The HDI is only 0.504, showing that the living standards are low in Pakistan. There is insufficiency of sanitation system and water supply system in the country. In addition, the decreasing forest area and increasing CO₂ emission and population density also pose serious environmental issues.

The literature reveals that the most important determinants of a country's prosperity are physical and human capital, trade openness, macroeconomic stability, technological progress, institutions and geography.²⁹ To achieve sustainable development Pakistan has to improve both economic and social infrastructure so that some of the major issues facing by the country can be tackled including human capital in the form of health and education, insufficient energy supply, low agriculture growth rate, deteriorating terms of trade, budget deficit and environmental degradation e.g. deforestation, pollution and water scarcity etc.

²⁸ For details see literature review.

²⁹ Chani, M. I. *et al.*(2011).

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