# "INTERNATIONAL TRADE, FINANCIAL DEVELOPMENT AND ECONOMIC GROWTH NEXUS IN BANGLADESH: EMPIRICAL EVIDENCE FROM TIME SERIES APPROACH"

**Md. Gazi Salah Uddin**
Senior Lecturer, Department of Business Administration
East West University, 43, Mohakhali, Dhaka-1212, Bangladesh
Tel: +88-01715201727
E-Mail: gsu@ewubd.edu / rimsust2002@yahoo.com

**Liton Chakraborty**
Lecturer, School of Business
University of Liberal Arts Bangladesh
House 56, Rd 4/A @ Satmasjid Road, Dhanmondi, Dhaka-1209, Bangladesh
Phone: +88-02-9661255, 9661301, Fax: +88-02-9670931, Cell: +88-01911218811
E-mail: litonc@gmail.com / liton.chakraborty@ulab.edu.bd

## ABSTRACT

*Financial development and international trade, developed from empirical growth literature, are identified as macroeconomic variables highly correlated with economic growth. This study employs the co-integration and Granger causality tests to investigate long-run relationship and the direction of causality between financial development, international trade and real income growth in Bangladesh. The estimation procedure also passes a battery of diagnostic tests indicating stability of the long run and short run estimates. The results of the study do not reveal any long-run relationship between economic growth and financial development as scaled by money supply and domestic credits, and between exports and economic growth. On the other hand, Granger causality test results suggest that the export-led growth hypothesis can be inferred for Bangladesh economy in the short run. However, both export and import growth cause changes in the money supply in the short run. The nexus is unidirectional. Long run GDP growth has an effect on income growth in the short run. Finally, this study has shown that import growth causes a change in the domestic credit in the short run. The findings of this paper have important implications for macroeconomic policies of the nation.*

***Keywords:*** International Trade, Financial Development, Co-integration and Granger Causality Tests

***JEL Classification:*** F13, F14, C22

## INTRODUCTION

Financial development and international trade are identified as macroeconomic variables as being highly correlated with economic growth performance across countries in the empirical growth literature (Beck, 2002). There are also empirical studies in the literature searching the channels through which both financial development and trade openness affect economic growth. Kletzer and Bardhan (1987) incorporate financial sector into the Heckscher-Ohlin trade model and show that financial sector development gives countries a comparative advantage in industries that rely more on external financing.

The relationship between financial development and economic growth has now well recognized in the literature that financial development is crucial for economic growth (Calderon and Liu, 2003) as it is a necessary condition for achieving a high rate of economic growth (Chang, 2002) and has a strong positive relationship with economic growth (Mazur and Alexander, 2001). On the other hand, financial development significantly reduces economic growth for countries in Latin America experiencing relatively high inflation rates (De Gregorio and Guidotti 1995). Patrick (1966) developed two hypotheses testing the possible directions of causality between financial development and economic growth, that is, the supply-leading hypothesis, where it posits a causal relationship from financial development to economic growth, and the demand-following hypothesis, where it postulates a causal relationship from economic growth to financial development. In the empirical literature, McKinnon (1973), King and Levine (1993), Neusser and Kugler (1998) and Levine et al. (2000) support the supply-leading hypothesis while Gurley and Shaw (1967), Goldsmith (1969), and Jung (1986) support the demand-following hypothesis. Yildirim, Öcal and Erdogan (2008) reconfirm the 'supply leading' hypothesis for Turkey taking geographic components and spatial dimension into account. Vuranok (2009) supports the positive

association between financial development and economic growth rate in Turkey in the short run.

In the context of Asian countries, Sinha (1999) claims along the same line for Japan, Malaysia, Philippines and Sri Lanka whereas for (South) Korea, Myanmar, Pakistan and Thailand, furthermore, he asserts that export instability and economic growth are directly related. He also postulates that in most cases economic growth is positively associated with domestic investment while the findings are mixed for India. On the other hand, Mukherjee and Deb (2008), Acharya, Amanulla and Joy (2009), confirm unidirectional causality from financial growth to real GDP growth in Indian economy. Parallel to these views, empirical studies on financial development and economic growth nexus have also produced mixed results, evidencing no role or negative relationship. Vazakidis and Adamopoulos's (2009) study reveal that economic growth causes stock market development and industrial production index, while industrial production index causes credit market development for Greece. Christopoulos and Tsionas (2003) observe that there is no short run causality between financial deepening and output for 10 developing countries, using threshold Cointegration tests, and dynamic panel data estimation for a panel-based vector error correction model. Abu-Bader and Abu-Qarn (2006) view the causal relationship between financial development and economic growth in five MENA countries, within a trivariate VAR framework. The Cointegration results weakly supports the long-run relationship but where Cointegration is detected the long-run Granger causality results give more support for the hypothesis that finance follows rather than leads economic growth, whereas short-run causality tests show no evidence of causality between the two variables.

The directions of relationship between international trade and economic growth are still inconclusive (Balaguer and Cantavella-Jorda, 2002). Some of the studies have shown that international trade is crucial for economic growth in many countries (Shan and Sun, 1998;

Xu, 1996; Jin, 2000; Bahmani-Oskooee and Alse, 1993; Roubini and Sala-i-Martin, 1992; Marin, 1992; Chow, 1987). Yucel (2009) claims that trade openness have a positive effect whereas financial development has a negative effect on growth for the Turkish economy. Kilimani (2009) views that not only financial development cause economic growth but some other sectors like manufacturing and export sectors of Ugandan economy have been the source of growth. Furthermore, Katircioglu and Jenkins (2009) use the bounds test to cointegration and Granger causality tests to investigate the empirical relationship between financial development, international trade and economic growth in Cyprus. The results do not suggest any direction of causality between financial development and international trade in Cyprus. On the other hand, Katircioglu et al. (2007) has also investigated the relationship between financial development, international trade, and economic growth in India. They suggest that long-run equilibrium relationship exists among these variables. Their further results from causality tests reveal that (1) economic growth in India stimulates a growth in international trade (exports and imports of goods and services), (2) financial development is stimulated by exports while imports are stimulated by money supply, and (3) there is a feedback relationship between financial development and economic growth in case of India.

No evidence is found yet to support the hypotheses: finance led growth or growth led finance, trade-led growth and growth-led trade in Bangladesh while a bi-directional or feedback Granger-causality is evidenced between trade openness and financial development measured by the domestic credit as a percentage of GDP in Bangladesh (Hassan and Islam 2005). On the other hand, Rahman (2007) confirm that financial development induces investment activities in the long run in Bangladesh using Blanchard and Quah's (1989) technique of structural vector autoregressions (SVARs). He also emphasizes that both credit and investment GDP ratios have short-run positive impact on per capita income.

The relationship between financial development, international trade, and economic growth is still needed; this study empirically investigates the possible co-integration and the causal link between financial development, international trade (including exports and imports) and economic growth in Bangladesh.

## DATA AND MODEL SPECIFICATION

In this study, annual data of Real GDP, exports, imports money supply and domestic credit are taken from World Development Indicator 2007, covering the period 1975-2005 for Bangladesh. All data are expressed in logarithms in order to include the proliferate effect of time series and to reduce the problem of heteroscedasticity.[1] A technique of vector autoregressions (VARs) is adopted to estimate the causal relationship between exports, imports and economic growth in the following form:

$$LY = f\,(LY, LX, LM, LMS \text{ and } LRDC) \qquad (1)$$

Where, LY = Log of real GDP; LX = Log of real exports; LM = Log of real imports; LMS = Log of real Money Supply, (M2); LRDC = Log of domestic credit.

To check stationarity in data, this paper employs unit root test (Augmented Dickey Fuller and Phillips-Perron). Usually time series analyses consider stationary time series in empirical studies. If the series is non-stationary, the relationship between independent and dependent variables may exhibit misleading inferences which lead to spurious regression. A series is said to be stationary if mean and auto-covariance of the series do not depend on time. In order to examine whether each variable in the time series is integrated and has a unit root, this study has considered two widely used popular unit root tests—ADF and PP tests. Both tests use the null hypothesis that the series does contain a unit root (non-stationary variable) against a stationary variable in the alternative hypothesis. If the computed value of the

[1] Gujrati, D., 'Basic Econometrics', 3rd Edition 1995, McGraw-Hill

F-statistic exceeds the critical values Φ that are tabulated by Dicky-Fuller (1981) then the null hypothesis is rejected, it means the series is stationary. If the computed F-statistic falls below the critical values Φ, the null hypothesis is not rejected; it means the series is non-stationary. The test is based on the following regression equation:

$$\Delta y_t = a_1 + a_{2t} + by_{t=1} + \sum_{t=1}^{m} p_i \Delta y_{t-1} + \vartheta_t \qquad (2)$$

Where, $\Delta y_t = Y_t - Y_{t-1}$ and Y is the variable under consideration, m is the number of lags in the dependent variable chosen by SIC and $\vartheta_t$ is the stochastic error term. The null hypothesis of a unit root implies that the coefficient of $Y_{t-1}$ is zero. The ADF is widely used due to stability of its critical values as well as its power over different sampling experiments. Perron (1989, 1990) has shown that a structural change in the mean of a stationary variable tends to bias the standard ADF tests toward non-rejection of the hypothesis of a unit root. Therefore, this study conducts Phillips Perron (PP) unit root test along with ADF test that all variables are integrated of order one (i.e. have one unit root). While the ADF is notorious for its poor power problem, the other two tests are more powerful in rejecting the null hypothesis of nonstationarity. Between these two tests, the DF–GLS test performs well especially in the presence of unknown shifts in the mean and trend in the data.

Once the unit root test is accomplished, it is possible to carry out the co-integration test in order to examine the existence of a stable long-run relationship between exports, imports and economic growth. To verify co-integrated relationship among the variables, Johansen Co-integration test (Johansen, 1988; Johansen and Juselius, 1990) has been performed only on integrated of order one, i.e. I(1) according to unit root tests' variables. The Johansen method applies maximum likelihood procedure to determine the presence of co-integrating vectors in non-stationary time series as a vector autoregressive (VAR) framework:

$$\Delta Y_t = C + \sum_{i=}^{K} \Gamma_i \Delta Y_{t-1} + \Pi Y_{t-1} + \eta_t \qquad (3)$$

Where, $Y_t$ is a vector of non-stationary variables and C is the constant term. The information on the coefficient matrix between the levels of the $\Pi$ is decomposed as $\Pi = \alpha\beta$ , where the relevant elements of the $\alpha$ matrix are adjustment coefficient and the $\beta$ matrix contains co-integrating vectors. Johansen and Juselius (1990) specify two likelihood ratio test statistics to test for the number of co-integrating vectors. The first likelihood ratio statistic for the null hypothesis of exactly r co-integrating vectors against the alternative r+1 vector is the maximum Eigen value statistic. The second statistic for the hypothesis of at most r co-integrating vectors against the alternative is the *trace statistic.* Critical values for both test statistics are tabulated by Johansen and Juselius (1990). It has been suggested that the above tests of cointegration rank are contingent upon the presence or absence of deterministic components in the dynamic model.

The next question is to investigate whether all the variables in the model should enter into a long-run equilibrium relationship. This can be done by testing linear restrictions on the long-run coefficients after they have been normalized. The hypothesis of long-run exclusion of each variable is tested using a likelihood ratio test which is asymptotically distributed as $\chi^2$ with degrees of freedom equal to the number of restrictions tested. If the test statistic exceeds the 95% critical value then those coefficients are significant implying that the concerned variables should be present in the long-run equilibrium relationship. The number of cointegrating relationships will result in a corresponding number of residual series, and hence error correction terms (ECTs), to be used in the subsequent vector error correction model (VECM). We have considered the systems where the ECM must be seen as correcting towards an 'equilibrium subspace', which in this case is two-dimensional.

## EMPIRICAL TESTS AND RESULTS

We first test the stationarity properties of the variables under consideration i.e. their order of integration, then test for cointegration among the variables. Finally, we test for Granger Causality among the variables in a VECM framework.

### Testing for Stationarity:

In order to investigate stationarity properties of the variables under consideration (real GDP, exports, imports, money supply and domestic credit to the private sector) we carry out a univariate analysis for testing the presence of a unit root. Table 1 reports the results of Augmented Dickey-Fuller (ADF) *t*-test and Philips Perron test statistic.

**Table 1: Unit Root Test**

| Variables | ADF (Constant) | | PP (Constant) | |
|---|---|---|---|---|
| | Level | Level | Level | 1st Diff. |
| LY (Log of real GDP) | 2.383500 | -4.739647*** | 2.702934 | -4.827861*** |
| LX (Log of real exports) | -0.099571 | -7.575751*** | 0.003840 | -7.571373*** |
| LM (Log of real imports) | -0.831867 | -8.510980*** | -0.410766 | -11.97049*** |
| LMS (Log of real Money Supply, M2) | -2.531590 | -3.035119** | -2.284086 | -10.66009*** |
| LRDC( Log of domestic credit) | -2.065255 | -5.284802*** | -2.091146 | -7.265790*** |
| Notes: For ADF, the optimal lag length is selected using a testing down method. For PP tests, bandwidth is selected based on the Newey–West procedure using Bartlett kernel. Superscripts***, ** and * indicate rejection of null hypothesis at 1%, 5% & 10% level of significance. | | | | |

The results indicate that the variables are non stationary at level in both ADF and PP tests. On the other hand, Real GDP, exports, imports, money supply and domestic credit (LY, LX, LM, LMS and LRDC) are found stationary at first difference when constant is included in both ADF and PP tests at 1% and 5% level of significance. We conclude that the variables under consideration are 'integrated of order 1', ***I(1).***

**Testing for Cointegration:**

Since the variables are integrated of order 1, i.e. ***I(1),*** we can test whether they are cointegrated or not (Engel and Granger, 1987). We test for the number of cointegrating relationships using the approach proposed by Johansen (1988) and Johansen and Juselius (1990). The optimal lag length of the level VAR system is determined using the Akaike's Information Criterion (AIC), Hernan-Quinn criterion (HQ) and Schwartz Criterion (SC). Table 2 reports the number of cointegrating relationships among the variables under consideration.

**Table 2: VAR Lag Order Selection Criteria**

| Lag | Log L | LR | FPE | AIC | SC | HQ |
|---|---|---|---|---|---|---|
| 0 | 108.0044 | N/A | 5.66e-10 | -7.103754 | -6.868014 | -7.029923 |
| 1 | 273.6074 | 262.6805 | 3.58e-14 | -16.80051 | -15.38606* | -16.35752 |
| 2 | 315.2005 | 51.63284* | 1.35e-14* | -17.94486* | -15.35171 | -17.13272* |

* indicates lag order selected by the criterion
LR : sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike's information criterion
SC : Schwarz information criterion
HQ : Hannan-Quinn information criterion

Results of both Trace and Maximum Eigen value tests (in Table 3) suggest the existence of at least four cointegrating relationships among the variables in the series at 5% level of significance. This implies that the series under consideration is driven by at least four common trends. We save the residuals from the first three equations of the VAR, which are used as the error-correction term in the subsequent tests for Granger causality.

**Table 3: Johansen Cointegration Test (Johansen Maximum Likelihood Estimation)**

| Hypothesized No. of Ces | Eigen value | Trace Statistics | 0.05 Critical Value | p**-value | Max-Eigen value statistics | 0.05 Critical Value | p**-value |
|---|---|---|---|---|---|---|---|
| None * | 0.883803 | 137.8581 | 69.81889 | 0.0000 | 60.26903 | 33.87687 | 0.0000 |
| At most 1 * | 0.729695 | 77.58906 | 47.85613 | 0.0000 | 36.62976 | 27.58434 | 0.0026 |
| At most 2 * | 0.574744 | 40.95930 | 29.79707 | 0.0017 | 23.94176 | 21.13162 | 0.0196 |
| At most 3 * | 0.407777 | 17.01754 | 15.49471 | 0.0293 | 14.66842 | 14.26460 | 0.0432 |
| At most 4 | 0.080474 | 2.349113 | 3.841466 | 0.1254 | 2.349113 | 3.841466 | 0.1254 |
| Trace test indicates 4 cointegrating equation(s) at the 0.05 level<br>* denotes rejection of the hypothesis at the 0.05 level<br>**MacKinnon-Haug-Michelis (1999) p-values<br>Trend assumption: Linear deterministic trend<br>Lags interval (in first differences): 1 to 2 | | | | | | | |

We use a Vector Error Correction Mechanism (VECM) to test the granger causality among the variables under consideration. Table 4 reports the Granger non-causality statistic for the variables GDP growth ($\Delta y$), export growth ($\Delta x$), import growth ($\Delta m$), money supply growth ($\Delta ms$), and growth of domestic credit ($\Delta dc$) with error-correction terms: $\xi_{1,t-1}$, $\xi_{2,t-1}$, $\xi_{3,t-1}$ and $\xi_{4,t-1}$. The error-correction terms are adjustment terms toward 'equilibrium sub-space' and which also indicate long-run causality between variables under consideration.

**Table 4: Granger Causality Test**

| | $\Delta$y | $\Delta x$ | $\Delta m$ | $\Delta ms$ | $\Delta dc$ | $\xi_{1,t-1}$ | $\xi_{2,t-1}$ | $\xi_{3,t-1}$ | $\xi_{4,t-1}$ |
|---|---|---|---|---|---|---|---|---|---|
| $\Delta$y | | 15.0199<br>[0.0005]** | 3.84233<br>[0.1464] | 1.97003<br>[0.3734] | 0.774213<br>[0.6790] | 6.4255<br>[0.0112] * | 2.91729<br>[0.0876] | 2.04931<br>[0.1523] | 1.5999<br>[0.2059] |
| $\Delta x$ | 0.236218<br>[0.8886] | | 2.748<br>[0.2531] | 0.0713186<br>[0.9650] | 3.18859<br>[0.2031] | 0.208095<br>[0.6483] | 14.7564<br>[0.0001]** | 0.202742<br>[0.6525] | 0.428828<br>[0.5126] |
| $\Delta m$ | 0.56585<br>[0.7536] | 1.0721<br>[0.5851] | | 5.07242<br>[0.0792] | 5.58434<br>[0.0613] | 0.259953<br>[0.6102] | 0.376239<br>[0.5396] | 5.08145<br>[0.0242] * | 0.614342<br>[0.4332] |
| $\Delta ms$ | 3.69362<br>[0.1577] | 15.4543<br>[0.0004]** | 29.1049<br>[0.0000]** | | 4.37007<br>[0.1125] | 0.0373681<br>[0.8467] | 0.210043<br>[0.6467] | 0.0645979<br>[0.7994] | 4.97237<br>[0.0258]* |
| $\Delta dc$ | 1.49902<br>[0.4726] | 1.48006<br>[0.4771] | 10.1004<br>[0.0064]** | 4.38895<br>[0.1114] | | 1.35999<br>[0.5066] | 1.46123<br>[0.2267] | 0.393011<br>[0.5307] | 2.6124<br>[0.1060] |

***Superscripts***, ** and * indicate rejection of null hypothesis at 1%, 5% & 10% level of significance***

Results (in Table 4) indicate that export growth Granger causes Real GDP growth in the short-run and the causality is unidirectional. Long run GDP growth however has effect on the income growth in the short run. Both export growth and import growth Granger cause money supply growth in the short-run and the causality is unidirectional. It is also evident that import growth Granger causes domestic credit growth in the short run whereas the nexus is unidirectional. Our empirical findings are consistent in the context of real GDP growth in Bangladesh. Bangladesh imports large amounts of capital intensive machineries from abroad to promote the industrial sector. As a result domestic private credit serves as an important instrument for investors. On the other hand, under managed floating exchange rate regime in Bangladesh, an exogenous increase in exports requires the central bank to supply its currency to prevent its exchange rate from appreciating. This means an increase in money supply. This induced changes in the money supply, which in turn affects interest rates, the rate of investment, national income, and imports.

**CONCLUSION**

In this paper, we use time series econometric techniques to investigate the direction of causality between international trade (exports and imports of goods and services), financial development and economic growth in Bangladesh over the period 1975-2005. The main findings of the paper can be summarized as follows: First, the results show one-way causality from export growth to real GDP growth in Bangladesh. Second, the results do not provide sufficient evidence of a long-run causal relationship between economic growth and financial development as scaled by money supply and domestic credits, and between exports and economic growth. Third, Granger Causality test results reveal that both export and import growth cause changes in the money supply in the short run whereas the causality is unidirectional. Fourth, the empirical analysis suggests that long run GDP growth has an effect

on income growth in the short run. Finally, this study has indicated that import growth causes a change in the domestic credit in the short run. Thus the domestic credit provided by the banking sector has been assumed to contribute to the growth of the Bangladesh economy.

**REFERENCES**


Abu-Bader, S., and Abu-Qarn, A. S., (2006), "Financial Development and Economic Growth Nexus: Time Series Evidence from Middle Eastern and North African Countries ", Monaster Center for Economic Research, Ben-Gurion Univ. of the Negev, Discussion Paper No. 06-09

Acharya, D., Amanulla S., and Joy S., (2009),"Financial Development and Economic Growth in Indian States: An Examination", *International Research Journal of Finance and Economics*, ISSN 1450-2887, Issue 24

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

Balaguer J, Cantavella-Jordá M, (2002), "Tourism As A Long-Run Economic Growth Factor: The Spanish Case", *Applied Economics*, 34, pp.877-884.

Beck, T., (2002), "Financial Development And International Trade: Is There A Link?", *Journal of International Economics*, Vol. 57 pp.107-31.

Blanchard, O. J. and D. Quah (1989), "The Dynamic Effects of Aggregate Demand and Supply Disturbances," *American Economic Review*, pp. 655-73.

Calderon, C., & Liu, L. (2003), "The Direction of Causality between Financial Development and Economic Growth", Journal *of Development Economics*, 72, 321-334.

Chang, T. (2002), "Financial Development and Economic Growth in Mainland China: A Note on Testing Demand-Following or Supply-Leading Hypothesis", *Applied Economics Letters*, 9, 869-873

Chow, P.C.Y. (1987): "Causality between Export Growth and Industrial Development: Empirical Evidence from the Nics", *Journal of Development Economics*, 26(1), pp. 55-63.

Christopoulos, D. K., and Tsionas, E. G., (2003), "Financial Development and Economic Growth: Evidence from Panel Unit Root and Cointegration Tests", *Journal of Development Economics*, 73 (2004) 55– 74

De Gregorio, J., Guidotti, P. (1995), "Financial Development and Economic Growth", *World Development*, Vol. 23 pp.433-48.

Dickey, D. A., and W. A. Fuller (1981) "Likelihood Ratio Statistics for Autoregressive Time Series with a Unit Root" *Econometrica* **49**, 1057-1072.

Goldsmith, R., (1969), *Financial Structure and Development*, 1st Edition, Yale University Press, New Haven, ISBN: 10: 0300011709, pp: 561.

Gurley, J., Shaw, E. (1967), "Financial Structure and Economic Development", *Economic Development and Cultural Change*, Vol. 34 pp.333-46.

Hassan, A.F.M. K., and Islam, M. R., (2005), "Temporal Causality and Dynamics of Financial Development, Trade Openness and Economic Growth in Vector Auto Regression (VAR) for Bangladesh, 1974-2003: Implication for Poverty Reduction", *The Journal of Nepalese Business Studies*, Vol. II No. 1

Jalil A., and Ma Y., (2008), "Financial Development and Economic Growth: Time Series Evidence from Pakistan and China", *Journal of Economic Cooperation*, 29, 2 (2008), 29-68.

Jin, Jang C. (2000), "Openness and Growth: An Interpretation of Empirical Evidence From East Asian Countries", *The Journal of International Trade and Economic Development*, Vol.9, No.1, pp.5-17

Johansen, S. (1988). "Statistical analysis of cointegrated vectors", *Journal of Economic Dynamics and Control*, Vol. 12, pp.131–154

Johansen, S., & Juselius, K. (1990), "Maximum likelihood estimation and inference on cointegration: With an application to demand for money", *Oxford Bulletin of Economics and Statistics*, Vol.52, pp.169–210.

Jung, W.S., (1986), "Financial Development and Economic Growth: International Evidence", *Economic Development and Cultural Change*, 32: 333-346. http://ideas.repec.org/a/ucp/ecdecc/v34y1986i2p333-46.html

Katircioglu, S. and Jenkins, H. P. (2009), "The Bounds Test Approach for Cointegration and Causality between Financial Development, International Trade and Economic Growth: The Case of Cyprus", *Applied Economics*, (Forthcoming)

Katircioglu, S., Kahyalar, N. and Benar, H. (2007), "Financial Development, Trade and Growth Triangle: The Case of India", *International Journal of Social Economics*, 34 (9): 586-598.

Kilimani N. (2009), "The Link between Financial Development and Economic Growth in Uganda: A Causality Test", *The Centre for the Study of African Economies (CSAE) Conference*, 22– 24th March.

King, R.G and Levine, R. (1993a), "Finance and Growth: Schumpeter Might Be Right", *Quarterly Journal of Monetary Economics*, 108, 717-737. http://ideas.repec.org/a/tpr/qjecon/v108y1993i3p717-37.html

King, R.G and Levine, R. (1993b), "Finance, entrepreneurship and growth" *Journal of Monetary Economics*, 32,513-542.

Kletzer, K., Bardhan, P. (1987), "Credit Markets and Patterns of International Trade", *Journal of Development Economics*, Vol. 27 pp.57-70.

Levine, R., Loayza N. and Beck T. (2000), "Financial Intermediation and Growth: Causality and Causes", *Journal of Monetary Economics*, Vol.46, pp.31-77.

Marin, D. (1992): "Is the Export-Led Growth Hypothesis Valid For Industrialized Countries?", Review *of Economics and Statistics*, 74(4), pp. 678-688.

Mazur, E.A., Alexander, W.R.J. (2001), "Financial Sector Development and Economic Growth in New Zealand", *Applied Economic Letters*, Vol. 8 pp.545-9.

McKinnon, R. I., (1973), *Money and Capital in Economic Development*, 1st Edn., Brookings Institution, Washington, DC, ISBN: 0815756135, pp: 200.

Mukherjee J., and Deb S. G., (2008), "Does Stock Market Development Cause Economic Growth? A Time Series Analysis for Indian Economy", *International Research Journal of Finance and Economics,* ISSN 1450-2887, Issue 21. http://www.eurojournals.com/irjfe_21_12.pdf

Neusser, K., Kugler, M., (1998), "Manufacturing growth and financial development: evidence from OECD countries", *The Review of Economics and Statistics*, 638–646.

Patrick, H.T. (1966), "Financial Development and Economic Growth in Underdeveloped Economies", *Economic Development and Cultural Change*, Vol. 14 pp.174-89.

Perron, P. (1989), "The Great Vrash, the Oil Price Shock and the Unit Root hypothesis", *Econometrica*, 57, pp. 1361-1401

Perron, P. (1990), "Testing for a Unit Root in a Time Series with a Changing Mean", *Journal of Business and Economic Statistics*, 8, pp. 153-162

Rahman, H., (2007), "Financial Development—Economic Growth Nexus in Bangladesh", Working Paper Series: WP 0707, Policy Analysis Unit (PAU), Bangladesh Bank. http://ssrn.com/abstract=1310460

Roubini, Nouriel, and Xavier Sala-i-Martin, (1992), "Financial Repression and Economic Growth," *Journal of Development Economics*, Vol. 39 (1), pp. 5–30.

Schumpeter, J. A., (1911), *The Theory of Economic Development*, Cambridge, MA: Harvard University Press.

Shan, J.Z. and F. Sun, (1998), "Export-Led Growth Hypothesis: Further Econometric Evidence
From China", *Applied Economics*, 30, 1055-65.

Sinha, D., (1999), "Export Instability, Investment and Economic Growth in Asian Countries: A Time Series Analysis", Economic Growth Center, Yale University, Center Discussion Paper No. 799

Toda, H.Y. and T. Yamamoto, (1995), "Statistical Inference in Vector Autoregressions with Possibly Integrated Processes", *Journal of Econometrics,* 66, 225-250.

Vazakidis A., and Adamopoulos A., (2009), "Financial Development and Economic Growth: An Empirical Analysis for Greece", *American Journal of Applied Sciences* 6 (7): 1410-1417

Vuranok, S., (2009), "Financial Development and Economic Growth: A Cointegration Approach", Institute of Applied Mathematics, Middle East Technical University, Iam 589 Term Project Paper

XU, Z., (1996), "On the Causality between Export Growth and GDP Growth: An Empirical Reinvestigation", *Review of International Economics*, 4(2), 172-84.

Yildirim, J., Öcal, N., and Erdogan, M., (2008), "Financial Development and Economic Growth in Turkey: A Spatial Effect Analysis", http://fp.paceprojects.f9.co.uk/Erdogan.pdf

Yucel, F., (2009), "Causal Relationships between Financial Development, Trade Openness and Economic Growth: The Case of Turkey", *Journal of Social Science,* 5(1): 33-42.