Indian Journal of Accounting, Vol XIVII (1), June 2015, ISSN-0972-1479

CAUSALITY BETWEEN EXPORT AND ECONOMIC GROWTH: A CASE STUDY OF INDIA

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ABSTRACT

T*he study investigates the relationships between export and economic growth, over the period April 2005 to March 2014. Index of industrial production is used as indicator of economic growth. Johansen's co-integration and Granger causality test have been applied to explore the long-run & short run equilibrium relationship between export and economic growth. The analysis reveals that export and economic growth are co-integrated and, hence, a long-run equilibrium relationship exists between them. It is observed that the export and index of industrial production as indicator of economic growth are positively related to each other. The export is found to be significant in determining economic growth and economic growth significantly affects export. In the Granger causality sense, export granger causes economic growth and economic growth granger causes export or there is bi-directional causality between export and economic growth in both long run and short-run.*

Key Words: Export, Economic Growth, Causality Test, Co-integration Test

INTRODUCTION

The outside exchange of India portrays relentless shortage since its commencement because of poor exchange execution. Fares were included low esteem included rural items. So as to build offer of produced merchandise India received Import substitution industrialization strategies amid 1950 - 1960. A few import substitution businesses are produced and shielded from outside rivalries. Local interest of outside products is, moved towards locally created ones. These strategies came about improvement of numerous essential and profitable modern units. The economy thus watches incredible development in 1960s. These internal arranged exchange arrangements effectively established framework of industrialization.

Numerous creating economies, which received import substitution approaches amid, face drowsy financial execution and embraced fare advancement arrangements. A considerable lot of these economies fundamentally accomplished high financial development rate. India propelled by exceptional development these dynamic economies consented to change its economy in 1975s, however kept up its defensive approaches until late 1990.

These defensive approaches slowly obliterate aggressively of household generation units i.e. nutritional categories and material.

Development of world exchange association (WTO) in 1995 and its amendment by dominant part of world economies changed the example of world exchange. India embraced fare drove development technique amid mid 2000s and opened its economy for universal rivalry without accomplishment of noteworthy intensity in any generation area. The economy as an outcomes watch noteworthy increment in exchange shortfall.

The achievement of fare drove development methodology relies on upon level of specialization underway of products having near favorable position. Those economies, which intensely build up its creation side, watch critical monetary success. The defensive approaches brought about pulverization of intensity, which thus brought about noteworthy contortion of exchange and monetary development amid post liberalization period. The customary measure for genuine monetary action is the (GDP) or the gross national item (GNP). Then again, the information inaccessibility for these variables on a month to month premise confines numerous analysts to utilize IIP as a different option for consolidate the genuine yield. The ascent in mechanical creation flags the financial development (Maysami, Howe, & Hamaz, 2004). Also, it may illuminate more return assortment than GNP or GDP (Ratanapakorn & Sharma, 2007).Based on the above talk, the present study tries to examine the long run and short run relationship between the fare and financial development. Fare drove development speculation amended by numerous studies in India give generally bigger weight of monetary development to fares. This study researches climate fare cause development or development cause financial thriving in short and long run. This study will give approach to long run monetary flourishing of India.

The rest of this paper is, organized in following order; Section 2 presents review of literature. Section 3, presents data, methodology and results, whereas Section 4 concludes the study.

LITERATURE REVIEW

Fare drove development speculation is experimentally explored for determination of effect of fares on financial development. There are by and large two sorts of exact studies i.e. Cross-sectional studies, which focus fare affect on gathering on nations, and cross-country time arrangement studies, which separately explore fare sway monetary success of single nation.

Lorde (2011) examines legitimacy of fare drove development speculation for Mexico, utilizing co-mix and Granger causality for the time of 1960-2003. The observationally result uncovers just short run causality from fare to development. In long run, he watches reverse causality running from financial development to fares. Safdari et al (2011) investigates causal relationship in the middle of fare and monetary development for 13 creating nations, for time of 1988-2008, utilizing board VECM. There result delineates unidirectional converse causality running from financial development to fares. Ullah et al., (2009) re-explored the fare drove development speculation utilizing time arrangement econometric methods over the time of 1970 to 2008 for Pakistan. The outcomes uncover that fare extension prompts monetary development.

Pazim (2009) tried the legitimacy of fare drove development speculation in three nations by utilizing board information examination. Also, it is presumed that there exists no noteworthy relationship between the size on national pay and measure of fares for these nations on

the premise of restricted arbitrary impact model. The board unit root test demonstrates that the procedure for both GDP and fares at first look is not stationary, while the board co-mix test shows that there is no co-combination relationship between the fares and financial development for these nations. Rangasamy and Logan (2008) inspected the fares and monetary development relationship for South Africa, and give the proof that the unidirectional Granger causality keeps running from fares to financial development. Parida and Shahoo (2007) analyzes export driven development hypothesis for four creating nations of South Asia like India, Pakistan, Bangladesh and Sri Lanka, utilizing Pedroni's board co-mix system. The outcomes adjusts legitimacy of fare drove development hypothesis. Cross-sectional studies accommodates blended conduct of fares on financial development.

Jordaan & Eita (2007) examined the causality in the middle of fares and GDP of Namibia for the period 1970 to 2005. The fare drove development theory is tried through Granger causality and co-coordination models. It tests whether there is unidirectional or bi-directional causality in the middle of fares and GDP. The outcomes uncovered that fares Granger-cause GDP and GDP per capita, and proposed that the fare drove development methodology through different motivating forces has a positive impact on development. Tang (2006) stated that there is no long-run relationship among exports, real Gross Domestic Product, and imports. This study further shows no short- and long-run causality between export expansion and economic growth in China on the basis of Granger causality test while economic growth does Granger-cause imports in the short-run. Mah (2005) studied the long-run causality between exports and economic growth for China with the help of the significance of error correction term. This study indicates that export expansion is insufficient to explain the patterns of real economic growth.

Shirazi et al (2004) concentrated on the short-run and long-run relationship among genuine fares, genuine imports, and monetary development on the premise of co-combination and multivariate Granger causality test as grew by Toda and Yamamoto (1995) for the period 1960 to 2003. This study demonstrated a long-run relationship among imports, sends out, and financial development and discovered unidirectional causality from fares to yield. Yet, it didn't locate any huge causality in the middle of imports and fares. Lin & Yo-Long (2003) expressed that 10 for each penny increment in fares cause 1 for every penny increment in GDP in the 1990s in China on the premise of new proposed estimation technique, when both immediate and roundabout commitments are considered.

Amavilah & Voxi (2003) decided the part of fares in monetary development by examining Namibia's information from 1968 to 1992. Results clarified the general significance of fares, yet the study discovers no detectable indication of quickened development because of fares. Hatemi-j (2002) looks at causal relationship between fare development and financial development in Japan by increasing Granger causality test, by bootstrap method for time of 1960-1999. The estimation result portrays bi-directional causality run. Ramos (2001) Investigates causal relationship between fares, imports, and monetary development in Portugal, for the time of 1865-1998, utilizing Johansen co-coordination and Granger causality test. The outcome demonstrates no causality in any run.

Subasat (2002) researched the experimental linkages in the middle of fares and financial development. The study proposed that the more fare arranged nations like center wage nations become speedier than the generally less fare situated nations. The study further demonstrated that fare advancement does not have any noteworthy effect on monetary development for low and high salary nations. Vohra (2001) demonstrated the relationship between the fares and financial development in India, Pakistan, Philippines, Malaysia, and Thailand for the period 1973 to 1993. The exact results demonstrated that when a nation has accomplished some level of monetary improvement then the fares have a positive and huge effect on financial development.

The study additionally demonstrated the significance of liberal business arrangements by seeking after fare development methodologies, and by drawing in remote ventures. Ekanayake (1999) investigates causal relationship in the middle of fare and monetary development in eight Asian creating nations, utilizing yearly time arrangement information of 1960- 1997. Results accommodate legitimacy of fare drove development speculation for all nations with the exception of Malaysia. Erfani (1999) inspected the causal relationship between financial execution and fares over the time of 1965 to 1995 for a few creating nations in Asia and Latin America. The outcomes demonstrated the huge positive relationship in the middle of fares and financial development. This study gives the proof of fare drove development hypothesis.

Ukpolo (1998) utilizes Granger causality test to focus the relationship in the middle of fares and monetary development in South Africa for the time of 1964-1993. The outcomes neglect to accept fare drove development as opposite causality is watched. Thornton (1997) analyzes legitimacy of fare drove development for six European nations, from mid 19th century to 1913, utilizing cointegration and granger causality. The outcomes show blended conduct: Unidirectional running from fare to GDP in Italy, Norway, and Sweden, Causality running from GNP to Exports in UK, while bidirectional causality is, see in Denmark and Germany. Kim (1993) has inspected the real patterns of key macroeconomic variables in South Korea and Chile and connected them to fare execution. Kim recognized fares as a noteworthy wellspring of monetary development and gave the confirmation of the legitimacy of the case that an open and exchange arranged economy is not just the best ensure for long haul financial development, however it helps the introductory effects of outer stuns. Kim, further, specified that there are components other than exchange which increment monetary development. Darrat (1986) took a shot at four Asian nations, (Hong Kong, South Korea, Singapore, and Taiwan) and discovered no confirmation of unidirectional causality from fares to financial development in all the four economies. On account of Taiwan, nonetheless, the study identified unidirectional causality from financial development to fare development.

The investigation of the progress of the connection between development of fares and financial development has been tended to by various explores in the setting of India. (Dash, 2009) investigates the causal relationship between development of fares and financial development in India for the post-liberalization period 1992-2007, and the outcomes demonstrate that

there exists a long-run relationship in the middle of yield and fares, and it is unidirectional, running from development of fares to yield development. Raju et al (2005) dissected the relationship in the middle of fares and monetary development in India over the preliberalization period 1960-1992, and discovered solid backing for unidirectional causality from fares to financial development utilizing Granger causality relapses in view of stationary variables, with and without a slip remedy term. Sharma and Panagiotidis (2005) test the fare drove development speculation in the connection of India, and the outcomes fortify the contentions against the fare drove development theory for the instance of India.

Chandra (2002) discovered bi-directional causal relationship between development of fares and GDP development which is a short-run causal connection, as co-incorporation between development of fares and GDP development was not found. Kemal et al (2002) discovers a positive relationship in the middle of fares and financial development for India and also for different economies of South Asia. Anwar and Nidugala (2001) found that fares had a critical part in affecting GDP development in the 1980s. Dhawan and Biswal (1999) look at the same issue for the period 1961 to 1993, and find that development in GDP causes development in fares while causality from fares to GDP gives off an impression of being a short run wonder. Ghatak et al (1997) reasoned that development of fares is created by yield development in India. Bhat (1995) reevaluates the fares financial development nexus for India, and discovers proof of bi-directional causality between development of fares and monetary development. Sharma and Dhakal (1994) offer some proof of the fare drove development theory for India, yet the experimental confirmation offered by it is inconsistent. The study reasons that the salary and fare arrangement for India are non-stationary utilizing the Phillip-Perron test. It tests for causality, yet does not test for co-reconciliation. Be that as it may, the right utilization of Granger tests requires the ID of a conceivable co-incorporating relationship. Nandi and Biswas (1991) discovered the proof of unidirectional causality from development of fares to financial development. This study does not test for stationarity and behavior Sims causality test on the levels of the wage and fare variables. Given that the levels of the wage and fare variables are typically non-stationary, the outcomes are untrustworthy.

Based on the above discussion, the present study tries to investigate the long run and short run relationship between the export and economic growth by considering the following model:

$$Xt = (EXPORTt, IIPt)'$$

Where, EXPORT is the monthly export data in Rs. billion, IIP is industrial production index, and X is a 2×1 vector of variables.

DATA & METHODOLOGY

The aim of this paper is to investigate the relationship between the export and economic growth. To accomplish the research objective monthly data ranging from April 2005 to March 2014 are obtained which comprises 108 data points for the analysis. The choice of study period is based on the availability of data series. Descriptions of variables and data sources are presented in Table 1. All variables are converted into natural logarithmic form.

Table 1 : Description of Variables

Acronyms	Construction of Variable	Data Source
EXPORT	Natural Logarithm of the Export (Rs. Billon)	RBI Website
IIP	Natural Logarithm of the Index of Industrial Production	RBI Website

The present study employs the time series data analysis technique to study the relationship between the export and economic growth. In a time series analysis, the results might provide a spurious if the data series are non-stationary. Thus, the data series must obey the time series properties i.e. the time series data should be stationary, meaning that, the mean and variance should be constant over time and the value of covariance between two time periods depends only on the distance between the two time period and not the actual time at which the covariance is computed. The most popular and widely used test for stationary is the unit root test. The presence of unit root indicates that the data series is non-stationary. The standard procedures of unit root test namely the Augmented Dickey Fuller (ADF) (1979) (1981) is performed to check the stationary nature of the series. Assuming that the series follows an AR (p) process the ADF test makes a parametric correction and controls for the higher order correlation by adding the lagged difference terms of the dependent variable to the right hand side of the regression equation. In the ADF test null hypothesis is that data set being tested has unit root. This provides a robustness check for stationary. The unit root tests also provide the order of integration of the time series variables. In a multivariate context if the variable under consideration are found to be I (1) (i.e. they are non-stationary at level but stationary at first difference), but the linear combination of the integrated variables is I (0), then the variables are said to be co-integrated (Enders, 2004). The Augmented Dickey Fuller (ADF) (1979; 1981) is performed to check the stationary nature of the series. The complete model with deterministic terms such as intercepts and trends is shown in equation (1).

$$\Delta Y_t = \alpha + \pi + \sum_{i=1}^{m} \delta Y_{t-1} \Delta\beta_i + Y_{t-1} + \varepsilon_t \qquad (1)$$

Lag length for VAR system is, selected based on minimum sequential modified LR test statistic (each test at 5% level) (LR), Final Prediction Error (FPE), Akaike Information Criterion (AIC), Schwarz Information Criterion (SC) and Hannan-Quinn Information Criterion (HQ). The estimation of co-integration using this method, involves estimation of following unrestricted VAR model

$$Y_t = A_0 + \sum_{i=1}^{n} A_i Y_{t-i} + \varepsilon_t \qquad (2)$$

Where: Yt is n × 1 vector of non stationary I (1) variables, Ao is an n × 1 vector of constants, *n* is no of lags. A*i* is an n × n matrix of estimated parameters. Yt is n × 1 vector independent error term.

With the non-stationary series, co-integration analysis has been used to examine whether there is any long run relationship exists. However, a necessary condition for the use of co-

integration technique is that the variable under consideration must be integrated in the same order and the linear combinations of the integrated variables are free from unit root. According to Engel and Granger (1987), if the variables are found to be co-integrated, they would not drift apart over time and the long run combination amongst the non-stationary variables can be established. To conduct the co-integration test, the Engel and Granger (1987) or the Johansen and Juselius (1990) or the Johansen (1991) approach can be used. The Engel-Granger two step approaches can only deal with one linear combination of variables that is stationary. In a multivariate practice, however, more than one stable linear combination may exist. The Johansen's co-integration method is regarded as full information maximum likelihood method that allows for testing co-integration in a whole system of equations.

The Johansen methods of co-integration can be written as the following vector autoregressive framework of order p.

$$X_t = A_0 + \sum_{j=1}^{p} B_j X_{t-i} + \varepsilon_t \quad (4)$$

Where, Xt is an n×1 vector of non stationary I(1) variables, A0 is an n×1 vector of constants, p is the maximum lag length, Bj is an n×n matrix of coefficient and et is a n×1 vector of white noise terms. The number of characteristic roots can be tested by considering the following trace statistic and the maximum eigenvalue test.

$$\lambda_{trace}(r) = -T \sum_{i=j+1}^{p} \ln+(1-\hat{\lambda}_j) \quad (5)$$

$$\lambda_{max}(r, r+1) = -T \ln+(1-\hat{\lambda}_j) \quad (6)$$

Where, r is the number of co-integrating vectors under the null hypothesis, T is the number of usable observations and $\hat{\lambda}_j$ is the estimated value for the j^{th} ordered characteristic roots or the eigenvalue from the Π matrix.

A significantly non-zero eigenvalue indicates a significant co-integrating vector. The trace statistics is a joint test where the null hypothesis is that the number of co-integration vectors is less than or equal to r against an unspecified general alternative that there are more than r. Whereas, the maximum eigenvalue statistics test the null hypothesis that the number of co-integrating vectors is less than or equal to r against the alternative of r+1 (Enders, 2004) (Brooks, 2002).

At the end, the Granger Causality test (Engel & Granger, 1987) has been used to find out the direction of causality between the variables. To test for Granger Causality, the following bi-variate regression model can be used:

$$y_t = \alpha_0 + \sum_{i=1}^{m} \alpha_i Y_{t-i} + \sum_{j=1}^{n} \beta_j X_{t-i} + \varepsilon_t \quad (9)$$

$$x_t = \omega_0 + \sum_{i=1}^{m} \gamma_i Y_{t-i} + \sum_{j=1}^{n} \theta_j X_{t-i} + \varepsilon_t \quad (10)$$

If all the coefficients of x in the first regression equation of y, i.e. βi for i = 1.....l are significant, then the null hypothesis that x does not cause y is rejected.

EMPIRICAL ANALYSIS

The descriptive statistics for all the variables under study, namely, export and index of industrial production as indicator of economic growth are presented in Table 2. The value of skewness and kurtosis indicate the lack of symmetric in the distribution. Generally, if the value of skewness and kurtosis are 0 and 3 respectively, the observed distribution is said to be normally distributed. Furthermore, if the skewness coefficient is in excess of unity it is considered fairly extreme and the low (high) kurtosis value indicates extreme platykurtic (extreme leptokurtic). From the table it is observed that the frequency distributions of underlying variables are not normal. The significant coefficient of Jarque-Bera statistics also indicates that the frequency distributions of considered series are not normal. The value of standard deviation indicates that the export is relatively more volatile as compare to IIP.

Table 2 : Descriptive Statistics of Variables

	LNEXPORT	LNIIP
Mean	6.668227	4.998349
Median	6.620861	5.030433
Maximum	7.491668	5.268889
Minimum	5.78748	4.596129
Std. Dev.	0.481634	0.165739
Skewness	-0.008158	-0.744918
Kurtosis	1.797241	2.7166
Jarque-Bera	6.511032	10.34966
Probability	0.038561	0.005657
Sum	720.1685	539.8217
Sum Sq. Dev.	24.82091	2.939245
Observations	108	108

Source: Author's Estimation

To check the stationarity of the underlying data series, we follow the standard procedure of unit root testing by employing the Augmented Dickey Fuller (ADF) test. The results are presented in Table 3. On the basis of the ADF test, all the series are found to be non-stationary at level with intercept. However, after taking the first difference these series are found to be stationary at 1, 5 and 10 percent level. Thus the stationary test indicates that all series are individually integrated of the order I (1).

Table 3: Result of Augmented Dickey-Fuller Unit Root Test

Variable			Trend		Trend & Intercept		None	
			t-Statistic	Prob.*	t-Statistic	Prob.*	t-Statistic	Prob.*
D(LNEXPORT)	Augmented Dickey-Fuller test statistic		-5.8963	0	-5.8676	0	-5.6051	0
	Test critical values:	1% level	-3.4957		-4.0505		-2.5874	
		5% level	-2.89		-3.4545		-1.9439	
		10% level	-2.582		-3.1529		-1.6147	
D(LNIIP)	Augmented Dickey-Fuller test statistic		-3.0293	0.0368	-19.2725	0	-2.6288	0.0092
	Test critical values:	1% level	-3.5216		-4.0696		-2.5966	
		5% level	-2.9012		-3.4635		-1.9453	
		10% level	-2.588		-3.1582		-1.6139	

*MacKinnon (1996) one-sided p-values.

Source: Author's Estimation

The presence and the number of co-integrating relationships among the underlying variables are tested through the Johansen procedure i.e., Johansen and Juselius (1990) and Johansen (1991). Specifically, trace statistic and the maximum eigenvalue are used to test for the number of co-integrating vectors. The result of VAR leg order selection criteria are presented in the Table 4. Leg order selected for the study is based on LR, FPE, AIC and HQ criterion. The results of both trace statics and the maximum eigenvalue test statistics are presented in Table 5. The trace statistic indicates two co-integrating equations and the maximum eigenvalue statistics identify no co-integrating equations. The results show that a long-run equilibrium relationship exists between the export and economic growth.

Table 4 : VAR Lag Order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	80.08824	NA	7.19E-04	-1.561765	-1.509661	-1.540678
1	264.3717	357.5099	1.95E-05	-5.167434	-5.011124	-5.104173
2	285.1501	39.47899	1.40E-05	-5.503002	-5.242485	-5.397567
3	295.2084	18.70831	1.24E-05	-5.624167	-5.259443*	-5.476557
4	302.4899	**13.25247***	**1.16e-05***	**-5.689799***	-5.220868	**-5.500014***
5	304.2307	3.098513	1.21E-05	-5.644613	-5.071476	-5.412654
6	308.7351	7.837706	1.20E-05	-5.654702	-4.977358	-5.380569
7	311.2294	4.240276	1.24E-05	-5.624588	-4.843037	-5.30828
8	316.1319	8.138234	1.22E-05	-5.642639	-4.756881	-5.284156

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion
Source: Author's Estimation

Table 5: Result of Johansen's Co-integration Test

Hypothesized No. of CE(s)	Eigen value	Trace Statistic	0.05 Critical Value	Prob.**	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.11498	20.72623	18.39771	**0.0232**	12.58088	17.14769	0.2046
At most 1 *	0.07604	8.14535	3.841466	**0.0043**	8.14535	3.841466	**0.0043**

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level
Max-eigenvalue test indicates no cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values
Source: Author's Estimation

The co-integration results indicate that causality exists between the co-integrated variables but it fails to show us the direction of the causal relationship. The pair-wise Granger Causality test (1987) is performed between all possible pairs of variables to determine the direction of causality. The rejected hypotheses are reported in Table 6. The results show that there is bidirectional causality exists between export and economic growth.

Table 6: Result of Granger Causality Test

Null Hypothesis:	Obs	F-Statistic	Prob.	Decision
LNIIP does not Granger Cause LNEXPORT	104	2.63721	0.0387	Reject
LNEXPORT does not Granger Cause LNIIP		3.01378	0.0218	Reject

Source: Author's Estimation

CONCLUSION

This study examined the inter-linkage between the Indian export and economic growth using Johansen's co-integration test and Granger causality test framework. The analysis used monthly data over the period April 2005 to March 2014 which is obtained from RBI website. The index of industrial production is used to represent the economic growth. It is believed that, the selected macroeconomic variables namely index of industrial production, among others; represent the state of the economy.

To conclude, the analysis revealed that the index of industrial production represented as economic growth in study formed significant long-run relationship with export. The Johansen's co-integration test suggests that the export and economic growth are co-integrated with each other. It is observed that in the long-run, export and index of industrial production as indicator of economic growth are positively related to each other. The export is found to be significant in determining economic growth and economic growth significantly affects export.

The findings from Granger causality test indicate a bi-directional causality between export and economic growth. Export granger causes economic growth and economic growth granger causes export in both long run and short-run.

The present study confirms the beliefs that export continue to affect the economic growth. However, the limitations of the study should not be over looked. The present study is limited to only two selected macroeconomic variables. Inclusion of more variables with a longer time period may explain the research objective in better way. A logical extension of the study can be done by including more variables and analyzing it.

BIBLIOGRAPHY

- Amavilah, & Voxi, H. (2003). Exports and Economic Growth in Namibia, 1968-1992. *Economic Working Paper Series* .
- Anwar, M., & Sampath, R. (2000). Exports and Economic Growth. *Indian Economic Journal , 47* (3), 79-88.
- Bhat, S. (1995). Export and Economic Growth in India. *Artha Vijana , 44*, 350-358.
- Brooks, C. (2002). *Introductory Econometrics for Finance* (2nd ed.). Cambridge University Press.
- Chandra, R. (2002). Export Growth and Economic Growth: An Investigation of Causality in India. *Indian Economic Journal , 49*, 64-73.
- Darrat, A. F. (1986). Trade and Development: The Asian Experience. *Cato Journal , 6* (2), 695-699.
- Dash, R. (2009). Revisited Export-Led Growth Hypothesis: An Empirical Study on India. *South Asian Economic Journal , 10* (2), 305-324.
- Dhawan, U., & Biswal, B. (1999). Re-examining Export-led Growth Hypothesis: A Multivariate Cointegration Analysis for India. *Applied Economics , 31*, 525-530.
- Dickey, D. A., & Fuller, W. A. (1979). Distribution of the Estimators for Autoregressive Time Series with a Unit Root. *Journal of American Statistical Association , 74* (366), 427-431.
- Dickey, D. A., & Fuller, W. A. (1981). Likelihood Ratio Statistics for Autoregressive Time Series with a Unit Root. *Econometrica: Journal of the Econometric Society , 49* (4), 1057-1072.
- Ekanayake, E. M. (1999). Exports and Economic Growth in Asian Developing Countries: Cointegration and Error-Correction Models. *Journal of Development Economics , 24* (2), 43-56.
- Enders, W. (2004). *Applied Econometric Time Series* (2nd ed.). Wiley Series in Probability and Statistics.
- Engel, R. F., & Granger, W. J. (1987). Co-Integration and Error Correction: Representation,Estimation, and Testing. *Econometrica , 55* (2), 251-276.
- Erfani, G. R. (1999). Export and Economic Growth in Developing Countries. *International Advances in Economic Research , 5* (1), 147-148.
- Ghatak, Subrata, & Wheatley, S. (1997). Export Composition and Economic Growth: Cointegration and Causality Evidence for India. *Weltwirtschaftliches Archiv , 133* (3), 538-553.
- Hatemi-j, A. (2002). Export Performance & Economic Growth Nexus in Japan: a Bootstrap Approach. *Japan and World Economy , 14*, 25-33.
- Johansen, S. (1991). Estimation and Hypothesis testing of Cointegration Vector in Gaussian Vector Autoregressive Models. *Econometrica , 59*, 1551-1581.
- Johansen, S., & Juselius, K. (1990). Maximum Likelihood Estimation and inference on Cointegration with application to the Demand for Money. *Oxford Bulletin of Economics and Statistics , 52* (2), 169-210.
- Jordaan, A. C., & Eita, J. H. (2007). Export and Economic Growth in Namibia: A Granger Causality Analysis. *South African Journal of Economics , 75* (3), 540-547.
- Kemal, A. R., Din, M., Qadir, U. L., Fernando, & Colombage, S. (2002). Exports and Economic Growth in South Asia. *A Study prepared for the South Asia Network of Economic Research Institutes* .
- Kim, K. S. (1993). Economic Implications of NAFTA for East Asia—With Special Reference to US and East Asian Trade and Investment Flows. *paper presented at the Korea Economic Institute and Princeton University Symposium* . Princeton University.

- Lin, & Yo–Long. (2003). *Exports, Terms of Trade, and Growth-Master Thesis.* National Chengchi University.
- Lorde, T. (2011). Export-led Growth: A Case Study of Mexico. *International Journal of Business, Humanities and Technology* , 33-44.
- Mah, J. S. (2005). Export Expansion, Economic Growth and Causality in China. *Applied Economics Letters , 12*, 105-107.
- Maysami, R. C., Howe, L. C., & Hamaz, M. A. (2004). Relationship between Macroeconomic Variables and Stock Market Indices: Cointegration Evidence from Stock Exchange of Singapore's All-S Sector Indices. *Jurnal Penguruson , 24*, 47-77.
- Nandi, S., & Biswas, B. (1991). Export and Economic Growth in India: Empirical Evidence. *Indian Economic Journal* , 53-59.
- Nidugala, G. K. (2001). Exports and Economic Growth in India: An Empirical Investigation. *Indian Economic Journal , 47* (3), 67-78.
- Parida, P. C., & Shahoo, P. (2007). Export-led Growth in South Asia: A Panel Co-integration Analysis. *International Economic Journal , 21* (2), 155-175.
- Pazim, K. H. (2009). Panel Data Analysis of 'Export-led Growth Hypothesis in BIMP-EAGA Countries. *MPRA* , Paper- 13264.
- Raju, Sudhakar, S., & Kurien, J. (2005). Exports and Economic Growth in India: Cointegration, Causality and Error-Correction Modeling: A Note. *Indian Journal of Economics and Business , June*.
- Ramos, F. F. (2001). Exports, imports, and economic growth in Portugal: evidence from causality and cointegration analysis. *Economic Modelling , 18*, 613-623.
- Rangasamy, & Logan. (2008). Exports and Economic Growth: The Case of South Africa. *Journal of International Development , 21* (5), 603-617.
- Ratanapakorn, O., & Sharma, C. S. (2007). Dynamics analysis between the US Stock Return and the Macroeconomics Variables. *Applied Financial Economics , 17* (4), 369-377.
- Safdari, M., Mahmoodi, M., & Mahmoodi, E. (2011). The Causality Relationship between Export and Economic Growth in Asian Developing Countries. *American Journal of Scientific Research , 25*, 40-45.
- Sharma, A., & Panagiotidis, T. (2005). An Analysis of Exports and Growth in India: Some Empirical Evidence. *Review of Development Economics , 9* (2), 232-248.
- Sharma, S. C., & Dhakal, D. (1994). Causal Analysis between Exports and Economic Growth in Developing Countries. *Applied Economics , 26*, 1145-1157.
- Shirazi, N. S., & Manap, T. A. (2004). Exports and Economic Growth Nexus: The Case of Pakistan. *The Pakistan Development Review , 43* (4), 563-581.
- Subasat, T. (2002). Does Export Promotion Increase Economic Growth? Some Cross-Section Evidence. *Development Policy Review , 20* (3), 333-349.
- Tang, T. C. (2006). New Evidence on Export Expansion, Economic Growth and Causality in China. *Applied Economics Letters , 13*, 801-803.
- Thornton, J. (1997). Export and Economic Growth: Evidence from 19th Century Europe. *Economics Letters , 55*, 235-240.
- Toda, H. Y. and Yamamoto, T. (1995). Statistical inference in vector autoregression with possibly integrated processes, *Journal of Econometrics, 66*, 225–50.
- Ukpolo, V. (1998). Export and Economic Growth in South Africa: Evidence From Co-integration and Granger Causality Test. *The African Economic & Business Review , 1* (1), 1-15.
- Ullah, Zaman, Farooq, & Javid. (2009). Cointegration and Causality between Exports and Economic Growth in Pakistan. *European Journal of Social Sciences , 10* (2), 264-272.
- Vohra, R. (2001). Export and Economic Growth: Further Time Series Evidence from Less Developed Countries. *International Advances in Economic Research , 7* (3), 345-350.