

Agricultural Export and Economic Growth: A Case Study of Pakistan

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Abstract

The main concern of this study is to analyze the impact of agricultural exports on macroeconomic performance of Pakistan. This study estimated the relationship between Gross domestic product (GDP) and agricultural and non-agricultural exports for Pakistan employing Johansen co-integration technique by using secondary data for the period 1972-2008. The main findings of the study depict that agricultural exports have a negative relationship with economic growth of Pakistan while non-agricultural exports have positive relation with economic growth. On the basis of empirical results this study suggested that Pakistan have to do structural changes in agricultural exports by converting its agricultural exports into value added products.

Keywords: Pakistan, Agricultural exports, non-agricultural exports, economic growth, Capital.

1. Introduction

Economic growth is a primary and a crucial aim of developing countries, and a recurrent theme in the trade and development literature is the role of exports as it is considered as an engine for economic growth. The goal of rapid economic growth is achieved in underdeveloped countries through more trade. The arguments can be seen in classical economic theories of Adam Smith and David Ricardo, that role of international trade is inevitable in achieving economic growth and there are economic gains from specialization. The export led growth hypothesis that exports are the main source of economic growth, has many theoretical justifications.

First, in Keynesian arguments, export growth leads to income growth via the foreign exchange multiplier in the short run. Second, more foreign exchange is obtained from raising exports, which contribute to growth by importing manufactured goods, capital goods, and technology. Third, competition leads to economies of scale, technological development, and growth. Fourth, the export sector may produce positive externalities, such as more efficient management, better production techniques, and technical expertise about product design which lead to economic growth. Agriculture is an important engine for growth, especially for low-income developing countries in their journey of economic development. Pakistan is a developing country and its economy is the world's 27th largest economy because of its more purchasing power. Agriculture is the mainstay of Pakistan's economy.

The Agriculture sector remained continuously engages in reformation of Pakistan's economy since independence. It is considered as a leading sector in the early time period but due to the political, social, environmental and climate conditions its production yield goes down gradually. Now it is the second largest sector in Pakistan accounting for over 21 percent of GDP, 45 percent of total labor force engaged with this sector while few others are employed in the manufacturing and tertiary sectors. Around 63 percent of country population live in rural areas is directly or indirectly linked with this sector for their source of revenue. Agriculture sector have strong linkage with the rest of the economy, while the problem is that, it is the primary supplier of raw materials to downstream industry, that contributing significantly to Pakistan's export [Raza et al 2012].

Major exports of Pakistan consist of agriculture products i.e. Wheat, rice, cotton. According to economic survey (2009-10) a comparative analysis of product wise shares in World exports and Pakistan's exports exhibits a mixed picture. Major export categories of Pakistan during 2009 remained textile manufactures, other manufactures and food having shares of 51 percent, 24 percent, and 15 percent, respectively, whereas, the world's exports during 2008 are concentrated in manufacturing, machinery, transport equipment, fuel and mining products with the share of 67 percent, 34 percent, 23 percent and 18 percent respectively. It is a significant difference between patterns of world demand and the items which Pakistan is exporting. The divergent trend indicates the existence of structural rigidities in the export base of Pakistan.

This study examines the contribution of agricultural exports to economic growth in Pakistan. The importance of the study can be rationalized from the facts that there is a huge literature on agricultural exports have been conducted in Pakistan. Moreover, we are applying the most recent data to explore the importance of

agricultural exports for Pakistan's economic growth.

Also, this work could serve as a roadmap for further solutions to problems of multilateral trade in the agricultural domain. As, Pakistan is an agricultural economy, development of the agricultural sector is the main source for policy makers to implement appropriate policies towards the sector thus ensuring the welfare of all.

The main objective of this study is to evaluate the effects of agricultural exports for economic growth. An attempt is also made to provide an insight into the structure and trends of agricultural exports in Pakistan. The specific objectives of the study are:

- To examine the trends and structure of agricultural exports in Pakistan.
- To evaluate the historically agricultural exports and its contribution to economic growth.
- To access the impact of agricultural exports for economic growth.
- To conclude the findings of the study and state some policy implications.

2. Literature review

The importance of agricultural exports in the development of Pakistan is indispensable, a huge body of literature is available on the role of exports in economic growth. These studies have used either time series data or cross sectional data with different conclusions.

The earlier studies for example, Michaely (1977); Balassa (1978); Tyler (1981); and Kormendi & Mequire (1985) analysed the relationship between economic growth and exports by using simple correlation coefficient technique. These studies showed that growth of exports was positively correlated with economic growth. The second group of researchers like Voivades (1973); Feder (1983); Balassa (1985); Ram (1987); Siamwalla, et al (1991); and Vohra (2001) used regression techniques to examine the relationship between export growth and economic growth. The empirical results of these studies indicate that exports have a positive and significant impact on economic growth. The third group of studies like Chow (1987); Sephton (1989); Sung-Shen et al. (1990); Bahmani-Oskooee et al. (1991); Ahmad and Kwan (1991); Matsuyama (1992); Ahmad and Harnhirun (1996); Shan and Tian (1998) Konya (2006) examined the causality relationship between export and economic growth using Granger causality test. These studies concluded that some evidence of causality relationship between exports and growth are existed.

Ekanayake (1999) examines the causal relationship between export growth and economic growth. This study used the time series data of eight Asian developing countries covering the period from 1960 to 1997. The co-integration and error-correction modeling techniques used in this study have exposed, that there is a bi-directional causality between export growth and economic growth in seven (Indonesia, India, Korea, Thailand, Philippines, Sri Lanka and Pakistan) of the eight countries considered except Malaysia. There is evidence for long-run Granger causality running from economic growth to export growth in all countries.

Chemeda (2001) estimated the role of exports and economic growth with reference to Ethiopian country. The key objective of this study is to investigate the presence and magnitude of the link between export and economic growth of the country in question. The study applied Cobb-Douglas function model to analyze the effect of export on economic growth. More importantly, to find the relationship between export and economic growth, the econometrics technique of analysis (co-integration) was used for the Time series data from 1950-1986. To overcome the major problem, lack of data availability of capital stock and labour force, ratio of real investment to real gross domestic product (I/Y) and real gross domestic product per capita are used respectively. The study provides evidences that positive effect of real exports on economic growth is more in long run as in short run in the context of Ethiopian economy.

Dawson (2005) observed the contribution of agricultural exports to economic growth in least developed countries. The study constructed two theoretical models, the first model was an aggregate production function of both agricultural and non-agricultural exports as inputs. The second model was dual economy model i.e. Agricultural and non-agricultural and each sector has two subsectors, one producing exports and one producing nonexport. Both fixed and random effects models were examined by using panel data of 62 LDCs for the period 1974–1995. The study provides evidence from LDCs, which supports export-led growth theory. The results of the study emphasised the role of agricultural exports in economic growth. As for as the policy is concern, the results suggest that export-promotion policies should be balanced.

Francis, B., et al, (2007) worked on agricultural export diversification and economic growth in Caribbean countries. The study make use of co-integration and error-correction models to explore the contributory relationship between agricultural export diversification and economic growth in eight selected Caribbean countries. Annual data for the period 1961 to 2000 were used for the estimation. The study demonstrates that agricultural export diversification results economic growth in Barbados and Belize in short run, while Belize, Costa Rica, Haiti, and Jamaica show the same results in the long run. Furthermore, Non-causality exists in Trinidad and Tobago. The clear absence of bi-directional causality seems in any of the countries in either the short or long run. The findings reveals that the export-growth linkage holds in the face of an outward oriented trade strategy in some Caribbean countries.

Sanjuan-Lopez and Dawson (2010) estimated the contribution of agriculture exports to economic growth in under developed countries. They evaluated the relationship between Gross domestic product and agricultural and non-agricultural exports for forty two underdeveloped countries using panel co-integration methods. They find strong evidence that for developing countries in general agricultural and non-agricultural exports together Granger-cause Gross domestic product. The results of the study showed that there existed long run relationship and the agricultural export elasticity of GDP was 0.07 and the non-agricultural export elasticity of GDP was 0.13. Finally they concluded that poorest countries should adopt Balanced export-promotion polices but higher income countries can achieve higher economic growth from non-agricultural exports. Furthermore, the study also supports the export-led growth hypothesis.

3. Theoretical Framework and Methodology

In order to examine the contribution of agricultural exports to economic growth supply side perspective is considered in the theoretical framework. The study starts with the decisive work, neo-classical growth model developed by Solow (1956).The neo-classical production function is specified in terms of traditional inputs like labor and capital.

$$Y_t = f(L_t, K_t) \quad (1)$$

The aim of the present study is to derive a source of growth equation which can be estimated, and explore how agricultural exports affect economic growth also. So, Solow's aggregate production by incorporating both agricultural and non-agricultural exports.

$$Y_t = f(L_t, K_t, X_t^A, X_t^{NA}) \quad (2)$$

By taking the natural logs (ln) on both sides of the equation (3) in order to rule-out the differences in the units of measurements for our variables, it leads us to;

$$\log GDP = \log \alpha_0 + \alpha_1 EX_A + \alpha_2 \log Cap + \alpha_3 \log EX_{NA} + \alpha_4 \log Lab + \alpha_5 \log GDP (-1) + \varepsilon \quad (3)$$

$$\alpha_0, \alpha_1, \alpha_2, \alpha_3, \alpha_4, \alpha_5 > 0$$

Where: $\alpha_0, \alpha_1, \alpha_2, \alpha_3, \alpha_4,$ and α_5 are parameters to be estimated

GDP = Gross Domestic Product

EX_A = Agricultural Exports

Cap = Capital

EX_{NA} = Non-Agricultural Exports

Lab = Labor Force

GDP (-1) = one year lagged Gross Domestic Product

ε = Error Term

In order to explore the short run and long run relationship between agricultural exports, non-agricultural exports and economic growth, study needs time series econometrics like co-integration analysis, error correction models and Granger causality analysis. The data used for this study is secondary and taken from economic survey of the ministry of finance (various issues), and Annual report of State Bank of Pakistan (various issues). Some information has also been taken from 50 years statistics for Pakistan, published by the Federal Bureau of Statistic (FBS). Financial statistic of international monetary fund is used to appendage the information.

Table 1: Variables Measurement

Variables	Measurement
Dependent Variable	
Gross Domestic Product	Gross domestic product in million rupees at market prices is used as a proxy for Economic growth.
Independent Variables	
Agricultural exports	Agricultural exports, based on raw material rather than value added products.
Non-agricultural exports	Non-agricultural exports consist of manufactured goods, which are value added products
Labour force	People aged 15 and older, who are economically active population in millions
Capital	Fixed capital formation in million rupees

4. Empirical Results and Discussion

Descriptive Statistics

Descriptive statistics depict that basic features of the data. They represent quantitative descriptions in a manageable form and provide simple summaries about the data. It differs from inferential statistics. Descriptive statistics describe what is or what the data shows while inferential statistics is used to reach conclusions that extend beyond the immediate data alone.

Table 2: Results of Descriptive Statistics

	AGRIEX	CAP	NAGRIEX	LF
Mean	1045.153	422736.2	5172.259	32.67421
Median	1006.8	177646	3856.2	30.60477
Maximum	2794.11	2210921	15147.4	53.53
Minimum	300.3	8647	338.2	18.77653
Standard Deviation	545.1466	584630.2	4444.066	9.728104
Skewness	1.277567	1.916095	0.84226	0.535522
Kurtosis	5.263457	5.661876	2.696651	2.293723
Jarque-Bera	17.96343	33.56404	4.516511	2.537529
Probability	0.000126	0	0.104533	0.281179

The mean of variables AGRIEX, CAP, NAGRIEX and LF is 1045.153, 422736.2, 5172.259 and 32.67421 respectively. The standard deviation, a measure of dispersion or spread in the series, of variables AGRIEX, CAP, NAGRIEX and LF is 545.1466, 584630.2, 4444.066 and 9.728104 respectively. The skewness of a symmetric distribution is zero. The values of skewness indicate that the distribution is positively skewed i.e. mean is greater than median and median is greater than mode. Comparing the values of skewness of different variables under consideration, it is obvious that the skewness of variable CAP are highly positively skewed as compared to values of NAGRIEX and LF. So, the data of AGRIEX, NAGRIEX and LF is nearly normally distributed under the period of study. The Kurtosis of normal distributions is 3 whereas the Kurtosis of AGRIEX and CAP, is greater than 3 which show leptokurtic distribution. While the value of non-Agricultural exports and the labor force is less than 3 which shows Platykurtic distribution.

Short Run Results

First, study discusses the short run results of the model. In this study the double log model is used to find the percentage values of the variables. Overall model shows the best goodness of fit, explained by the R^2 which is 0.99. The value of Durbin Watson test which is 2.47 shows that there is an absence of autocorrelation in the model.

The first coefficient in equation 3 is agricultural exports which is our focused variable. The value of the coefficient of agricultural exports is -0.06 which suggests that a one percent increase in the agricultural export results in reduction in GDP by 6 percent. This shows the negative relationship between agricultural exports and GDP, which is statistically significant. The results are compatible with the different studies like Matsuyama (1992). The possible reason of the negative relationship between these two variables may be that, agricultural exports of Pakistan are based on raw material rather than value added products. So, the receipts from the exports are low which do not contribute towards the GDP.

The value of coefficient of capital is -0.0096 which indicates that a one percent increase in the capital stock leads to fall in GDP by 0.96 percent (which is less than one percent). The coefficient has not expected (according to economic theory of investment multiplier) sign and it is not statistically significant. The value of the coefficient is quite low which shows the strength of the impact is minor. The results are compatible with the different studies. There are many reasons of this unexpected result. Firstly, in Pakistan financial markets are not organized. There is low network of financial institutions in rural areas. People due to non-availability of the financial institutions spend their incomes in unproductive fields; in such situation capital formation in real sense does not contribute to GDP. Secondly, Capital is not productive in less developed country specially Pakistan due to obsolete technology and inefficient managerial skills. Thirdly, Resources available in less developed countries are usually used for unproductive purpose like for defense expenditures, debt servicing, subsidies, etc. So these non-development expenditures do not increase productive capacity of the economy.

The next coefficient is non-agricultural exports. The value of coefficient of non-agricultural exports is 0.1992, which points out that a one percent increase in non-agricultural export results in addition in GDP of 19 percent. The result shows a positive relationship between the two variables, and it is statistically significant as well, our results are compatible with the different studies. [Lopez (2010), Bairak (1996)]. The positive relationship between non-agricultural exports and the GDP is permissible in Pakistan because non-agricultural exports consist of manufactured goods, which are value added products and have high prices in the world market. Due to the high prices, Pakistan gets more resources than agricultural export's resources. This gives the sense that why non-agricultural exports are contributing to GDP in Pakistan.

Table 3: Parameters Estimates of GDP (The dependent variable is a log of GDP)

Independent Variables	Equation No 5.2
Constant	1.195419 (5.20)
Log of Agricultural Exports	-0.062571 (-2.89)
Log of Capital	-0.009602
Log of Non-Agricultural Exports	0.199261
Log of Labour	-0.078693
LGDP (-1)	0.862857
R-squared	0.99
Durbin-Watson	2.478420
DW(h- statistic)	-1.46
Sample Size	37

Note: The t-statistics (in parenthesis) all the estimations are carried out by Eviews.

The value of the coefficient of labor is -0.0786 demonstrating that one percent addition in labor results reduction in GDP by 7.8 percent. The findings show that there is an inverse relationship between the labor and GDP. It is statistically significant but against the economic theory. Again, this contradictory result is justifiable in Pakistan. It has been observed that in developing countries, particularly Pakistan productivity of the factors of production, especially labor is very low, as compared with developed countries. Due to low labor productivity, Pakistan is economically backward there are many factors which are responsible for the low labor productivity, i.e. immobility of labor due to joint family system, lacking in self-improvement, sluggish and shirk work etc. Therefore, low labor productivity results in low income and the less developed countries remain underdeveloped. In essence, it can be said that in Pakistan labor is just human being, not the human capital because we have not converted our population in the human capital. Human capital is the primary source of economic growth. In fact Pakistan is facing problems in the human capital formation. The reasons of the low human capital formation may be a defective pattern of investment in education, the shortage of health and nutrition facility, no on the job training and no manpower planning.

Finally, the last variable in the equation is lagged GDP. The value of the coefficient of lagged GDP is 0.8628 , which reveals that one percent increase in the previous year GDP contribute in the current year GDP positively by 86 percent. The result is statistically significant and economically justifiable. This gives the sense that the previous period, GDP increases the investment level of the country which leads to increase in GDP in the next period according to the multiplier accelerator interaction. So, results of the study are according to the multiplier accelerator interaction theory.

Long Run Results

Study also shows the further discussion on the long run results in detail. From the obtained results, study estimates the adjustment co-efficient (λ) by using the fact that α_5 is equal to $1 - \lambda = 1 - 0.86 = 0.14$. This says that 14% of the difference between the desire and actual GDP is eliminated in each year. The estimated coefficient in Table 3 are of the short run GDP elasticities, with respect to capital, labor force, agricultural exports and non-agricultural exports.

The short run elasticities of agricultural exports capital, non-agricultural exports and labor force, are (-0.0625) , (-0.0096) , (0.1992) , and (-0.0786) respectively.

The log estimates of GDP are given by the following equation.

$$\text{LogGDP} = 8.5387 - 0.4469 E_{tA} - 0.06858 L_{\text{cap}} + 1.42322 E_{tNA} - 0.5620 \text{Lab} + \epsilon_t$$

Estimate of these long run parameters are obtained by dividing each of the short run coefficient by the estimate of the adjustment coefficient¹ ($\lambda = 0.14$).

Granger Causality Test

Engle and Granger (1987) and Granger (1988) established that if two time series variables are co-integrated then at least unidirectional causality is present. Here, the optimal lag of variables is selected with the smallest values of Akaike (1974) [AIC] and Schwartz (1978) [SBC] criteria. Both criteria indicated lag 2 as the optimal lag for the annual data. The results are reported in the table below.

The test results are given by:

¹ λ takes values from 0 to 1 and $1/\lambda$ denotes the speed of adjustment. If $\lambda=1$ its means the adjustment to the optimal level is instantaneous, while if $\lambda = 0$ it means there is not adjustment, therefore the closer λ is to unity, the faster the adjustment will be.

Table 4: Pair wise Granger Causality Estimation

Null hypothesis:	f-statistic	Probability
LCAP does not Granger Cause LAGRI	4.12753	0.05031
LAGRI does not Granger Cause LCAP	4.44381	0.04271
LNONAGRI does not Granger Cause LAGRI	2.60283	0.11620
LAGRI does not Granger Cause LNONAGRI	0.37256	0.54579
LLABFOR does not Granger Cause LAGRI	3.09868	0.08762
LAGRI does not Granger Cause LLABFOR	1.42815	0.24058
LGDP does not Granger Cause LAGRI	2.08599	0.15808
LAGRI does not Granger Cause LGDP	0.08152	0.77704
LNONAGRI does not Granger Cause LCAP	0.00017	0.98971
LCAP does not Granger Cause LNONAGRI	1.77942	0.19135
LLABFOR does not Granger Cause LCAP	4.69715	0.03753
LCAP does not Granger Cause LLABFOR	1.52388	0.22575
LGDP does not Granger Cause LCAP	0.10608	0.74671
LCAP does not Granger Cause LGDP	4.05922	0.05214
LLABFOR does not Granger Cause LNONAGRI	2.03589	0.16302
LNONAGRI does not Granger Cause LLABFOR	0.02396	0.87792
LGDP does not Granger Cause LNONAGRI	4.74599	0.03661
LNONAGRI does not Granger Cause LGDP	0.23530	0.63083
LGDP does not Granger Cause LLABFOR	0.00847	0.92721
LLABFOR does not Granger Cause LGDP	3.29194	0.07872

Note: The table illustrates the pair wise Granger Causality estimation.

The first column shows the Null hypothesis for possible rejection at different significance level while second and third columns indicate F statistic and probability respectively. Based on the probability values reported in table.

The statement having a probability value less than or equal to 0.10 may be rejected as the null hypothesis. Based on probability value, we can reject null hypothesis, i.e. capital does not Granger cause agricultural exports, implying that capital stock enhances the exports of agriculture sector. Due to more capital stock, technology relating to agriculture sector improves and helps in cheap agricultural products production, which ultimately expand agricultural exports. On the other side agricultural exports also affects capital stock. There is bidirectional and the causal relationship between agricultural exports and capital stock. Agricultural exports lead to move the income, GDP of the country and hence more investment and capital stock.

The probability value for the null hypothesis, i.e. non-agricultural export does not Granger cause agricultural exports, is 0.10. It suggests that non-agricultural exports does not granger cause agricultural exports. There is uni-directional relationship between exports. The reason may be that non-agricultural exports are mostly in finished form and it enhances total export volume in nominal terms and a big caused by the higher Gross Domestic Product. Agriculture is the backbone of our country like Pakistan, higher income is a cause of cheap agricultural production and ultimately also a cause of agricultural exports. While on the other hand, the probability value for the null hypothesis, i.e. agriculture exports does not granger cause non-agricultural exports is 0.54, suggesting that in Pakistan agricultural exports does not have any influence on non-agricultural exports. Because agricultural exports are mostly in raw form having less exports volume in monetary terms and cause of less increase in gross domestic products. Non-agricultural products need more capital, income and investment, so agricultural exports are not capable to enhance non-agricultures exports.

The probability value for the null hypothesis, i.e. labor force does not Granger cause agricultural exports is 0.08. It depicts that labor force granger cause agricultural exports, but the agricultural exports does not granger cause labor force. There is a unidirectional relationship between agricultural exports and labor force. The reason may be that our labor force can work more efficiently in the agricultural sector and due to this reason agricultural products produce cheaply and result is increase in agricultural exports.

The probability value for the null hypothesis, i.e. gross domestic product does not Granger cause agricultural exports is 0.15. It demonstrates that gross domestic product has no effect on agricultural exports. On the other hand probability value of the null hypothesis, i.e., agricultural exports does not Granger cause gross domestic product is 0.77. The reason may be that agricultural exports of Pakistan are based on raw material rather than value added product. So the receipts from the exports are low which do not contribute towards the gross domestic product.

The probability value for the null hypothesis non-agricultural exports does not granger cause capital is 0.98, suggest that non-agricultural exports have no effect on capital. The reason may be that increase in non-agricultural exports have a direct effect on gross domestic product but not on capital. On the other hand, the

probability value of the null hypothesis, i.e., capital does not granger cause non-agricultural exports. It demonstrates that capital has no significant impact on agricultural exports. Because in Pakistan capital is used in unproductive and unprogressive purposes. So capital does not play a role to enhance the non-agricultural exports. The probability value for the null hypothesis, i.e. labor force does not Granger cause capital is 0.03. The value depicts that labor force does granger cause capital. There is unidirectional linkage between labor force and capital. The reason may be that increase in labor force results the increase in productivity in both agriculture non agriculture sector. This increase in productivity result a significant increase in capital formation. While on the other hand the probability value for the null hypothesis, i.e. Capital does not granger cause labor force is 0.22 shows that capital have not a significant impact on the labor force.

The probability for the null hypothesis, i.e. gross domestic product does not granger cause capital is 0.74. It depicts that gross domestic product does not have any influence on capital. On the other hand the probability value of the null hypothesis, i.e. capital is does not granger cost GDP, 0.05 suggests that capital granger cause gross domestic product. There is a unidirectional relationship between capital and gross domestic product. The reason may be that capital is a source of investment. Due to increase in investment especially export sectors of both agriculture and non-agriculture, enhancement can be seen in the gross domestic product. Increase in capital formation causes an increase in the gross domestic products. The probability value for the null hypothesis, i.e. labor force does not granger cause nonagricultural exports is 0.16. It demonstrates that labor force does not affect non-agricultural exports. On the other hand probability value for the null hypothesis, i.e. non-agricultural exports does not granger cause labor force is 0.87 suggests that non-agricultural exports in Pakistan have no any effect on labor force.

The Probability value for the null hypothesis, i.e. gross domestic product does not granger cause non-agricultural exports is 0.03. It demonstrates that gross domestic product does granger cause non-agricultural exports. The reason may be that higher gross domestic product cause increase in investment, especially in agricultural and non-agricultural exports. The probability value of the null hypothesis, i.e. non-agricultural exports does not Granger cause gross domestic product is 0.63. There is a unidirectional relationship between gross domestic product and non-agricultural exports.

The Probability value for the null hypothesis, i.e. gross domestic product does not granger cause labour force is 0.92. It depicts that gross domestic product has no any influence on the labour force. The Probability value for the null hypothesis, i.e. labour force does not Granger cause gross domestic product is 0.07. It shows that labour force does granger cause gross domestic product.

5. Conclusion

This study is an attempt to investigate the agricultural exports and its impacts on economic growth. The analysis has been done on the basis of annual time series data from the period of 1972-2008, applying OLS technique using double log model.

The main finding of the study are as follows. The focused variable of this study is Agricultural export which shows the inverse relationship with economic growth. This results is not surprising because the agricultural exports of Pakistan are in fact based on primary products i.e. raw material rather than the value added products. The prices of unfinished agricultural products are low in the world market. Pakistan is the close competitor of China and India regarding the agricultural export in the same region, so Pakistan has to face the cost of competitiveness in the form of low prices. The study has also observed that non-agricultural exports are positively related with the economic growth. This results is also in accordance with our expectations. As the non-agricultural exports of Pakistan are composed of manufactured goods which are value added products and command high prices in the world market. Therefore, Pakistan earns more revenues from non-agricultural exports than agricultural exports in all. This leads to increase in the revenues and resulting in economic growth. The study also includes labor and capital as explanatory variables. The results show that in Pakistan labor and capital are not contributing to economic growth. This negative relationship of labor and capital with economic growth is justifiable, due to some fundamental reasons. Regarding labor, we can say that they productivity of labor is low and Pakistan is not investing in human being so, the result is low negative growth. In relation to capital, the negative relationship with gross domestic product can be explained that in Pakistan the productivity of the capital is low due to obsolete technology and lack of enterprise.

Policy implications

In light of the above discussion, following policy implications are as follows:

- i. As the study finds that agricultural exports is negatively related with GDP growth in Pakistan, Pakistan should alter the structure and pattern of foreign trade. The share of primary goods in exports should decrease and the share of manufactured goods in exports should increase.
- ii. To enhance the non-agricultural exports i.e. value added products, the government should give incentives to the producers in the form of tax holidays and tax concession.
- iii. It is also worth noting that Pakistan can do structural changes in agricultural exports by converting

- its agricultural exports in value added products. For example Pakistan should export textile products rather than cotton which is raw material. In this way, Pakistan can get more revenues from the agricultural exports as well.
- iv. Due to competition in foreign trade, the local producer should adopt the improved method of production, packing etc, to improve the quantity and quality of commodities which would results in more revenues (due to exports) for enhancing economic growth.
 - v. Pakistan should adopt proper marketing technique. For this purpose government agencies can arrange industrial fairs in abroad. So that, Pakistani products can be introduced to the foreigners. Export promotion bureau should be more active to increase exports.
 - vi. Pakistan produces low quality products therefore, these goods can be exported due to the poor quality as compared to the international standard, Pakistani products are awarded low price. Pakistan should adopt modern machines and technology to improve the quality of its products so that these products can sold at high prices.
 - vii. Labor is abundant and cheaper factor in Pakistan. But the productivity of labor is low. Pakistan must enhance its educational and health budget to improve the productivity of labor and human capital formation. Government should provide educational training skills and health facilities to the labor force.
 - viii. Some other measures to increase the productivity of labor are as follows:
 - Importance should be given to secondary and vocational education.
 - Private sector should be encouraged to promote education.
 - On job training facilities should be provided.
 - Modern and appropriate technology should be adopted with the labor.
 - Man power planning means should be adopted for the better and efficient use of human resources.
 - Expenditures on health facilities should be raised in order to improve the efficiency of workers.
 - Housing facilities should be provided to the poor laborers.
 - Provision of safe water is also necessary to enhance the productivity of labor.
 - ix. As the findings of the study show negative relationship between capital and GDP growth in Pakistan. So Pakistan should devise some policies to increase the productivity of capital as well.
 - x. Structural changes are also needed in the financial sector. Financial dualism should be removed. The network of the financial institution should be enhanced in the rural areas.

In nutshell, we can say that Pakistan is no more agricultural country and should revise its exports composition and pattern regarding agricultural products to achieve the macroeconomic goals.

References

- [1]. Ahmad, J. and Kwan, A.C.C. (1991). Causality between exports and economic growth. *Economic Letters*, 37, 243-248.
- [2]. Ahmad, J. and Harnhirun, S. (1996). Co-integration and causality between exports and Economic growth: Evidence from the ASEAN Countries. *The Canadian Journal of Economics*, 29, 413-416.
- [3]. Aurangzeb (2006). Exports, productivity and economic growth in Pakistan: a time series analysis. *The Lahore Journal of Economics*, 11(1), 1-18.
- [4]. Bahmani-Oskooee, M. and Alse, J. (1993). Export growth and economic growth: an application of co-integration and error-correction modelling. *Journal of Developing Areas*, 27(4), 535-542.
- [5]. Balassa, B. (1978). Exports and growth: further evidence. *Journal of Development Economics*, 5, 181-189.
- [6]. Balassa, B. (1985). Exports, policy choices, and economic growth in developing Countries after the 1973 oil shock. *Journal of Development Economics*, 18, 23-35.
- [7]. Chemed, F. E. (2001). The role of exports in economic growth with reference to Ethiopian country. *Agricultural economic association in Chicago*, (August 5-8, 2001).
- [8]. Chow, P.C.Y. (1987). Causality between export growth and industrial development. *Journal of development Economics*, 26, 55-63.
- [9]. Dawson, P.J. (2005). Agricultural exports and economic growth in less developed countries. *Agricultural Economics*, 33, 145-152.
- [10]. Ekanayake, E.M. (1999). Exports and economic growth in asian developing countries: co-integration and error correction models. *Journal of Economic Development*, 24(2), 43-56.
- [11]. Feder, G. (1983). On exports and economic growth. *Journal of Development Economics*, 12, 59-73.
- [12]. Francis, B, L. S. Osaretin and L. Troy. (2007). Agricultural export diversification and economic growth in Caribbean countries: co-integration and error-correction models. *The International trade Journal*. Vol.

- XXI. No. 3, fall, 2007.
- [13]. Granger, C.W.J. (1969). Investigating causal relations by econometric and cross-spectral method. *Econometrica*, 37(3), 424-438.
- [14]. Granger, C.W.J. (1988). Some recent developments in a concept of causality. *Journal of Econometrics*, 39, 199-211.
- [15]. Konya, L. (2006). Exports and growth: Granger causality analysis on OECD countries with a panel data approach. *Economic Modelling*, 23, 978-992.
- [16]. Kormendi, R.C. and Mequire, P.G. (1985). Macroeconomic determinants of growth: Cross-country evidence. *Journal of Monetary Economics*, 16(2), 141-163.
- [17]. Matsuyama, K. (1992). Agricultural productivity, comparative Advantage, and Economic growth. *Journal of economic theory*, 58, 317-334.
- [18]. Michaely, M. (1977). Exports and growth: an empirical investigation. *Journal of Development Economics*, 4, 49-53.
- [19]. Ram, R. (1987). Exports and economic growth in developing countries: evidence from Time-series and cross-section data. *Economic Development and Cultural Change*, 36, 51-72.
- [20]. Raza ali, S., M., Ali, Y. and Mehboob, F. (2012) Role of agriculture in economic growth of Pakistan. *International Research Journal of Finance and Economics - Issue 83* (2012).
- [21]. Sephton P.S. (1999). Causality between export growth and industrial development: An empirical evidence from the NICs- A comment. *Journal of Development Economics*, 31, 413-415.
- [22]. Sanjuan-Lopez, A.I. and Dawson, P.J. (2010). Agricultural exports and economic growth in developing countries: A panel co-integration approach. *Journal of Agricultural Economics*, 61(3), 565-583.
- [23]. Shan, J. and Tian, G. G. (1998). Causality between exports and economic growth: the empirical evidence from Shanghai. *Australian Economic Papers*, 37 (2), 195-202.
- [24]. Siamwalla, A. (1991). Changing comparative advantage in Thai agriculture, OECD Development centre, working paper No. 35.
- [25]. Solow, R.M. (1957). Technical change and the aggregate production function. *Review of Economic and Statistics*. 39, 312-320.
- [26]. Sung-Shen, N., Biswas, B. and Tribedy, G. (1990). Causality between exports and Economic growth: an empirical study. *Journal of Economic Development*, 15(1), 47-61.
- [27]. Tyler, W. (1981). Growth and export expansion in less developed countries: some empirical evidence. *Journal of Development Economics*, 9, 121-130.
- [28]. Vohra, R. (2001). Export and Economic growth: further time series evidence from less developed countries, JEL F 4: Int'L advance in Economics. Res.7 (3). 345-50.
- [29]. Voivodas, C.S. (1973). Exports, foreign capital inflows and economic growth. *Journal of international Economics*, 22, 337-349.
- [30]. Xu, Z. (1996). On the Causality between Export Growth and GDP Growth: An Empirical reinvestigation. *Review of International Economics*, 4(2), 172-184.

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