Structural Transformation, Openness and Economic Growth in Pakistan: Causality Analysis

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Abstract

Majority of the third world countries after gaining independence from the colonial powers were and remained poor, and underdeveloped from Western standard. In the post war era a number of theories were put forward to break the vicious circle of underdevelopment. Out of all those, the structural transformation theory was conceived an all curing remedy and almost all underdeveloped countries hailed this prescription. All these economies experienced the basic needs and integrated rural development policies during the period of 1970s. But during 1980s, these countries faced a common problem of macroeconomic instability. The neoclassical economists recommended the curing prescription for these countries in the form of export promotion, free markets and lesser role of these countries governments in economic matters. In this study, we empirically investigated the aforesaid policies in the context of Pakistan's economy. The trade openness and structural transformation cause economic growth and partially support the neoclassical view.

I. Introduction

The economic development means the capacity of the national economy to increase GDP/GNP faster than the increase in its population growth besides changes in institutions, attitudes and structures with the objective of reducing poverty, unemployment and income inequality. There are developed as well as underdeveloped/developing or third world countries in the world, which have low living standards, human development and productivity. These economies are also facing the problems of dependency on agriculture, export of primary products and suffering from vulnerability in international relations. In spite of many common characteristics, these economies are also different in many aspects

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like size and income levels, colonial background, physical and human resource endowment, history, culture, geography, and values that distinguish each country from others.

The majority of developing countries that got independence after World War-II from their colonial rulers were poor and backward. These countries were keen to improve the lot of their poor masses. There were many obstacles that handicapped their ability to achieve this lofty objective. Alien rule or foreign domination had exploited these economies to serve their own interests. Therefore, these were capital- poor economies, the rate of capital formation was between 5 to 8% compared to 15 to 18% in the developed world and 70 to 80% of the population was engaged in agriculture whose contribution to national output was smaller than employment, reflecting their low productivity. The natural resources of these countries were either unutilized or underutilized, people were economically backward and demographic and social characteristics were quite adverse. It was concluded that the major cause of the underdevelopment of these economies was the lack of industrialization.

The magic of western industrialization was conceived a panacea that meant structural transformation from a predominant agrarian structure to a fast growing industrial development. Rostow theory of stages (1961), Lewis unlimited labour supply (1954) and two-gap models (Chenery and Stout 1966) were used as basic instruments in shaping the policy issues of the economic development strategy in the post war period. All these are the most prominent models of the structural change approach. These models emphasized the transformation of traditional subsistence agriculture to a more modern, more urbanized and more industrially, and service-oriented economy. The patterns of development also focused on gradual transformation of the economic, industrial and institutional structures from traditional agriculture to a modern industrial economy.

As the history of economic development is concerned, in 1950s and 1960s economic development was identified with the growth of GNP. Kuznet (1966, 1971) work propagated the idea that inequality had a favourable impact on economic growth in the early stages of development and the gains of development would trickle down to the poor in the long-run as the development gained momentum. In 1970s, there was disillusionment with the idea ‘relentless pursuit of growth’ that was the major objective of economic development. So the calls for dethronement of GNP were heard in both developed and underdeveloped countries and the problems like Poverty, unemployment and income distribution became the majors themes of economic development which were ignored in previous decades. The Integrated Rural Development and Basic

Needs approaches are the major contributions of 1970s development. International Dependence Models[2] gained increasing support from the developing countries intellectuals and in result created a growing disillusion from both model of stages and structural changes.

The neoclassical counterrevolution in economic theory and policy emerged in 1980s with the political ascendancy of conservative governments in the developed countries. These favoured supply-side macroeconomic policies, rational expectations theories and the privatization of public corporations. For developing countries, they stressed for freer markets, privatization of state enterprises and less significant government planning and regulation. The major argument this theory was that the underdevelopment of these economies is the results of poor resource allocation due to incorrect pricing policies and unwarranted state intervention.

Therefore, economic efficiency and growth both could be promoted, if developing countries adopt the policies of free trade and export promotion, encourage competitive free markets and foreign direct investment, dismantle government regulations and price distortions in factor, product and financial markets, and also privatize state enterprises. In addition, they contended that underdevelopment of the developing countries was the result of interventionist policies coupled with corruption, inefficiency and lack of incentives rather than exploitation by the developed countries and international agencies. So it is said that neoclassical economists emphasised free markets operation and lesser role of government towards stimulation of economic development and resource allocation.[3]

As countries policies is concerned, most of the developing countries adopted the policy of Import Substitution (IS) as development strategy during the periods of 1950s, 1960s, and 1970s following the Western Industrialisation. They considered it a right prescription for their development problems. In these countries, IS policy was carried out behind the walls of tariff protection and concessionary fiscal and monetary policies. These countries also faced the other problems like poor export performance and persistent balance of payments difficulties during this whole period. All these craft a new problem for developing countries in the form of 'Foreign Exchange Constraint to Growth'

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[2] *The neo-colonial dependence model, the false-paradigm model, and the dualistic-development model are the major models of the theory. According to these models, developing countries are constrained by institutional, political, and economic rigidities; and have dependence and dominance relationships with the developed countries that perpetuate the dominance of the latter countries.*

[3] *For detail see: Todaro and Smith (2003).*

which remained at the front of top stories of the 1960s development literature. Two prominent economists of this era, Chenery and Strout (1966) suggested that foreign aid would take care of foreign exchange constraint in LDCs. Therefore, developing countries hailed this economic rationale and accelerated foreign loans disguised as aid. But unfortunately this policy (IS) failed to solve the problems of developing countries during the whole period of 1970s. The falling foreign aid, disillusionment with IS industrialisation and the impressive export performance of some developing countries especially East Asians Countries inflated the interest in export promotion during late seventies (Afzal 2006).

In the post-seventies era, a number of countries pursued Export Promotion (EP) policies. Empirical investigations of this period show that the impact of export promotion on low- income countries is different from that of middle-income because manufacturing sector's exports have more favourable impact on economic growth than primary products exports. Over the past three decades a number of studies investigated the export-growth nexus and suggested for; promotion of export, trade liberalization and an outward-looking strategy because of multidimensional favourable effects of exports[4]

The rest of the paper proceeds as follows. Section II briefly presents the review of previous studies; section III discusses the theoretical background and definition of variables, section IV deals with the econometric methodology. Empirical results are given in section V and the section VI contains the conclusions.

II. Literature Review

Chow (1987) investigated the causal relationship between exports of manufactured goods and development of manufacturing industries in eight Newly Industrialized Countries (NICs) for the period 1960-70; by using Sims (1972) Causality Test. This study directly mentioned the evidence of structural transformation. He says that evidence of unidirectional causality from export expansion to the development of manufacturing industries (X→MFG) will lend support to the export-led growth strategy. This implies that exports will not only promote the growth of national income but also lead to structural transformation in the developing economies. If the causality were of opposite direction (MFG→X), it would mean that the development of manufacturing industries might be a prerequisite for developing countries to increase their exports. The

[4] *For detail see, Balassa 1978, Tyler 1981, World Bank 1987, Chow 1987, Dollar 1992, Edwards 1993 and Afzal 2006.*

bidirectional causality [X ⇆ MFG] suggests that export growth and the development of manufacturing industries have a reciprocal causal relationship. Chow argued that exports expansion not only promotes the growth of national income but also leads to structural transformation of the LDCs.

World Bank (1987) was most prominent in demonstrating that those countries which adopted outward-oriented trade strategies performed better than those countries which followed inward-oriented trade strategies. The former outperformed not only in industrialisation and manufactured exports growth but also in agriculture. Other Studies that supported the World Bank (1987) findings are; Greenway and Nam (1988), Alam (1991), Salvatore and Hatcher (1991), Dollar (1992) and Clark (1997).

Though the theories and studies differ in content, analysis and conclusions, the principal lesson rather thrust of these diverse theories and studies is that structural transformation is the panacea for all conceived ills of the developing world. Different authors approached the issue from their own angles as discussed above. The pertinent questions are; whether the income growth causes structural transformation or the other way around. Secondly, does openness cause economic growth or not as asserted by the neoclassical counter revolution?

Pakistan has followed IS during the decades 1950s and 1960s, a mixed-policy of export-promotion and import-substitution during the periods of 1970s, and 1980, and import-liberalisation and export-promotion policies during 1990s in order to gradually convert the economy from a relatively closed and inward-looking economy, to open and outward-looking economy (Afzal 2004). Since Pakistan has pursued diverse development strategies over the years, so it is desirable to examine the overall impact of the structural changes caused by either IS or openness or both on the economic development and growth of Pakistan's economy. This is an empirical question that can be addressed by employing more recent econometric techniques of time-series econometrics. There is no study to the best of our knowledge that has addressed the said issues in Pakistan. Therefore, purpose of the paper is to use cointegration and Granger causality test to explore the causality between structural transformation, openness, and economic growth.

III. Theoretical Background, Definition of Variables and Data Sources

We tried to investigate the causal relationship between openness, structural transformation and economic growth for examining the neoclassical counterrevolution in the context of Pakistan’s experience. For this, we used openness as a proxy for outward-looking strategy and GDP for economic growth.

Openness is measured as the ratio of the sum of exports and imports to GDP. Following Chenery and Syrquin (1975) and Kuznet (1966), we use two measures for structural transformation.

First measure for structural transformation is the ratio of the share of industry as percentage of GDP to the share of agriculture as percentage of GDP. Industrial production can be taken as a proxy for the rate of investment in previous years at which labour and capital have been transferred from agriculture to industry. Both labour transfer and industrial sector employment growth are brought about by output expansion in that sector. The speed with which this expansion occurs is determined by the rate of industrial investment and capital accumulation in the industrial sector (Lewis 1954). It is a well-established fact in literature that as development process precedes the relative share of agriculture declines in the overall economic growth. In Pakistan the share of agriculture to GDP has declined from 53.2 percent in 1949-50 to 21 percent in 2006-07 while the share of industrial sector has increased from 7.8 percent in 1949-50 to 26 percent in 2006-07.

Second measure for structural transformation is the ratio of the manufactured exports to the primary products exports. In Pakistan, the share of primary products exports has declined from 33 percent in 1970 to 11 percent in 2007 whereas the share of manufactured exports has increased from 44 percent to 80 percent during the same period. For the above-mentioned measures, following definitions of variables is used in this study:

ag = value added by agriculture
ind = value added by manufacturing
y = nominal GDP
op =openness = ratio of the sum of imports and exports to GDP (X+M/Y*100)
X_m = manufactured exports
X_p = primary product exports
Y_{ag} = ratio of agriculture to GDP*100
Y_m = ratio of manufacturing to GDP*100
Y_{xm} = ratio of manufactured exports to GDP*100
Y_p = ratio of primary product exports to GDP *100
w = ratio of manufactured exports to primary product exports*100
$z = Ym/Y_{ag} * 100$

All the data on the above-noted variables have been collected from Pakistan economic Survey (various issues) and other Government publications.

The period of the study is from 1970 to 2007 for primary and manufactured exports and 1960 to 2007 for other above-mentioned variables.

IV. Econometric Methodology: Co-integration Analysis and Causality Testing

Time-series econometrics focuses on the time-series properties of the economic variables in order to overcome the problem of spurious regression. It is important to see whether the variables are stationary or not. A time series having unit root is called a nonsatationary time series. A time series is stationary if its mean, variance and covariance are time invariant.

Therefore examination of stationarity/nonstationarity is important before doing any empirical work which is closely linked to the tests for unit roots. Cointegration may provide useful information about the relationship between the nonsatationary variables. The theory of cointegration attempts to study the interrelationships between long-run movements in economic time series. Most economic theories are about long-run behaviour (Maddala 2001).Therefore acceptance of cointegration between two series implies that there exists a long-run relationship between them. From a statistical point of view, a long-term relationship means that the variables move together over time so that short-term disturbances from the long-term trend will be corrected (Manning and Andrianacos 1993). A lack of cointegration suggests that such variables have no long-run relationship: in principle they can drift arbitrarily far away from each other (Dickey et. al.1991).

However, this relationship may be disturbed by short run deviations from equilibrium and thus an Error Correction Model (ECM) may be an appropriate framework. If variables are cointegrated then an ECM exists which combines the long run relationships with the short run dynamics of the model known as Granger's representation theorem (Engle and Granger 1987). Before applying the cointegration technique, we need to determine the order of integration of each variable, for which we used Augmented Dicky Fuller (ADF).

Dickey and Fuller (1979) have used three different regression equations to test for the presence of a unit root.

$$\Delta Y_t = \gamma Y_{t-1} + \varepsilon_t \quad (1)$$

$$\Delta Y_t = \beta_0 + \gamma Y_{t-1} + \varepsilon_t \quad (2)$$

$$\Delta Y_t = \beta_0 + \beta_{1t} + \gamma Y_{t-1} + \varepsilon_t \quad (3)$$

In all the above regression equations the parameter of interest is γ. If $\gamma = 0$ (where, $\gamma = \rho - 1$, if $\gamma = 0$, then $\rho = 1$), Y_t has a unit root — the time series is nonstationary and the alternative hypothesis is that γ is less than zero implying the time series is stationary. Dickey and Fuller (1979) have shown that under H_0: $\gamma = 0$, the estimated t-value of the coefficient of Y_{t-1} obtained by using OLS in the above equations follows the τ (tau) statistic. This statistic is known as Dickey-Fuller (DF) test. These authors have computed the critical values of the τ-statistic However, these tables are not totally adequate and MacKinnon (1996) has considerably extended these tables.

The DF test is based on the assumption that the error term is uncorrelated. If the error term is autocorrelated in the above equations, then the DF test is modified and the Augmented Dickey-Fuller (ADF) test is conducted by augmenting the above equations by adding the lagged values of the dependent variable. The ADF assumes that the Y series follow an AR (p) process and add p lagged difference terms of the dependent variable to the right hand side of the test regression:

$$\Delta Y_t = \beta 0 + \beta_1 t + \gamma Y_{t-1} + \sum \beta_j Y_{t-p} + \varepsilon_t \qquad (4)$$

If the computed $|\tau|$ < DF or MacKinnon critical τ values then we do not reject the hypothesis that H_0: $\gamma = 0$ the given time series has unit root that is it is nonstationary or is integrated of order one or I (I) in Engle and Granger (1987) terminology. But if $|\tau|$ exceeds the DF or MacKinnon critical τ values, we reject the hypothesis that H_0: $\gamma = 0$ in which case the time series is stationary.A time series is integrated of order one if it becomes stationary after it has been differenced one time. Now if Ho: $\gamma = 0$ is rejected, then first difference stationary is confirmed which means that the original time series is integrated of order one.

The two main cointegration techniques are the two-step procedure of Engle and Granger (1987) and Johansen technique. We use cointegration methodology suggested by Johansen (1991, 1995). Johansen test is preferred to Engle-Granger (1987) technique due to many desirable features. (Arize 1994, Gonzalo 1994). Johansen method uses two test statistics for the number of cointegrating vectors: the Trace test and Maximum Eigenvalue (λ-max) Test. The former statistic tests the null hypothesis (Ho) that the number of distinct cointegrating vectors is less than or equal to r against a general alternative. The second statistic (λmax) tests Ho that the number of cointegrating vectors is r against the alternative of r+1 cointegrating vectors.

If the series are not cointegrated, standard Granger causality can be used. In the bivariate case testing, the variable X is said to cause the variable Y in the Granger sense if the forecast for Y improves when lagged values of X are taken into consideration, ceteris paribus (Charemza and Deadman 1997). This means that standard Granger causality test is based on past changes in one variable that explains the actual changes in another variable. This test consists of estimating the following equations:

$$\Delta y_t = \alpha_0 + \alpha_1 \Delta y_{t-1} + \ldots + \alpha_n \Delta y_{t-i} + \beta_1 \Delta x_{t-1} + \ldots + \beta_m x_{t-j} + + \varepsilon_t \quad (5)$$

$$\Delta xt = \lambda_0 + \lambda_1 \Delta x_{t-1} + \ldots + \lambda_i \Delta x_{t-1} + \gamma_1 \Delta yt - 1 + \ldots + \gamma_m y_{t-j} + \mu_t \quad (6)$$

Causality can be determined by estimating the above equations and testing the null hypothesis $\beta_j = \gamma_j = 0$ against the alternative hypothesis $\beta_j \neq 0$ and $\gamma_j \neq 0$ for at least some j's. There is bidirectional, unidirectional and no-causality if β_j and γ_j are statistically significant, β_j or γ_j is statistically significant and both are insignificant respectively. This test is highly sensitive to the choice of lag length that can be decided using diverse criteria and for lag selection Akaike information criterion (AIC), Schwarz information criterion (SIC) and final prediction error (FPE) are generally used. The reported F-statistics are the Wald statistics for the joint hypothesis.

V. Empirical Results

We performed ADF test to check whether data series are stationary or not. Table- 1 provides the ADF test results for level as well first difference and the MacKinnon (1996) one-sided p-values are given in the parentheses. We get mixed results in level form. But the null hypothesis that the series is first difference non-stationary is rejected as the absolute value of the τ-statistic exceeds the critical values for all the underlying variables coupled with significant MacKinnon (1996) one-sided p-values for without trend as well as with trend. Thus all the variables are non-stationary and have a unit roots.

Co-integration between economic growth and openness, economic growth and the ratio of manufacturing to GDP to the ratio of agriculture to GDP and finally economic growth and the ratio of manufactured exports to primary product exports is examined. Before applying the Johansen test, we determined the lag order of VAR for lny and lnop. Lag 1 was preferred by SC and lag 3 supported by FPE (Final Prediction Error) and AIC (Akaike Information Criterion). There was no co-integration between openness and growth as shown

by both tests at lag 1 based on SC in table- 2 as well as well as lag 3 indicated by FPE and AIC (results not reported but available on request).

Economic growth and openness are not co-integrated based on trace and maximum-Eigen-value statistics. Since the economic growth and openness series

Table: 1. ADF Test Results

Variable (log)	Level Without Trend	P	Level With Trend	P	1st Diff. Without Trend	P	1st Diff. With Trend	P
ag	0.79 (0.99)	0	-3.14 (0.108)	0	-5.62 (0.000)	0	-5.61 (0.0002)	
ind	1.45 (0.99)	0	-1.38 (0.85)	0	-3.43 (0.01)	0	-3.54 (0.04)	0
op	-1.50 (0.52)	2	-2.24 (0.45)	1	-5.71 (0.000)	0	-6.11 (0.000)	1
Xm	-2.53 (0.11)	0	-2.05 (0.55)	0	-4.95 (0.0003)	0	-5.63 (0.0002)	0
Xp	-2.91 (0.05)	0	-3.77 (0.02)	0	-4.82 (0.0004)	1	-5.07 (0.0012)	
Y	1.17 (0.99)	0	-3.50 (0.05)		-4.54 (0.0006)	0	-4.57 (0.0034)	0
Y_{ag}	-0.54 (0.87)	0	-2.56 (0.29)	0	-6.75 (0.000)	0	-6.66 (0.000)	0
Y_{m}	-2.80 (0.06)	0	-2.83 (0.19)	3	-4.47 (0.0011)	2	-5.27 (0.0007)	2
Y_{xm}	-2.92 (0.05)	0	-2.40 (0.39)	0	-5.21 (0.001)	0	-5.72 (0.0002)	0
Yp	-2.94 (0.05)	0	-4.80 (0.01)	3	-5.12 (0.0002)	0	-5.17 (0.0009)	0
W	-0.84 (0.79)	0	-4.07 (0.01)	0	-7.34 (0.000)	0	-7.13 (0.000)	0
Z	0.16 (0.96)	0	-1.52 (0.80)	0	-4.12 (0.0022)	0	-3.96 (0.01)	0

Note: Test critical values for 1%, 5% and 10% respectively for without trend are -3.57, -2.92 and -2.60 and -4.17, -3.51 -3.18 for 1%, 5% and 10% respectively for with trend and the figures in parentheses are MacKinnon (1996) one-sided p-values and p is the automatic lag length based on SIC (Schwarz Information criterion).

are not co-integrated, we performed standard Granger Causality test. This test is sensitive to lag length. We used SC to determine the lag length and lag 1 was found optimal. The test results presented in table-3 show that the null hypothesis that openness does not Granger-cause economic growth is rejected by the F-statistic at 10% level. The other null hypothesis that economic growth does not Granger-cause openness is not rejected. This suggests that outward-looking policy moderately promotes growth.

Table-2 Co-integration Test Results for ln y and ln op

Hypoth. No. of CE(s)	Trace Stat	5% Critical Value	Prob. *	Max. Eigen-Value Stat	5% Critical Value	Prob.*
None	14.643	15.495	0.067	14.122	14.264	0.052
At most 1	0.521	3.8415	0.471	0.5208	3.8415	0.470
**MacKinnon-Haug-Michelis (1999) p-values*						

Table: 3. Granger Causality Results for Economic Growth and Openness

Null Hypothesis:	Obs	F-Statistic	Probability
op does not Granger Cause y	47	2.82412	0.09
y does not Granger Cause op		0.41213	0.52

For lny and lnz, FPE and AIC indicated lag 4 and lag 1 indicated by SC as VAR order.Co-integration rank test (trace) and Maximum Eigen-value for economic growth (lny) and the ratio of manufacturing to GDP to the ratio of agriculture to GDP (lnz) reveal that the two series are co-integrated as shown by table-4. The co-integration between the series entails examining the series for error-correction (EC) as Granger representation theorem shows. To select an appropriate lag length, we used FPE, AIC, and SC and the optimal lag length was 4 based on FPE and AIC. The EC results indicate that not only the EC term is significant but also the lagged coefficients of lnz showing unidirectional causality from lnz (manufacturing as percentage of GDP to agriculture as percentage of GDP) to lny, see table-5 and also supported by the Block Exogeneity Wald test for lny and lnz, results are presented in table-6. This shows that structural

transformation represented by increasing share of manufacturing and declining share of agriculture causes economic growth.

Table-4 Co-integration Test Results for lny and lnz

Hypoth. No. of CE(s)	**Trace Stat.**	**5% Critical Value**	**Prob.****	**Max. Eigen value Stat.**	**5% Critical Value**	**Prob.****
None*	17.81	15.49	0.2405	17.76	14.26	0.6028
At most 1	0.05	`	0.0344	0.05	3.84	0.0344
** denotes rejection of the hypothesis at the 0.05 level*						
***MacKinnon-Haug-Michelis (1999) p-values*						

Table: 5 ECM Results: ln y, ln z and ln y, ln w

Ln y ln z : Dependent Variable dln y								
λ	Dlny (-1)	Dlny (-2)	Dlny (-3)	Dlny (-4)	Dlnz (-1)	Dlnz (-2)	Dlnz (-3)	Dlnz (-4)
-0.02 (-1.92)*	0.44 (2.88)*	-0.21 (-1.39)	-.004 (-.02)	0.04 (0.31)	-0.08 (-.65)	-0.14 (-1.3)	-0.18 (-.79)**	0.29 (2.62)*
Ln y ln w : Dependent Variable dln y								
λ	Dlny (-1)	Dlny (-2)	Dlny (-3)	Dlny (-4)	Dlnw (-1)	Dlnw (-2)	Dlnw (-3)	Dlnw (-4)
-0.03 (-2.99)*	-0.001 (-.006)	-0.26 (-.73]**	-0.12 (-.77)	-	-0.02 (-.93)	-0.051 (-26)*	-0.01 (-0.67)	-

*Note: figures within parentheses ate t-statistic; * and ** show 5% and 10% level of significance. λ shows error- correction coefficient.*

Table: 6. VEC Granger Causality/Block Exogeneity Wald Test: ln y & ln z

Dependent variable: D(ln y)			
Excluded	Chi-sq	df	Prob.
D(lnz)	16.07326	4	0.002
All	16.07326	4	0.002
Dependent variable: D(lnz)			
Excluded	Chi-sq	df	Prob.
D(lny)	0.750805	4	0.9449
All	0.750805	4	0.9449

Finally economic growth and the ratio of manufactured exports to primary product exports (lny and lnw) are co-integrated as the null hypothesis of no-co-integration (H_0: r=0) is rejected by both trace and maximum Eigen-value statistics as shown by table-7. AIC determined the lag length of 3 for error-correction. Vector error correction estimates of lny and lnw show that the variables not only have long-run equilibrium relationship as indicated by the significant error-correction term but the lagged terms are also significant, as shown in table-5; showing unidirectional causality from lnw to economic growth supported by the VEC Granger Causality results and presented in table-8.

Table: 7. Co-integration Test Results for ln y &ln w

Hypothesized No. of CE(s)	Trace Statistic	0.05 Critical Value	Prob.**	Maximum Eigenvalue Statistic	0.05 Critical Value	Prob.**
None *	20.19860	15.49471	0.0091	18.46373	14.26460	0.0102
At most 1	1.734869	3.841466	0.1878	1.734869	3.841466	0.1878
** denotes rejection of the hypothesis at the 0.05 level*						
***MacKinnon-Haug-Michelis (1999) p-values*						

Elliott (1998) using data (1962-93) for 10 countries of Latin America and the Caribbean explored the problem of causation between structural transformation and economic growth and have reported mixed results. Structural transformation causes economic growth in Jamaica; the line of causation is weak in Dominican Republic. For other countries, he obtained positive but statistically insignificant relationship between structural transformation and economic growth and has argued that said causation is country-specific instead of being universal.

Table: 8. VEC Granger Causality/Block Exogeneity Wald Test: ln y & ln w

Dependent variable: D(ln y)			
Excluded	Chi-sq	df	Prob.
D(ln w)	4.62	2	0.09
All	4.63	2	0.09
Dependent variable: D(ln w)			
Excluded	Chi-sq	df	Prob.
D(ln y)	2.69	2	0.26
All	2.69	2	0.26

Other studies (Afzal 2006, Khan Et.al.1995) found bidirectional causality between exports as well as manufactured exports and economic growth. Khan and Saqib (1993) concluded a positive and significant relationship between GDP and exports and have suggested export orientation towards manufactured goods. Bahmani-Oskooee and Alse (1993) have reported bidirectional causality between total exports and economic growth. While Dodaro (1993) concluded no causality between export growth and output growth for Pakistan. Dutt and Ghosh (1996) reported growth-led exports for Pakistan and USA.

VI. Conclusion and Policy Implications

Majority of the third world countries got independence from their colonial masters after World War-II. These countries were and, remained poor and underdeveloped from Western standard. In the post-War era a number of theories were put forward that aimed to break the vicious circle of underdevelopment. Structural transformation — transforming the traditional and predominant agrarian economies to fast growing industrial economies — was conceived an all curing remedy. Underdeveloped countries tried to hail this prescription but all in vain. As problems notably income inequalities were experienced. GNP growth strategy was dethroned. Basic Needs and Integrated Rural Development policies were adopted during 1970s.

During 1980s these countries faced macroeconomic instability particularly current account and fiscal deficits problems. Export promotion, free markets and lesser role of the developing countries governments were recommended by the neoclassical economists. World Bank and IMF started to play a leading and dominant role to influence macroeconomic policies of the developing countries.

An attempt has been made in this paper to empirically investigate the impact of aforesaid policies in the context of Pakistan's economy by using more recent techniques of time series econometrics. Because Pakistan's economy experienced vigorous industrialisation and economic growth started in 1960s financed by generous foreign aid. The empirical results of this supported the neoclassical view that openness Granger-causes economic growth. Granger causality suffers from certain problems and therefore the results are interpreted with caution.

Economic growth and the ratio of manufacturing to GDP to the ratio of agriculture to GDP are co-integrated. Error-correction results reveal that there is unidirectional causality from the said ratio to economic growth. This is not against expectations. A growing industrial and agriculture sectors certainly contribute significantly to economic growth. We get similar results for economic

growth and the ratio of manufactured exports to primary product exports. It is concluded that openness and structural transformation cause economic growth in Pakistan but not the other way round. This is a country-specific study and the results may not apply to other countries. As concerned to policy implications, two considerations are important. First, we used conventional measures of openness and structural transformation and therefore the results are interpreted with a grain of salt. Second, the results provide a guide for development policy that may not be treated as solutions. Development is successful if it is accompanied by the development of social, economic and political institutions and also changes in attitudes, values and structures.

References

Afzal, M. (2004), Exports-Economic Growth Nexus: Pakistan's Experience *Indian Journal of Business and Economics*, 3 (2), 315-340.

Afzal, M. (2006), Causality between Exports, World Income and Economic Growth in Pakistan, *International Economic Journal*, 20(1) 63-77.

Alam, M.Shahid (1991) Trade Orientation and Macroeconomic Performance in LDCs: An Empirical Study, Economic *Development and Cultural Change*, 39 (4), 839-847.

Arize, A.C. (1994), Cointegration Test of Long Run Relation between the Real Effective Exchange Rate and The Trade Balance, *International Economic Journal*, 8 (3), 1-9.

Bahmani-Oskooee, Mohsen, and J.Alse (1993), Exports Growth and Economic Growth: An Application of Cointegration and Error -Correction Modelling, *Journal of Developing Areas*, 27(2), 535-542.

Balassa, B (1978), Exports and Economic Growth: Further Evidence, *Journal of Development Economics,* 5(2), 181-189.

Charemza, W. W. and Deadman, D. F. (1997). New Directions in Econometric Practice: General to Specific Modelling, Cointegration and Vector Auto Regression Cheltanam, UK: Edward Elgar.

Chenery, H.B (1979), Structural Change and Development Policy*,* Baltimore, John Hopkins University Press

Chenery, H.B. and Moises Syrquin (1975) Patterns of Development: 1950-1970, London, Oxford University Press

Chenery, H.B. and A.M.Strout (1966), Foreign Assistance and Economic Development," *American Economic Review*, 56(4), 679-732.

Chow, P.C.Y. (1987), Causality between Export Growth and Industrial Development: Empirical Evidence from the NICS, *Journal of Development Economics*, 26, 55-63.

Clark, D.P. (1997), Outward Oriented Developing Economies Industrialise Faster, *International Economic Journal,* 11 (2), 75-83.

Dickey, D. A., Jansen, D. W. and Thornton, D. C. (1991), A Primer on Cointegration with an Application to Money and Income", *Review Federal Reserve Bank of ST. Louis*, 73 (2), 58-78.

Dickey, D. A. and Fuller, W. A. (1979), Distribution of the Estimators for Autoregressive Time Series with a Unit Root, *Journal of the American Statistical Association*, 74, 427-431.

Dodaro (1993), Exports and Growth: A Reconsideration of Causality, *The Journal of Developing Area*s, 27,237-244.

Dollar, David (1992), Outward-Oriented Developing Economies Really Do Grow More Rapidly: Evidence from 95 LDCs, 1976-1985, *Economic Development and Cultural Change*, 523-543.

Dutt, S.D. and D.Ghosh (1996), The Export-Growth and Economic Growth Nexus: A Causality Analysis, *The Journal of Developing Areas*, 30, 167-182.

Edwards, S. (1993), Openness, Trade Liberalisation and Growth in Developing Countries, *Journal of Economic Literature*, 1358-1393.

Engle, R.F. and C.W.J. Granger (1987), Cointegration and Error-Correction: Representation, Estimation, and Testing, *Econometrica*, 55(2), 251-276.

Elliott, D. Richards (1998), Does Growth Cause Structural Transformation, Evidence from Latin America and the Caribbean, *The Journal of Developing Area*s, 32,187-198...

Gonzalo, J., 1994**,** Five alternative methods of estimating long-run equilibrium relationships, *Journal of Econometrics*, 60, 203–233.

Greenway, David and C.H.Nam (1988), Industrialisation and Macroeconomic Performance in Developing Countries under Alternative Trade Strategies, *Kyklos,* 41(.3), 419-435.

Government of Pakistan, *Pakistan Economic Survey* (various issues), Islamabad, Ministry of Finance, Economic Advisor Wing.

Hirschman Albert O (1958), *The Strategy of Economic Development*, New Haven

Johansen, Soren **(**1991), Estimation and Hypothesis Testing of Cointegration Vectors in Gaussian Vector Autoregressive Models*, Econometrica*, 59, 1551–1580.

Johansen, Soren (1995), Likelihood-based Inference in Cointegrated Vector Autoregressive Models, Oxford University Press.

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

Khan, Ashfaque, H. Afai Malik, and Lubna Hasan (1995), Exports, Growth and Causality: An Application of Cointegration and Error -Correction Modelling, *The Pakistan Development Review*, 34(4), 1003-1011.

Kuznet, Simon (1971), *Economic Growth of Nations: Total Output and Production Structure*, Cambridge Mass, Harvard University Press.

Kuznet, Simon (1966), Modern Economic Growth: Rate, Structure and Spread, New Haven, Connecticut, Yale University press.

Lewis, W. Arthur ((1954), Economic Development with Unlimited Supplies of Labour, *Manchester School of Social and Economic Studies*, 22, 139-91.

Mackinnon, James G, (1996), Numerical Distribution Functions for Unit Root and Cointegration Tests, *Journal of Applied Econometrics*, 11, 601-618.

Mackinnon, James G, Alfred A Haug and L. Michelis (1999), Numerical Distribution Functions: Likelihood Ratio Tests for Cointegration, *Journal of Applied Econometrics,* 14, 563-577

Maddala, G.S (2001), Introduction to Econometrics, 3rd edition, John Wiley & Sons.

Manning, L. M. and Adriacanos, D. (1993). Dollar Movements and Inflation: a

Cointegration Analysis, *Applied Economics*, 25, 1483-1488.

Nurkse, Ragnar (1958), The Conflict between Balanced Growth and International Specialisation, Lectures on Economic Development (Istanbul University), Faculty of Economics and Faculty of Political Science (Ankara University), Istanbul, pp. 170-176.

Nurkse, Ragnar (1953**),** The Problems of Capital Formation in Underdeveloped Countries, Oxford University Press

Rosestein-Rodan, Paul N. (1943), *Problems of Industrialisation of Eastern and South –Eastern Europe*, Economic Journal, 204-207.

Rostow, W.W. (1961), *The Stages of Economic Growth*: A Non- Communist Manifesto, Cambridge.

Salvatore, D. and Hatcher (1991), Inward - Oriented and Outward - Oriented Trade Strategies, *Journal of Development Studies*, 27(3), .7-25.

Sims, C.A. (1972), "Money, Income and Causality, *American Economic Review*,.62(.4), 540-552.

Todaro, Michael P. and Stephen C. Smith (2003), Economic Development, 8th edition, Singapore, Pearson Education.

Tyler, W.G. (1981), Growth and Export Expansion in Developing Countries: Some Empirical Evidence, *Journal of Development Economics*, 9,121-130.

World Bank, World Development Report 1987, New York, Oxford University Press.