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Education is essential for economic growth in Pakistan

Kiani, Adiqa

School of Economic Sciences, Federal Urdu University of Arts, Science and Technology, Islamabad, Pakistan.

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The role of enhanced schooling, a fundamental part of most development strategies, has become contentious because spreading out of school achievement has not assured improved economic setting. This paper reviews the role of education in promoting economic interests that spotlight the role of educational eminence. Much evidence from developing countries suggests that education has strapping persuasion on economic expansion. The main purpose of this study was to look at the consequences of some of the key macroeconomic variables on Pakistan’s economic growth during 1980-2009 taking four different education levels including Primary, Middle, High school, and other school enrollment as a ratio to total employed labor force. Other variables include exports, Basic health unit (BHUs), as main macroeconomic variables. Primary education is well thought-out to be an important precondition for accelerating growth.

Key words: Primary school enrolment, secondary school enrolment, literacy rate, economic growth.

INTRODUCTION

Education is essential to the social and economic development of a country. It plays an imperative role in capacity building and hastens the growth of whole economy through skills, knowledge and creativity. With better education poverty and income inequality can be reduced, health status can be improved and good governance can also be implemented for better policies. The many-sided impact of education formulates it an essential component for policy outline. Most of the world’s people living in developing countries require to restructure their education in order to enhance their productivity in many sectors of the economy through providing highly skilled laborers and dealing with their development needs for speedy industrialization, which is also the need of the hour. The government is doing solemn attempts to perk up the quantity and quality of education through provision of better educational facilities within the minimum required time. The overall literacy rate for 10 years and more was about 55 % for the fiscal year 2006-07 compared to 45% during 2001-02, showing only 10 percent rise in literacy rate for only six years [Pakistan Integrated Household Survey (PIHS) 2006-07].

To achieve sustainable growth and also development in Pakistan, it is imperative to continue assistance in poverty reduction and develop social and economic infrastructure; more importantly education. Over the years, the unsustainable economic growth is worrisome in Pakistan. The factors responsible for this situation were unfavorable economic growth, political instability, negligence in education sector, worse law and order situation and poor attraction for the foreign investors. The unsustainable economic growth can be related with sharp rise in inflation, escalating fiscal deficit, mounting foreign debt and debt servicing, weak foreign demand for low quality products in Pakistan, stumpy level of human and physical capital, adverse weather conditions, and political flux along with many other factors. It is beyond doubt that education is a significant contributor to economic prosperity. To achieve a strong growth, education should be given top priority more particularly in developing
The most significant impact of the education can be witnessed into two ways in developing countries. Firstly, education will provide people with power of decision-making which could instill gender equality. Secondly, educating the people of developing country means to make more sustainable choices which will create a better world to live in.

Primarily, the linkage between economic growth and education, distribution of income and reduced poverty are well-recognized. Knowledgeable and skilled people through better education expect more from the society and need to have high income and better employment opportunities. This applies to all the households at national level. Globally, economic inter-dependence is rising and knowledge-based education for economic growth has also increased the quality on education and the cost allied with deficits of education.

Economic growth and education entangle each other. More and more access to education has definitely led to high economic growth rates. How much education contributes to economic growth depends not only on skilled labor but on the application of their knowledge. There is much evidence shown in literature that development models and rigidity in labor markets do not errand fast economic growth, even when the state offers broad access to schooling and high quality education (under socialist rules in Eastern European countries). Hannum and Buchmann (2006) stated that "education is organized as a basic human right, and better education improves people’s welfare". Education is an instrument of development, and it enhances skills of work and life like confidence and friendliness. These skills in entity uphold economic growth in an economy.

In conclusion, it is observed the countries that invested more in education achieved sustained economic development than those who invested less. Education by itself does not warrant thriving development, as the Indian states of Kerala and West Bengal, former Soviet Bloc, the Philippines, Sri Lanka have shown. Also not equal access to and standards of education tend to have a negative impact on per capita income in most of the developed and developing countries. Two-way causality occurs between education and economic growth. If better education leads towards faster economic growth, then investing in education pays for them in the long run, which indirectly leads to reduce poverty. Some prominent economists have analyzed the relationship between education and economic growth and viewed that education is strong interpreter of economic growth. In this context, we have also analyzed the relationship between education and economic growth for Pakistan during last thirty years (1980-2010).

The objective of the study is to explore the relationship between education and economic growth in Pakistan during (1980-2010). The programs launched in developing countries for the uplift of education have shown that education is major source for the economic development in their countries. Furthermore, it also aimed to provide a comprehensive and critical overview of the brunt of education on economic growth in Pakistan during which would be a source to provide a base for decision maker for future planning.

EDUCATION IN PAKISTAN

Education covers both the learning and teaching, proper demeanor, and procedural aptitude. It basically emphasizes more on mental, moral and aesthetic development through knowledge and skill. It has been argued that high rates of education are essential for countries to be able to achieve high levels of economic growth. In literature, it has been shown that poor countries grew faster than rich countries because they adopted cutting edge technologies already tried and tested by rich countries. Few economist also argued that if the gap between the rich and poor is too large in education, then transfer of technologies between them becomes difficult, which is main driving force for them, and in this way most of the economies of the world’s poorest nation stagnate.

Brief overview of four levels of education

Education in school in Pakistan is divided into four levels: primary level (from grade one to five), middle (from grade six to eight), high (from grade nine and ten, leading towards Secondary School Certificate), other (arts, science and vocational schools). Different categories of these four levels of education can be shown in a diagram in which comparison of Madras and Modern school system is given (Figure 1).

Education and Economic Growth (EEG) Causality

Positive EEG relationship is required and this relation is consistent in most parts of the economies. The developments in the economic theory, the role that education can play in generating economic growth and implications likely to be proposed for education will be discussed in other chapters of the thesis. If we shed light on the previous Pakistan economic performance we can say that the performance was not satisfactory due to some inevitable factors such as macroeconomic instability droughts, untenable debt, and inadequate law and order situation. Overall literacy rate in Pakistan has improved one percent from 56 to 57 percent. It is evident from the data that literacy is relatively better and high in urban areas than in rural areas (from 74 to 48% respectively), and furthermore high rate for men as compared to women (from 69 to 45% respectively). Though the female literacy has improved over time, progress is uneven across the provinces. Literacy rate in Punjab is 59%
Figure 1. Comparison of Madrasah System and Modern System.

Figure 2. Comparison of Real GDP growth rate and literacy rate (%).

Sindh, 59%; Pakhtunkhwa, 50% and Balochistan, 45%. The literacy rate of Sindh and Khyber Pakhtunkhwa has improved considerably during 2007-08 to 2008-09. According to the data, the overall school attendance, as measured by the Net Enrolment Rate (NER), for 2008-09 was 57% as compared to 55% in 2007-08.

Table 1 shows that the human capital measures are grown positively in Pakistan during the period 1980-2010, whereas public spending on education and health are poorly administered. It is time for policy maker to allocate more funding for education and health so that targets can be achieved within specified time period.

Table 2 shows literacy rate in Pakistan increases gradually throughout the study period, while GDP fluctuates and does not show any particular trend.

It is evident from Figure 2, that relationship between education and GDP is positively correlated. As the level of education rises, the GDP shows gradual but consistent growth between 1980 to 2007. Moreover, graphs indicate that there is hardly any decline in GDP during this period of time.

**Relationship between four indicators of education and growth rate of GDP (%)**

In Figure 3, we can see a positive relationship between primary school enrollment as a ratio to total employed labour force and GDP growth rate. After examining the trend of both variables it is more likely to say that in general there is an upward trend.

Growth rate of GDP and Middle School ratio are shown in Figure 4. We can easily say that middle school ratio is also positively related to the growth rate of GDP, but the gap between these two variables is wider than primary education and GDP growth rate.

Figure 5 shows the gradual increase in higher education measured as the ratio to total employed labour force; there is also wide gap between higher education level and GDP growth rate. As an indicator of educational attainment this measure is obviously unsatisfactory.

To form a link between education and economic performance, in Figure 5 we plot growth rate of GDP and other educational institutions. This picture is very clear, that the other educational institutions are not strongly associated with the growth rate of GDP. During the thirty seven years, 1980-2010, other level of education does not show any growth and very close to zero throughout the study period. In conclusion, comparing the figures (2 to 6), as the education level rises, gap between the corresponding education level and GDP growth rate is widening, which also indicates two important points. Education level other than primary is not improving overtime and government's
Figure 3. PSE/LF and GDP growth rate relationship.

Figure 4. Relationship between MSE/LF and Growth Rate of GDP.

Figure 5. HSE/LF and growth rate of GDP relationship.

Figure 6. Relationship between OSE/LF and GDP Growth Rate.
investment in higher level is not very promising. Secondly, even education level is not improving over time but growth rate with same fluctuation is improving which means that variables other than education are also very important.

**LITERATURE REVIEW**

Sawada (1997) explored a distinct gender difference in education in rural households of Pakistan using household panel data for the period of (1986-87 to 1990-91). He estimated regression model using variables entrants and dropouts etc. He implied that households in Pakistani villages might be credit constrained. Investment in the education of girls may not yield much economic returns for parents, due to various customs of the society.

Temple (2000) examined the importance of education to economic growth. He viewed that there are greater benefits of education that result in high productivity and positive influence on economic growth. Moreover, he emphasized that education has central role in the developments of different sectors of economy.

Lattimore (2002); Kerr (2001) revealed a strong link between education and economic growth for New Zealand during (1952-2002). Before the introduction of “Knowledge Wave” in New Zealand the economic progress was falling down and living standards also declined. By adopting the education policies and making more investment in education sector has increased the GDP growth rate by six percent in New Zealand.

Stevens and Weale (2003) determined a relationship between education and economic growth through the parameters of the inefficiency model. They used micro and macro level data. At micro level, if individuals get higher education they will also receive higher income. However at macro level, study showed similar percentage of returns ranging from 6-12 percent per annum.

Teles and Andrade (2004) developed the relation

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1. Try to increase the quantity of economic resources, reallocate our resources to more valuable uses and to increase the skills of the workforce.
between public investment in basic education and economic growth. They used five paired hypothetical models. They concluded that basic education affects decision of agents for lifetime, and the significance of link between public spending on education and economic growth can be altered by modifying the composition of government spending based on basic and higher education.

Babatunde and Adefabi (2005) explained the long run relationship for Nigeria between education and economic growth during 1970 to 2003. The Johanson co-integration technique and the vector-error correction were applied to determine long run relationship. The co-integration results showed that long run relationship exists between primary school enrollment and tertiary school enrolment; also such relation exists among outputs per worker. They also tried to develop long run relations among the other model of the series. Vector Error Correction (VEC) revealed a well-educated labor force influenced the economic growth significantly into two ways; one, using as a factor in the given production function and two through the total factor productivity.

Afza and Nazir (2007) emphasized the role of human resource management (HRM) as a best tool for the improvement of the economic competitiveness particularly in Pakistan. Pakistan has yet not benefited substantially from the opportunities of the world markets. It uses rural and urban education as a basic tool for obtaining long-run competitiveness of human resources and for sustainable. Abbas and Foreman-Peck (2007) also investigated the relationship between growth rate of human capital and economic growth using time series data for Pakistan during 1960 to 2003. Their findings showed that human capital accounted for about 40 percent of the increase in GDP per head. Moreover, they also expected large value of elasticity of education endowment in Pakistan. They suggested based on their results that poor quality education, stemming from underinvestment, may erect smaller impact than expected.

Papademos (2007) argued that education played a significant role in the development of financial markets in Europe. He viewed that education can further contribute with the implementation of necessary measures to enhance the quantity and quality of education in Europe. Obradovic (2009) in his study established a relationship among education, human capital and economic growth. Education itself represents one of the primary components in human capital, which is an important factor in modeling the economic growth. The role of education is not only to educate people but also create and develop person’s capability for innovations, in order to provide effective support to the processes of economic development. Moreover, he added that education yield can be defined as a discrepancy between the increases in wage that one worker receives and the bases of one year of schooling compared to others.

The above revealed the importance of education for the development of an economy, particularly for Pakistan. With proper human resource management, economic competitiveness can also be improved in Pakistan. Table 2 shows that overall literacy does not show any particular trend with GDP growth rate in Pakistan. Therefore, our main objective is to explore the relationship of different education levels with GDP growth rate of Pakistan. Which level of education e.g. primary, secondary, tertiary or higher education level does play any vital role in enhancing GDP growth rate during the entire period of the study?

### METHODOLOGY AND DATA

A simple growth model that captures the impact of some of the key macroeconomic variables including education at different levels on output growth in Pakistan was used. The main advantage of using this model is that it is easy to use and elasticities can be measured simply using the following model.

The model is specified as:

\[ Y = \alpha_0 + \alpha_1 X_1 + \alpha_2 X_2 + \alpha_3 X_3 + \alpha_4 X_4 + \alpha_5 X_5 + \alpha_6 X_6 + \alpha_7 X_7 + \alpha_8 X_8 + \mu_i \]

Taking log of equation (1) on both sides, we obtain,

\[ \log Y = \log \alpha_0 + \alpha_1 \log X_1 + \alpha_2 \log X_2 + \alpha_3 \log X_3 + \alpha_4 \log X_4 + \alpha_5 \log X_5 + \alpha_6 \log X_6 + \alpha_7 \log X_7 + \alpha_8 \log X_8 + \mu_i \]

After taking log we get,

\[ y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \beta_7 x_7 + \beta_8 x_8 + \mu_i \]

Denoting,

\[ \log Y = y \]
\[ \log \alpha_0 = \beta_0 \]
\[ \log X_1 = x_1 \]
\[ \log \mu_i = \mu_i \]
\[ \alpha_i = \beta_i \]

Where,
\[ y \] is log of real gross domestic product
\[ x_1 \] is log of primary school enrollment as a ratio to total employed labour
\[ x_2 \] is log of middle school enrolment as a ratio to total employed labour
\[ x_3 \] is log of high school enrollment as a ratio to total employed labour
\[ x_4 \] is log of other school enrollment as a ratio to total employed labour
\[ x_5 \] is log of exports as a percentage of GDP
\[ x_6 \] is log of basic health unit
\[ x_7 \] is log of literacy rate
\[ x_8 \] is log of labour force participation
\[ \mu_i \] is error term

Many researchers [Obradovic 2009; Afza and Nazir 2007; Babatunde and Adefabi 2005] argued that the quality of schooling is more important than the quantity measured, for example, attainment years. The most commonly used indicators for education are school enrollments as ratio to total employed labor force, adult literacy rate, exports as a percentage of GDP, labour force participation and health. In this study, we have taken the ratio of...
primary schools enrolment \((x_1)\), middle schools enrolment \((x_2)\), high schools enrolment \((x_3)\), and enrolment of other educational institutions \((x_4)\) to total employed labor. The main dependent variable GDP is normalized by inflation. The main advantage of normalizing this variable is to eliminate certain econometric problems\(^5\). Foreign trade variable used in this study namely, exports as percentage of GDP \((x_5)\) to see the impact of openness on economic growth of Pakistan’s economy. Health \((x_6)\), literacy \((x_7)\) and overall labour force participation \((x_8)\) indicators are also included in the model to make a decision in which variable has strong effect on the GDP growth rate in Pakistan (Table 3).

First of all, unit root test is applied to see the stationarity of the data, that at which level they are stationary. Table 4 shows the results of unit root test; using null hypothesis of data is stationary at 5 % level of significance, against the alternative they are not stationary. Table 5 shows that all variables are stationary at the 1\(^{st}\) difference at 5% level of significance.

### RESULTS AND DISCUSSION

This section explains the results of an empirical investigation of the factors that influenced economic growth in Pakistan during the period 1980-2010. The results emerged from the linear regression model for annual growth rates of real GDP as reported in Table 5. The over all results showed satisfactory that implies the estimated coefficient’s signs are as expected and they are statistically significant at the traditional levels of confidence. A summary and more detail of the results of the explanatory variables are given below.

**Macroeconomic determinants of growth**

**Four main indicators of education**

Table 5 indicates that real GDP growth rate is positively related to primary school enrolment \((x_1)\) taken as a ratio to total employed labour force \((PSE/LF)\). The estimated coefficient of \((x_1)\) is 2.67 which implies that one percent increase in primary school enrolment-labour force ratio on average the real GDP goes up about 2.67 percent per year. This finding supports the idea of Barro (1991), Becker at al. (1990) and Barro and Becker (1989), who argued that primary school enrolment-labour force ratio leads to higher economic growth. Similarly, the estimated coefficients of enrolments in high schools \((x_3)\), and other educational institutions \((x_4)\) as ratios to total employed labour force are statistically significant. The result shows that estimated coefficients of \((x_3)\) are 2.80 which depicts that one percent increase in high school enrolment raises the real GDP growth rate on average by 2.8 percentage points per year which shows that real GDP growth is very responsive to high enrolment rate. Whereas the estimated coefficients of enrolments in other educational institutions \((x_4)\) as ratio to total employed labour force are significant at 10 % level of significance as well. Moreover, estimated coefficient of middle schools enrolment \((x_2)\) as ratio of labour force is also statistically significant.

**Exports**

Two main variables of foreign trade are namely exports and imports. In this model, we have used export variable \((x_5)\) only as percentage of gross domestic product which represents openness of Pakistan economy. The foremost reason for taking export variable was to check that how much export variable will affect the growth of real GDP in Pakistan. The result reveals that the estimated coefficients of exports \((x_5)\) is 0.03, implying that one percentage increase in export as percentage of GDP raises real GDP by 0.03 percent per year. It is obvious from these findings that export \((x_5)\) has positive but not very high effect on real GDP in Pakistan. In addition, technological advancement, from access to goods and services, embodied technology, and discovery of new natural resources (which can be exported) may raise output growth because it shifts the production

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5 To eliminate the effects of change in base year

### Table 3. Summary of the variables.

<table>
<thead>
<tr>
<th>Code</th>
<th>Variables</th>
<th>Definition</th>
<th>Units of measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>Real GDP</td>
<td>Gross domestic product is divided by inflation.</td>
<td>Million Rs.</td>
</tr>
<tr>
<td>(X_1)</td>
<td>PSE/LF</td>
<td>Primary school enrollment as a ratio to total employed labour force.</td>
<td>Percentage</td>
</tr>
<tr>
<td>(X_2)</td>
<td>MSE/LF</td>
<td>Middle school enrollment as a ratio to total employed labour force.</td>
<td>Percentage</td>
</tr>
<tr>
<td>(X_3)</td>
<td>HSE/LF</td>
<td>High school enrollment as a ratio to total employed labour force.</td>
<td>Percentage</td>
</tr>
<tr>
<td>(X_4)</td>
<td>OSE/LF</td>
<td>Other school enrollment as a ratio to total employed labour force.</td>
<td>Percentage</td>
</tr>
<tr>
<td>(X_5)</td>
<td>Exports</td>
<td>Exports of goods as a percentage of gross domestic product.</td>
<td>Percentage</td>
</tr>
<tr>
<td>(X_6)</td>
<td>BHUs</td>
<td>Basic health unit.</td>
<td>Number</td>
</tr>
<tr>
<td>(X_7)</td>
<td>Literacy rate</td>
<td>Literacy rate.</td>
<td>Percentage</td>
</tr>
<tr>
<td>(X_8)</td>
<td>LFP</td>
<td>Labor force participation rate.</td>
<td>Percentage</td>
</tr>
</tbody>
</table>

Source: 50 Years of Pakistan Economic Survey (various issues).
possibilities frontier out, exogenously. So, this would suggest that, in this regression model, the export variable seems to be picking up effects which run through the level of total factor productivity.

### Health

The estimated coefficient of \( x_8 \) (Basic health units (BHUs) as shown in Table 5, is 0.01, which indicates that
Table 5. Regression results using OLS technique.

<table>
<thead>
<tr>
<th>Explanatory variables</th>
<th>Estimated coefficients</th>
<th>t-statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-3.09**</td>
<td>-1.73</td>
</tr>
<tr>
<td>$x_1$ (Lagged 2 Years)</td>
<td>2.67**</td>
<td>3.32</td>
</tr>
<tr>
<td>$x_2$ (Lagged 2 Years)</td>
<td>-3.15**</td>
<td>-2.39</td>
</tr>
<tr>
<td>$x_3$ (Lagged 2 Years)</td>
<td>2.80**</td>
<td>2.86</td>
</tr>
<tr>
<td>$x_4$ (Lagged 2 Years)</td>
<td>0.26</td>
<td>1.11</td>
</tr>
<tr>
<td>$x_5$</td>
<td>0.04</td>
<td>0.06</td>
</tr>
<tr>
<td>$x_6$</td>
<td>0.00</td>
<td>0.01</td>
</tr>
<tr>
<td>$x_7$</td>
<td>2.13**</td>
<td>4.32</td>
</tr>
<tr>
<td>$x_8$</td>
<td>2.29**</td>
<td>2.02</td>
</tr>
</tbody>
</table>

**denotes statistical significance at 5%. Dependent Variable: Real GDP growth rate. $R^2 = 0.986$; Adjusted $R^2 = 0.980$; F-statistics = 149.76; Prob (F-statistics) =0.000; Durbin-Watson stat = 2.032.

one percent increase in basic health unit raised the real GDP by 0.01 percent per annum.

**Literacy rate**

Literacy is an important and very basic indicator of education. Empirical evidences show with an increase in the level of this variable; this might have impact on the growth of GDP, in the long run, which could ultimately prove important indicator of welfare as well. The estimated coefficient of literacy rate ($x_7$) is 2.13 which is statistically significant, and can be interpreted that one percent increase in the growth of this indicator, the real GDP on average will increase by 2.13. It implies that literacy rate has very strong impact on the growth of real GDP.

**Labour force participation**

This is a very important indicator of the economy. With the participation of this indicator, we can judge whether an economy is progressing or not. The estimated coefficient of the labour force participation ($x_8$) is 2.29; it implies the real GDP grew by 2.29 percent with 1 percent increase in labour force participation during the study period.

**Absolute and relative contribution of macroeconomic policy variables to economic growth**

It may be useful to evaluate relative and absolute contributions of each explanatory variable to growth rates. Relative and absolute contributions of key policy variables to growth rates of real GDP have been estimated and are shown in Table 6. Following Hicks (1979), the absolute contribution is calculated as the estimated coefficient of all explanatory variables multiplied by the standard deviation of the respective explanatory variable. The relative contribution of each explanatory variable is calculated by dividing the estimates of absolute contribution to growth by the standard deviation of the dependent variable.

Table 6 (column 2) shows the absolute contributions of each explanatory variable to growth rates of real GDP. The results of column (2) show that the absolute contribution of eight explanatory variables, in which seven explanatory variables have significantly positive impact on real GDP while one explanatory variable is statistically significant but having a negative sign. Education indicators are defined as primary, middle, high, other, schools enrollment as a ratio to total employed labour force. The largest positive absolute impact (HSE/LF) is $x_3$ (0.36), (PSE/LF) $x_1$ (0.21), literacy rate $x_7$ is (0.19), labour force participation $x_8$ is (0.05), (OSE/LF) $x_4$ is (0.04), exports as percentage of GDP $x_5$ (0.00), basic health unit $x_6$ (0.00). On the other hand, the one explanatory variable is (MSE/LF); $x_2$, (-0.32) and has negative impact on real GDP.

The calculated relative contributions of the same eight explanatory variables on real GDP growth, based on regression are also shown in column (3). It is interesting to note that the sequence of relative effects of explanatory variables on real GDP growth remains the same as in the case of coefficients based on regression$^4$; for example, HSE/LF (0.73), MSE/LF (-0.65), PSE/LF (0.43), literacy rate (0.39), labour force participation (0.10), OSE/LF (0.08), exports (0), basic health unit (0).

**CONCLUSION AND POLICY IMPLICATION**

In order to generate balance between economic growth and education, motivation to the students to enroll in schools at different levels is mandatory. The whole

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$^4$ It is worth mentioning that relative impact of independent variables on real GDP growth is same as emerged by the coefficient of regression.
system of education should create and develop people's potential for innovations and their achievement in order to make available valuable support to the processes of economic development. The investment in education is not only necessary to increase human capital stock but also a mandatory to achieve higher living standard.

In recent years, Pakistan’s economic growth has remained unsustainable to startling level which caused serious apprehension to policy-makers, professionals, and foreign donor agencies. The main purpose of this study was to examine the effects of some of the key macroeconomic variables on Pakistan’s economic growth. The results estimated have led us to the following major conclusions. Primary education played a significant role in enhancing GDP growth rate of Pakistan during 1980-2010. It implies that primary education is an important prerequisite for accelerating growth. Therefore, primary education must be considered as the foundation-stone upon which the economic development in Pakistan can be erected. The Government must provide primary education to all school-age children to improve the literacy rate within a minimum time-span. It is noted that the average annual share of primary school enrolment in total enrolment has been about 90 percent during the period under consideration. Higher and other school enrollments –labour force ratio have shown a greater contribution in the economic growth. Similarly, our study shows that labour force participation variable is a significant predictor of economic growth and it would help to contribute to real GDP growth of the economy. Thus, the Government must ensure the provision of labour force participation through giving the employment opportunities, better health condition etc, in order to sustain economic growth. In addition, our health indicator reveals an insignificant result, which might be due to a poorly administered basic health units in Pakistan. Moreover, literacy showed very strong impact on economic growth which shows the positive sign for sustainable economic growth and strengthens the education return of economy to some extent.

Table 6. Absolute and relative contributions of explanatory variables to growth.

<table>
<thead>
<tr>
<th>Explanatory variables</th>
<th>Estimated S.D of explanatory variables (%)</th>
<th>Estimated coefficients (1)</th>
<th>Absolute contribution to economic growth (2)</th>
<th>Relative contribution to economic growth (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>x1</td>
<td>0.08</td>
<td>2.67</td>
<td>0.21</td>
<td>0.43</td>
</tr>
<tr>
<td>x2</td>
<td>0.10</td>
<td>-3.15</td>
<td>-0.32</td>
<td>-0.65</td>
</tr>
<tr>
<td>x3</td>
<td>0.13</td>
<td>2.80</td>
<td>0.36</td>
<td>0.73</td>
</tr>
<tr>
<td>x4</td>
<td>0.14</td>
<td>0.26</td>
<td>0.04</td>
<td>0.08</td>
</tr>
<tr>
<td>x5</td>
<td>0.07</td>
<td>0.04</td>
<td>0.00</td>
<td>0</td>
</tr>
<tr>
<td>x6</td>
<td>0.25</td>
<td>0.01</td>
<td>0.00</td>
<td>0</td>
</tr>
<tr>
<td>x7</td>
<td>0.09</td>
<td>2.13</td>
<td>0.19</td>
<td>0.39</td>
</tr>
<tr>
<td>x8</td>
<td>0.02</td>
<td>2.29</td>
<td>0.05</td>
<td>0.10</td>
</tr>
</tbody>
</table>

The policy makers suggested that the measures should be adopted to improve the primary education system in Pakistan, so that a universal enrolment rate in primary education may be achieved in near future. In addition, it measures may also be taken to enhance the literacy rate in the country to boost the economic growth in Pakistan.

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