Exports and Economic Growth in Pakistan:
An Empirical Analysis

Muhammad Azam[*]

Abstract

A close positive relationship between expansion in exports of a country and economic development has been observed by a good number of researchers theoretically as well empirically. The aim of this research is to investigate empirically the impacts of exports and foreign direct investment (hereafter FDI) on economic growth in Pakistan. Empirical results show positive significant impacts of exports and FDI on economic growth. Thus, findings of this study suggest that policy makers need to generate appropriate policy in order to increase the volume of exports and augment FDI inflows.

Keywords: Exports, FDI, Economic Growth, Pakistan

Introduction

The significance of the exports for economic expansion is evident from the writings of classical as well as many modern economists. According to Marshall (1890), a nation's economic progress belongs to the study of international trade. Nurkse (1961) called international trade as an engine of growth. For efficient utilization of available scarce resources and for expanding global trade volume, free trade in goods and services is commendable Bhagwati (1973). It has been observed that there is a close positive relationship between expansion in exports of a country and economic development. High and rapidly growing economies are usually characterized by speedy expansion in exports. However, it is critical to note that expansion in exports is possible not just in countries endowed with plentiful natural resources. Even less developed countries with scarce natural resources can introduce appropriate economic policies to transform scarce resources from inefficient domestic use to dynamic export production. Moreover, it is also important that exports are not be limited to primary products only but should to be extended to final exportable products which are high in value added with high backward linkages in order to create dynamism in the economy.

[*] Visiting scholar, Department of Economics, University of Illinois at Urbana Champaign –USA

Economists often assert that trade liberalization that is, moving towards a free trade regime through reductions of tariff and other barriers, is generally the major driving force behind globalization. It improves welfare and alleviates poverty, as trade liberalization provides opportunities to create jobs, fosters economic growth and improves consumer choice and living standards of the inhabitants. Zaidi (2005) argues that the pattern and nature of foreign trade is a fairly good indicator of the pattern and nature of the economies that enter into trade agreements. Countries with comparative advantage in certain products are likely to produce and export those commodities to attain maximum benefits from trade. However, countries often require importing raw materials in order to expand their exports. Countries with a large agricultural sector may have to contend with their output and export capacity being determined by climatic conditions. Single commodity exporting countries or those with a narrow export base must frequently face the challenge of unpredictable changes in world demand. They need diversification in their exports to compete in the international market and increase volume of exports.

Survey of Empirical Studies

Many empirical studies have been carried out to examine the role of exports in the process of economic growth and found positive impact of exports on economic growth of developing economies (e.g., Feder, 1982; Balassa, 1985). Using Error Correction Modeling (ECM) approach, Bahmani-Oskooee and Alse (1993) examined the relationship between export growth and economic growth for nine developing countries and found strong support for the export-led growth hypothesis for all of the countries included in the sample. Khan and Saqib (1993), used simultaneous equation model and found a strong relationship between export performance and economic growth in Pakistan. Khan, et al. (1995) finds strong evidence of bi-directional causality between export growth and economic growth in Pakistan. Ahmed, et al. (2000) investigates the relationship between exports, economic growth and foreign debt for Bangladesh, India, Pakistan, Sri Lanka and four South East Asian countries using a trivariate causality framework. The study rejects the export-led growth hypothesis for all the countries, included in the sample, except Bangladesh. Kemal, et al. (2002) examines export-led hypothesis for five South Asian Countries including Pakistan. The study found no evidence of causation in the short run for Pakistan in either direction. However, they find a strong support for long-run causality from export to GDP for Pakistan. Aurangzeb (2006), investigates the relationship between exports and economic growth in Pakistan by using

time series from 1973 to 2005. The results indicate that marginal factor productivities are significantly higher in the exports sector. Abou-Stait, (2005), conducted a study in Egypt for the period from 1977 to 2003 and stated that several empirical studies confirmed the strong association between exports and economic growth. Shirazi and Manap (2005) analyzed the relationship between exports, imports and economic growth for Pakistan for the period from 1960-2003. These investigators used a different methodology that focused only on the long-run causal orderings and shed no light on short run patterns of causality that too have plausible economic interpretation, and may even turn out to be more important. The hypothesis of export-led growth in the Pakistan economy was supported in both the short and long run during the period from 1971-2005 (Saima, et al. 2008). Azam and Naeem (2009), finds that domestic investment, FDI, and trade openness had positive effects on economic growth in Pakistan during 1971-2005.

Objectives of the Study
Based on the literature cited above, following objectives are set for this study:
- To understand the importance of exports in the process of economic growth
- To examine empirically the impact of exports and FDI on economic growth in Pakistan

Hypotheses of the Study
The following hypotheses are formulated for testing:
- Impact of exports on economic growth will be positive, that is, an increase in exports will promote economic growth of Pakistan.
- Impact of FDI on economic growth of Pakistan is expected to be positive.

Methodology and Data Description

Econometric Model
The following simple log linear regression model is used in this study;
Economic Growth= f (exports, foreign direct investment)
$$(1)$$
Symbolically equation (1) can be written as follows;

$$Y = \beta_0 + \beta_1 EXP + \beta_2 FDI + \varepsilon$$

$$(2)$$

Where
Y= Economic growth (gross national product in log form used for economic growth), EXP= exports in log form, FDI= foreign direct investment in log form and ε= stochastic term

Table 1: List of Variables

Variables	Description
Dependent variable used: **Gross National Product (GNP)**	Gross National Product (GNP) at factor cost (fc) in (Pak. rupees million) in log form used for economic growth of Pakistan and the data taken from Economic Survey of Pakistan (1980-81, 2000-2001, 2008-09) and Federal Bureau of Statistics (1980, 2000, 2009).
Explanatory variables used: i. Exports ii. FDI	Exports of Pakistan in Pak. rupees million in log form. The data on this variable taken from Federal Bureau of Statistics (1980-81, 2000-2001, 2008-09), and Economic Survey of Pakistan (1980, 2000, 2009).
	Foreign direct investment (FDI) Pak. rupees million in log form. The data on this variable taken from Federal Bureau of Statistics (1980-81, 2000-2001, 2008-09), and Economic Survey of Pakistan (1980, 2000, 2009).

Estimation Procedure
This study is based on secondary data ranging from 1971 to 2009 and therefore, the study consists of total 38 observations. Simple log linear regression model and the method of least squares technique have been used. In addition, for time series data analysis Augmented Dickey Fuller (ADF) test and Johansen cointegration test have been used. The data for empirical analysis have been transformed into one unit (i.e., Pak. rupees million) and then converted into natural log form for overcoming non-linearity problem. E. View statistical software has been utilized.

Results
The empirical investigation on the economic growth of Pakistan uses time series data ranging from 1971 to 2009, where correlation matrix shown in Table 2, results of Augmented Dickey Fuller (ADF) test are

given in Table 3, OLS estimates are presented in Table 4 and Johansen co-integration results are shown in Table 5 respectively.

Table 2. Correlation between Dependent Variable (GNP) and other Variables

	GNP	FDI	EXP
GNP	1.00000		
FDI	0.932167	1.00000	
EXP	0.992535	0.903305	1.00000

Table 3. Results of Augmented Dickey Fuller Test

Variables	Level/ Difference	Without Trend (Intercept)	Conclusion	5% Critical Value (without trend)
GNP	Level First Difference	-1.438 -3.589	I(0) I(1)	-2.942
FDI	Level First Difference	-1.447 -10.849	I(0) I(1)	-2.942
EXP	Level First Difference	-1.799 -8.663	I(0) I(1)	-2.942

95% critical value for Augmented Dickey Fuller Test (ADF) statistics for all variables i.e., -2.942 (without trend). ADF Test demonstrates that almost all variables have stationary in the levels of 95% critical values without trend. From the Unit Root Tests it has been concluded that all of the variables are integrated of order I.

Table 4. Ordinary Least Square Estimates

Variables	Coefficient
EXP	0.778994
FDI	0.083090
R-squared	0.995750
Adjusted R-squared	0.995375

Table 5. Johansen Cointegration Test Result

Eigen Values	Likelihood Ratio	5 % Critical Value	1 % Critical Value	Hypothesized No. of CE(s)
0.652291	48.24970	29.68	35.65	None **

0.216806	9.163319	15.41	20.04	At most 1
0.003277	0.121441	3.76	6.65	At most 2

*(**) denotes rejection of the hypothesis at 5% (1%) significance level
L.R. test indicates 1 cointegrating equation(s) at 5% significance level

Results presented in Table 4 show that economic growth of Pakistan is significantly correlated with FDI and exports of the country. Adjusted R-squared value is 0.99 which shows that 99% variation in dependent variable (economic growth) can be accounted for by the variability in FDI and exports of the country. These results strongly support the study hypotheses. Table 2 further shows that the impact of explanatory variable, export, is found positively significant at the 0.01 level of significance. The coefficient size of export is 0.77, in this case one percent change in export will change economic growth by 0.77 percent. It means that due to promotion of exports, economic growth of the country would increase. The present study also found FDI positively significant at the 1% level of significance and the coefficient size of FDI is 0.08. It shows that the impact of FDI on economic growth is important. The positive relationship between exports and economic growth, found in our study is consistent with the findings of other studies by Khan and Saqib (1993), and Abou-Stait (2005). Similarly, the positive impact of FDI on economic growth has also been found by Borensztein, et al., (1998), and Alireza et al., (2005). Thus, results of the earlier studies strongly support results of the present study.

Conclusions
The present study has been conducted with the aim to examine empirically the impact of exports and FDI on economic growth in Pakistan using data from 1971 to 2009, particularly to understand the importance of exports in the enhancement of economic growth. Least squares results support research hypotheses of the study in hand. The impacts of exports and foreign direct investment during the study period are statistically significant. The positive impact of exports on economic growth demonstrates that expansion of exports is highly important for accelerating economic growth of the country.

References

Abou-Stait, F. 2005. *Are Exports the Engine of Economic Growth? An Application of Cointegration and Causality Analysis for Egypt, 1977-2003*. African Development Bank Economic Research Working Paper .No 76

Ahmed, Q. S. Butt, and Alam S. 2000. Economic Growth, Export, and External Debt Causality: The Case of Asian Countries. *The Pakistan Development Review*, 39(4), 591-608.

Alireza K., E., and Samane G. 2005. *Impact of Foreign Direct Investment and Trade on Economic Growth*. Economic Research Forum, 12th Annual Conference, 19th–21th December 2005, Grand Hyatt, Cairo, Egypt.

Aurangzeb 2006. Exports, Productivity and Economic Growth in Pakistan: A Time Series Analysis. *The Lahore Journal of Economics*. 11: (1), 01-18

Azam M. and Naeem-ur-Rahman K. 2009. Empirical Analysis of the Determinants of Economics Growth in Pakistan; 1971-2005. *Sarhad J. Agric*. 25(2), 307-312

Bahmani-Oskooee, M., and Alse J. 1993. Export Growth and Economic Growth: An Application of Cointegration and Error-Correction Modeling. *Journal of Developing Areas*, 27(4), 535–542.

Balassa, B. 1985. Exports, Policy Choices, and Economic Growth in Developing Countries after the 1973 Oil Shock. *Journal of Development Economics*, 4(1), 23-35.

Bhagwati, J. N. 1973. *The Theory of Immiserizing Growth: Further Application*. In Michael B Connolly and Alexander K. Swoboda, (eds): International Trade and Money. Toronto: University of Toronto Press.

Borensztein, E., J. De Gregorio, and J-W. Lee 1998. How Does Foreign Direct Investment Affect Economic Growth?. *Journal of International Economics*, 45, 115-135.

Feder, G. 1982. On Export and Economic Growth. *Journal of Development Economics*, 12: 59-.73.

Federal Bureau of Statistics 1980, 2000, 2009, 2010, Statistics Division, Ministry of Economic Affairs and Statistics Govt. of Pakistan, 5-SLIC Building, F-6/4, Blue Area, Islamabad.

Government of Pakistan, *Economic Survey of Pakistan*. 1980-81, 2000-2001, 2009-10. Economic Advisors Wing Ministry of Finance Islamabad, Pakistan

Kemal, A. R., Musleh ud Din, Usman Q., F. Lloyd, and Sirimevan S. C. 2002. *Exports and Economic Growth in South Asia.* A Study prepared for the South Asia Network of Economic Research Institutions.

Khan, A. H., A. Malik, and Hasan L. 1995. Exports, Growth and Causality: An Application of Cointegration and Error-correction Modeling. *The Development Review*, 34: (4), 1003-1012

Khan, A. H., and Saqib N. 1993. Exports and Economic Growth: The Pakistan Experience. *International Economic Journal,* 7(3): 53-64.

Marshall, A. 1890. *Principles of Economics*, London: Macmillan.

Nurkse, R. 1961. Further Comments on Professor Rosenstein-Rodan's Paper. In Howard S. Ellis, assisted by Henry C. Wallich (eds.) Economic Development for Latin America *Proceedings of a Conference held by the International Economic Association*. London: Macmillan.

Saima S. Sameena Z. Sadia M. and Sabihuddin M. B. 2008. Export-Led Growth Hypothesis in Pakistan: A Reinvestigation Using the Bounds Test. *The Lahore Journal of Economics*, 13(2), 59-80

Sherazi, N. S., and Manap T. A. 2005. Exports and Economic Growth Nexus: The Case of Pakistan. *The Pakistan Development Review,* 43(4), 563–581

Zaidi S. A. 2005. *Issues in Pakistan's Economy.* Second Edition Revised and Expanded, Ameena Saiyid, Oxford University Press.