FINANCIAL DEVELOPMENT AND ECONOMIC GROWTH IN SAUDI ARABIAN ECONOMY

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Abstract

This study investigates the relationship between financial development and economic growth for Saudi Arabia for the period 1989-2008 by using fully modified ordinary least squares (FMOLS) approach. Financial market development has been represented by the effect of credit market development (bank credits to the private sector) and stock market development (The general stock market index). The results indicate that the domestic bank credit to the private sector has significant and positive effect on economic growth in the long run, but insignificant and negative effect in the short run. On the other hand, stock market index has expected positive but insignificant effect in the long run but unexpected and insignificant effect in the short run. Finally, the growth of industrial production has expected positive and significant effect on economic growth either in the short or long run.

Keywords: Financial Development, Economic Growth, FMOLS, Saudi Arabia.
JEL classification: O11, C22

1. Introduction

The Saudi economy recorded high growth in 2010 as global economic recovery lifted up oil prices, and enlarged fiscal spending by the government boosted domestic demand and accelerated the growth in non-oil GDP. On the same line, the actual budget recorded a surplus of SAR 87.7 billion or 5.4 percent of GDP in 2010 against a deficit of SAR 86.6 billion or 6.2 percent of GDP in the previous year. On the other hand, the ratio of public debt to GDP declined from 16.1 percent in 2009 to 9.9 percent in 2010. The current account of the balance of payments recorded a surplus for the twelfth year consecutively amounting to SAR 250.3 billion or 14.9 percent of GDP in 2010 (Saudi Arabian Monetary Agency (SAMA, 2011).

In this respect, the relationship between economic growth and financial development has been an extensive subject of empirical and theoretical researches for many years. These researches have highlighted the significance of having a developed financial system to support economic growth. Recently, many studies have also addressed this topic from an open economy perspective, and found that financial integration with the global economy like financial deepening can bring about economic benefits. The main objective of this study was to investigate the causal relationship between economic growth and financial development taking into account the effect of industrial production index.

The Figures 1, 3 and 4 indicate that there are similar directions among real GDP, domestic credits to private sector and industrial production index with the exception of general stock market index in Figure 2, which take different direction since 2005.

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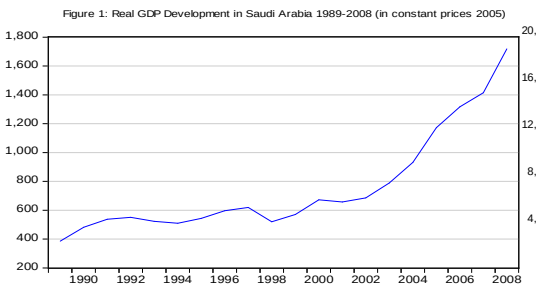
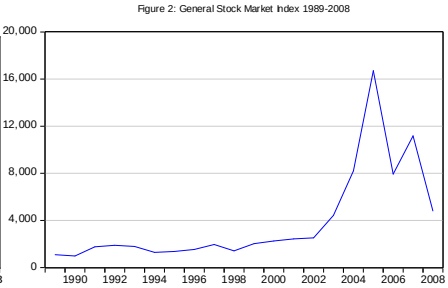
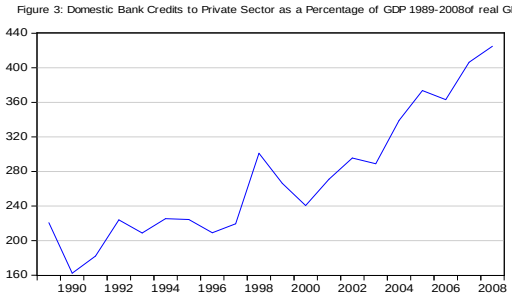
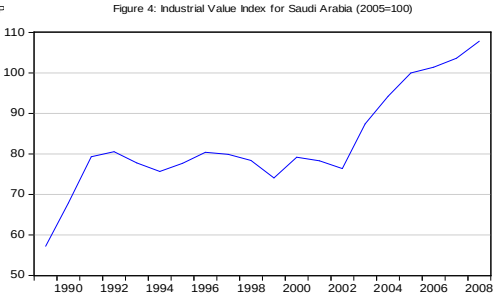








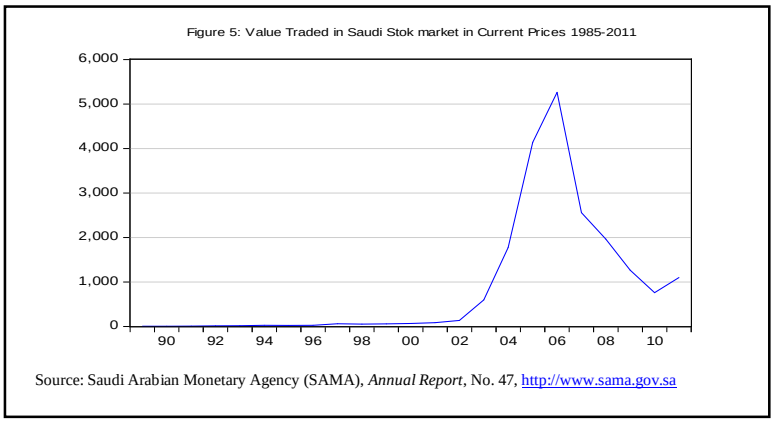
Source: Table (A-1) in the Appendix.

On the other hand, Table 1 and Figure 5 demonstrate that total value traded has achieved annually average growth rate about 26.36 percent during the period 2002-2011. In Table 2, we can also observe that, there are five sectors captured more than 55 percent of total value traded in 2011, these sectors have been represented in Petrochemical Industries, Insurance, Agriculture & Food Industries, Banks & Financial Services and Industrial Investment respectively. Petrochemical Industries has achieved the highest share in 2011 amounted 29.98 percent of total traded value.

Table 1: Value traded and its growth rate in Saudi Stock Market 2002-2011

Year	Value (Billion Riyal)	*Average Growth Rate 2002-2011
2002	133.787	26.36%
2003	596.510	
2004	1,773.859	
2005	4138.696	
2006	5261.851	
2007	2557.713	
2008	1962.946	
2009	1264.011	
2010	759.184	
2011	1098.836	

Source: Saudi Arabian Monetary Agency (SAMA), *Annual Report*, No. 47, http://www.sama.gov.sa



Source: Saudi Arabian Monetary Agency (SAMA), *Annual Report*, No. 47, http://www.sama.gov.sa

Table 2: The Structure of Value Traded of Saudi Stock Market by economic sector in 2011 (in Current Prices)

Sector	Value Traded (Riyal)	Share %
Petrochemical Industries	329,392,398,600.75	29.98
Insurance	197,466,709,935.15	17.97
Agriculture & Food Industries	108,339,400,089.10	9.86
Banks & Financial Services	73,554,313,181.80	6.69
Industrial Investment	64,966,335,063.65	5.91
Building & Construction	55,044,907,877.95	5.01
Telecommunication & Information Technology	54,578,225,249.95	4.97
Multi-Investment	54,166,397,137.45	4.93
Real Estate Development	47,060,181,347.65	4.28
Cement	33,060,710,409.50	3.01
Retail	29,257,990,182.25	2.66
Transport	19,433,454,285.40	1.77
Energy & Utilities	13,373,928,009.55	1.22
Media and Publishing	9,709,127,508.00	0.88
Hotel & Tourism	9,431,949,778.60	0.86
Total	1,098,836,028,656.75	100

Source: Saudi Arabian Monetary Agency (SAMA), *Annual Report*, No. 47, http://www.sama.gov.sa

In this respect, recent years have witnessed more studies on the link between financial development and growth that stemming mainly from the insights and techniques of endogenous growth models, which have shown that there can be self-sustaining growth without exogenous technical progress and that the growth rate can be related to preferences, technology, income distribution and institutional arrangements, which provides the theoretical underpinning that early contributors lacked: financial intermediation can be shown to have not only level effects but also growth effects.

Schumpeter (1912) discusses the finance growth relationship as a supply-leading one, in which the financial sector leads economic growth by successfully identifying and funding high yielding projects. This is based on the view that a financial system that is functioning well, would encourage technological innovation by selecting and financing businesses that are expected to be successful. Bagehot (1873) and Hicks (1969) argued that financial development was an important channel in the industrialization of England, by helping the movement of large amounts of funds for "immense" works.

The theoretical models of many studies concentrate on the role of efficient financial market on raising the quality of investments, thus leading to economic growth. Greenwood and Jovanovic (1990) built in their model a financial sector whose main objective it to direct funds to high-yielding investments with the assistance of information. This then would lead to economic growth, which would in turn enable the implementation of costly financial structures. Levine (1991) explains in his model, how stock markets influence growth by improving firm efficiency. Furthermore, Bencivenga and Smith (1991) explain that, a well-functioning financial system would improve the level of investment towards non-liquid objects, which will be beneficial to the economy. On the other hand, Saint-Paul (1992) explains the role of the financial sector in helping business enterprises in specialization by allowing investors to hedge by holding a diversified portfolio. This in turn would lead to productivity growth. Atje and Jovanovic (1993) explain how the financial system can help investors disperse risk and provide funding, thereby guiding them to the best investments which are profitable to the economy.

Maurice Obstfled (1994) argued that financial openness and access to international financial markets bring benefits to businesses as well as the economy. Bencivenga, Smith and Starr (1995) indicated that industries, which require a longer period to implement new technologies benefit more relatively, from developments in the financial market. Rajan and Zingales (1996) concluded that as the market develops, firms that are less-firmly established and have difficulty with self-funding projects, would benefit better from external funding methods, and therefore expand relatively faster.

Balckburn and Hung (1996) found that in a developed financial system, the task of monitoring projects can be undertaken by financial intermediaries, lowering transaction costs and channelling greater savings towards new investments, thus boosting economic growth. Moreover, the authors explain how a country can be trapped in a situation of low economic growth and low financial development. More recently, Levine and Zervos (1998) in their study argued that higher returns and improved risk could encourage a lower savings rate, which would lower economic growth with more liquid and internationally integrated financial markets.

In line with this, Tsuru (2000) explained how the development of the financial sector is able to affect the saving rate, thus affecting the rate of economic growth.

In empirical analysis level, the relationship between financial development and economic growth goes back to early studies such as that by Goldsmith (1969) who found that financial development led to faster economic growth. Later studies such as, Gupta (1984) examined the money effects on industrial production, although the latter was regarded as measuring only a portion of overall output. King and Levine (1993) examined cross-country evidence from 80 countries, and found a strong positive relationship between each of the 4 measures of financial development used, and economic growth. Guiso et al.

(2004) found that financial development has a positive effect on economic growth for European Union.

Guisan and Neira (2006) reached that there are several interrelationships between the main variables related with economic development (increase of human and social capital, moderation of demographic growth, industrial development, and foreign trade among others), and that we should be aware of the direct and indirect effects of these variables on Economic development. Guisan (2009) also proved that there is positive effect of industrial production on economic development.

Murinde and Eng (1994) in their study found the causality between financial development and economic growth running in both directions, in the case of Singapore. Demetriades and Hussein (1996) found evidence of bi-directionality between financial development and growth using data from 16 developing countries. Levine and Zervos (1996, 1998) found evidence that stock market liquidity and banking development have a positive relationship with economic growth. Ragan and Zingales (1998) argued that financial sector development and economic growth can be affected by the saving rate, also supporting the hypothesis that financial development causes economic growth.

Rousseau and Wachtel (1998) found one-way causality in the relationship between financial development and economic growth in the case of 5 present OECD countries during the period of fast industrialization (1871-1929). Luintel and Khan (1999) in their study found bi-directional causality for all countries in the sample. Beck, Levine and Loayza (2000) found that banks have a strong causal effect on economic growth using panel data analysis.

Berglöf and Bolton (2002) find that the link between financial development and economic growth does not appear to be very strong during the first decade of transition, at least when one looks at the ratio of domestic credit to GDP. Fink et al. (2005), using a sample of 33 countries (11 transition economies and 22 market economies), found that financial development has positive growth effects in the short run rather that in the long run. Kenourgios and Samitas (2007) examined the long-run relationship between finance and economic growth for Poland and concluded that credit to the private sector has been one of the main driving forces of long-run growth. They found that the transmission mechanisms differ, and that financial market segments with links to the public sector (but not to stock markets) contributed to stability and growth in the transition economies.

Winkler (2009) reviews the process of rapid financial deepening and the associated vulnerability and risks for the Southeastern European countries. He argues that the strategy of pursuing financial development through the entry of foreign banks does not guarantee financial stability. Finally, Bonin and Watchel (2003) indicate that well-functioning financial intermediaries have a significant impact on economic growth.

The issue of causal relationship between financial development and economic growth has been an intensive subject of interest for many theoretical and empirical studies. Therefore, this study tries to fill the theoretical and empirical gaps created by the different economic school of thoughts related to the impact of financial development on economic growth for Saudi Arabia.

The model hypothesis predicts that financial market development facilitates economic growth taking into account the effect of industrial production index on economic growth. The empirical results are presented analytically and some discussion issues resulted from

this empirical study are developed shortly, while the final conclusions are summarized relatively.

2. Data and methodology

This study investigates the relationship between financial development and economic growth for Saudi Arabia for the period 1990-2008 by using fully modified ordinary least squares (FMOLS) approach. FMOLS was originally designed first time by Philips and Hansen (1990) and Philips and Moon (1999) to provide optimal estimates of Co-integration regressions. This technique employs kernal estimators of the Nuisance parameters that affect the asymptotic distribution of the OLS estimator. In order to achieve asymptotic efficiency, this technique modifies least squares to account for serial correlation effects and test for the endogeneity in the regressors that result from the existence of a Co-integrating Relationships

The following model is to be estimated by fully modified ordinary least squares (FMOLS) approach:

IRGDP = f (RSMI, BC, RIPI) (1)

Where: IRGDP is the index of real gross domestic product (2005=100),

RSMI is the real general stock market index (2005=100),

BC is the domestic bank credits to private sector,

RIPI is the real industrial production index (2005=100).

The variable of economic growth is proxied by the Index of real gross domestic product (IRGDP), while the credit market development is expressed by the real domestic bank credits to private sector (BC) as a percentage of real GDP. The ratio of real credit to the private sector to GDP (BCGDP), which is the real value of loans made by banks to private enterprises and households divided by real GDP, is used as a measure of financial depth and banking development.

The general stock market index is used as a proxy for the stock market development. The general stock market index (RSMI), which deflated by consumer price index (2005=100) expresses better the stock exchange market, while the industrial production index (RIPI) which deflated by consumer price index (2005=100) measures the growth of industrial sector (Katsouli, 2003; Nieuwerburgh et al., 2005; Shan, 2005; Guisan and Neira, 2006; Vazakidis, 2006; Vazakidis and Adamopoulos, 2009b; Vazakidis and Adamopoulos, 2009c; Guisan, 2009). The data that are used in this analysis are annual covering the period 1989-2008 for Saudi Arabia, regarding 2005 as a base year.

All of time series data are obtained from Saudi Arabia Monetary Authority (SAMA) annual report (2010) with the exception of the domestic bank credits to private sector which obtained from World Development Indicator (WDI).

3. Empirical results

Augmented Dickey- Fuller unit root test is calculated for individual series to provide evidence as to whether the variables are stationary and integrated of the same order.

The results of Augmented Dickey-Fuller (ADF) test for each variable appear in Table 3. The lag parameter in the ADF test is selected by Akaike information criterion (AIC) to eliminate the serial correlation in residual. As shown in Table 3, the null hypothesis of a unit root cannot be rejected for both of the series at a 10% significance level. However, the unit root hypothesis is rejected for all variables in the first-differenced data. Therefore, we conclude that the series are integrated of order one.

Table 3: Unit root test

		ADF
LIRGDP	Level	2.552312
	First Diff.	-3.096346[b]
LBCGDP	Level	2.148117
	First Diff.	-5.980004[a]
LRSMI	Level	-1.251788
	First Diff.	-5.108687[a]
LRIPI	Level	-1.420151
	First Diff.	-3.047390[b]

Notes: ADF-Dickey DA, Fuller WA., (1979) unit root test with the Ho: Variables are I (1); a, b and c indicate significance at the 1%, 5% and 10% levels, respectively.

Table 4 and Table 5 give the results of the Likelihood Ratio tests based on the Maximum Eigenvalue and the Trace of the stochastic matrix respectively. Both these tests confirm the existence of three cointegrating vectors between the variables, i.e. the existence of long-run relationship between them.

Table 4. Cointegration test based on Trace of the Stochastic Matrix

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.857284	76.46928	47.85613	0.0000
At most 1 *	0.676387	39.47825	29.79707	0.0028
At most 2 *	0.572374	18.04230	15.49471	0.0202
At most 3 *	0.095243	1.901697	3.841466	0.1679

Trace test indicates 3 cointegrating eqn(s) at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level

Table 5. Cointegration test based on Maximal Eigenvalue of the Stochastic Matrix

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.857284	36.99103	27.58434	0.0023
At most 1 *	0.676387	21.43595	21.13162	0.0453
At most 2 *	0.572374	16.14061	14.26460	0.0250
At most 3 *	0.095243	1.901697	3.841466	0.1679

Max-eigenvalue test indicates 3 cointegrating eqn(s) at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level

Since the four variables are cointegrated, they can be represented equivalently in terms of an error correction framework.

In Table 6, we see the results of the long run FMOLS estimates for equation 1. The explanatory power is high (Adjusted R^2=0.922).

Table 6: FMOLS estimates in the long run and short run (1989-2008)

Variable	Coefficient	
	Long Run	**Short Run**
Log(BCGDP)	0.6[a]	-0.03
LOG(RSMI)	0.07	-0.02
LOG(RIPI)	1.43 [a]	1.59 [a]
EC(-1)	-	-0.591 [a]
	R^2 = 0.922 Durbin-Watson: 1.42	R^2 = 0.649 Durbin-Watson: 1.85

Source: Table (A-2) and Table (A-3) in Appendix. - a denotes significance level at 1%.

The explanatory variables are significant at 1% level with expected sign Log(BCGDP) and Log(LRIPI), with the exception of Log(RSMI), which has insignificant coefficient.

$$\log IRGDP_{i,t} = \alpha_i + \beta_1 \log RIPI_{i,t} + \beta_2 \log BCGDP_{i,t} + \beta_3 \log RSMI_{i,t} + \xi_{i,t} \quad (7)$$

$$\log \Delta IRGDP_{i,t} = \alpha_i + \beta_1 \Delta \log RIPI_{i,t} + \beta_2 \Delta \log BCGDP_{i,t} + \beta_3 \Delta \log RSMI_{i,t} + \beta_4 EC(-1) + \xi_{i,t} \quad (8)$$

In the short run, we have estimated equation 2, the results as shown in Table 6 indicate that Log(RIPI) is the only explanatory variable that is significant at 1% level with expected sign, but Log(BCGDP) and Log(RSMI) has unexpected and insignificant coefficients. The error correction is correctly negatively signed and highly significant. It has a large magnitude (-0.591) suggesting a speed adjustment process, which means that, if Real GDP is 1 percent out of equilibrium, a 59.1 percent adjustment towards equilibrium will take place within the first year.

5. Conclusions

The results of many empirical studies that examining the relationship between financial development and economic growth differ relatively to the examined countries, the measures of financial development, the sample period and the estimation method.

The results indicate that the domestic bank credit to the private sector has significant and positive effect on economic growth in the long run but insignificant and negative effect in the short run. On the other hand, stock market index has expected positive but insignificant effect in the long run but unexpected and insignificant effect in the short run. Finally, the growth of industrial production has expected positive and significant effect on economic growth either in the short or long run.

Financial institutions and markets can foster economic growth through several channels, i.e. by easing the exchange of goods and services through the provision of payment services, mobilizing and pooling savings from a large number of investors, acquiring and processing information about enterprises and possible investment projects, thus allocating savings to their most productive use, monitoring investment and carrying out corporate governance, and diversifying, increasing liquidity and reducing intertemporal risk. Each of these functions can influence saving and investment decisions and hence economic growth. Since many market frictions exist and laws, regulations, and policies differ markedly across economies and over time, improvements along any single dimension

may have different implications for resource allocation and welfare depending on other frictions in the economy.

References

Akaike, H. 1973. Information theory as an extension of the maximum likelihood principle. pp. 267-281, in B. N. Petrov and F. Csaki, editors. Second international symposium on information theory, Akademiai Kiado, Budapest, Hungary.

Atje, R., and B. Jovanovic (1993), "Stock Markets and Development", *European Economic Review*, Vol. 37, 632-640. http://dx.doi.org/10.1016/0014-2921(93)90053-D

Bagehot, Walter, (1873), Lombard Street, 1962 ed. (Richard D. Irwin, Homewood, IL)

Beck, T., R. Levine and N. Loayza (2000), "Finance and the Sources of Growth", *Journal of Financial Economics*, 58: 261–300. http://dx.doi.org/10.1016/S0304-405X(00)00072-6

Bencivenga, V. and Smith, B., (1991), 'Financial intermediation and endogenous growth', *Review of Economics and Studies*, 58, pp. 195-209. http://dx.doi.org/10.2307/2297964

Bencivenga, V., Smith, B. and Starr, R., (1996), 'Equity Martkets, Transaction Costs and Capital Accumulation: An Illustration', *The World Bank Economic Review*, 10(2), pp. 241-265. http://dx.doi.org/10.1093/wber/10.2.241

Berglöf E., Bolton P. (2002), "The Great Divide and Beyond: Financial Architecture in Transition", *The Journal of Economic Perspectives*, 16 (1), 77-100. http://dx.doi.org/10.1257/0895330027120

Blackburn, K. and V.T.Y. Hung (1998), "A Theory of Growth, Financial Development, and Trade, *Economica*, 65, 107-124. http://dx.doi.org/10.1111/1468-0335.00116

Bonin J., Wachtel P. (2003), "Financial Sector Development in Transition Economies: Lessons from the First Decade", *Financial Markets, Institutions and Instruments*, 12 (1), 1-66. http://dx.doi.org/10.1111/1468-0416.t01-1-00001

Demetriades, Panicos, and Khaled A. Hussein, (1996), '' Does Financial Development Cause Economic Growth? Time-series Evidence from 16 Countries'', *Journal of Development Economics*, 51: 387-411. http://dx.doi.org/10.1016/S0304-3878(96)00421-X

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

Different Stages of Development: Transition, Cohesion and Mature Economies Compared" Economic Development). Leipzig: Dunker& Humblot, Translated by Redvers Opie, Cambridge, MA: Harvard University Press, 1934.

Fink G., Haiss P., Mantler H.C. (2005), "The Finance-Growth-Nexus: Market Economies vs. Transition Countries, *Europainstitut Working Paper*, 64.

Goldsmith, Raymond, (1969), Financial structure and Development, New Haven, CT: Yale University Press.

Granger, C., (1986), 'Developments in the study of cointegrated economic variables', *Oxford Bulletin of Economics and Statistics*, 48, pp. 213 - 228. http://dx.doi.org/10.1111/j.1468-0084.1986.mp48003002.x

Greenwood, J. and Jovanovic, B. (1990), 'Financial development, growth and distribution of income', *Journal of Political Economy*, 98, pp. 1076-1107. http://dx.doi.org/10.1086/261720

Guisan, M.C., Neira, I. (2006). "Direct and Indirect Effects of Human Capital on World Development, 1960-2004", *Applied Econometrics and International Development*, Vol. 9-1, 17-34.

Guisan, M.C. (2009). "Government Effectiveness, Education, Economic Development And Well-Being: Analysis Of European Countries In Comparison With The United States And Canada, 2000-2007", *Applied Econometrics and International Development*, Vol. 9-1, 39-55.

Guiso, L., Jappelli, T., Padula, M. and Pagao, M., (2004), 'Financial market integration and economic growth in the EU', *Economic Policy*, pp. 523-577. http://dx.doi.org/10.1111/j.1468-0327.2004.00131.x

Gupta, Kanhaya L., (1984), Finance and Economic Growth in Developing Countries, London: Croom Helm.

Hicks, J. (1969), A Theory of Economic History, Oxford: Clarendon Press.

Kenourgios D. and Samitas A. (2007), "Impact of Mergers and Acquisitions on Stock Returns of Tramp Shipping Firms", *International Journal of Financial Services Management*, Vol. 2, No. 4, pp. 327-343. http://dx.doi.org/10.1504/IJFSM.2007.016288

King, R. and Levine, R., (1993a), 'Finance and Growth: Schumpeter Might be Right', *Quarterly Journal of Economics*, 108(3), pp. 717-737. http://dx.doi.org/10.2307/2118406

Levine R. (2005), "Finance and Growth: Theory and Evidence," Handbook of Economic Growth, in: Aghion P. and S. Durlauf (ed.), vol 1, 865-934. http://dx.doi.org/10.1016/S1574-0684(05)01012-9

Levine, R. and Zervos, S., (1998), 'Stock markets, banks and economic growth', *The American Economic Review*, 88(3), pp. 537-558.

Levine, R., (1991), 'Stock Markets, Growth, and Tax Policy', *Journal of Finance*, 46, pp. 1445-1465. http://dx.doi.org/10.2307/2328866

Luintel, K.B. ad M. Khan (1999) "A Quantitative Reassessment of the Finance-Growth Nexus: Evidence from a Multivariate VAR", *Journal of Development Economics*, Vol. 60, pp.381-405. http://dx.doi.org/10.1016/S0304-3878(99)00045-0

Murinde, V. et F. Eng (1994). Financial Development and Economic Growth in Singapore: Demand Following or Supply-Leading?, *Applied Financial Economics*, 4, 391-404. http://dx.doi.org/10.1080/758518671

Nieuwerburgh, S., Buelens, F. and Cuyvers, L., (2006), 'Stock market and economic growth in Belgium', *Explorations in Economic History*, 43(1), pp. 13-38. http://dx.doi.org/10.1016/j.eeh.2005.06.002

Obstfeld M.(1994), "Risk-Taking, Global Diversification, and Growth, *The American Economic Review*, Vol. 84, No. 5. , December, pp. 1310-1329.

Philips P. C. B. and Hansen B. E. (1990) "Statistical Inference in Instrumental Variables Regression with I(1), Processes", *Review of Economic Studies*, 57, 99-125. http://dx.doi.org/10.2307/2297545

Phillips, P. C.B., and H. R. Moon (1999), "Linear Regression Limit Theory for Nonstationary Panel Data," *Econometrica*, Vol. 67, pp. 1057– 1111. Available at: http://cowles.econ.yale.edu/P/cd/d12a/d1222.pdf. http://dx.doi.org/10.1111/1468-0262.00070

Rajan, R. G. and L. Zingales (1998), "Financial Dependence and Growth", *American Economic Review*, 88: 559-586.

Rousseau, P. L. and P. Wachtel (1998), "Financial Intermediation and Economic Performance: Historical Evidence from Five Industrial Countries", *Journal of Money, Credit and Banking*, 30: 657-678. http://dx.doi.org/10.2307/2601123

Saint-Paul, G., (1992), 'Technological Choice, Financial Markets and Economic Development', *European Economic Review*, 36, pp. 763-781. http://dx.doi.org/10.1016/0014-2921(92)90056-3

Saudi Arabian Monetary Agency (SAMA), *Annual Report*, No. 47, http://www.sama.gov.sa

Schumpeter, Joseph A. (1912), Theorie der Wirtschaftlichen Entwicklung [The Theory of Economic Development]. Leipzig: Dunker & Humblot, translated by Redvers Opie. Cambridge, MA: Harvard University Press, 1934.

Schwarz G. (1978),"Estimating the Dimension of a Model, *Annals of Statistics*, Volume 6, Number 2, 461-464.

Senhadji A. (2000). Sources of Economic Growth: An Extensive Growth Accounting Exercise. *IMF Staff Papers*, Vol. 47, No. 1, Washington: International Monetary (Fund).

Tsuru, K (2000). Finance and Growth: Some Theoretical Considerations, and A Review of the Empirical Literature, *Economics Department Working Papers*, OECD, January, No. 228.

Winkler. A., (2009), "Southeastern Europe: Financial Deepening, Foreign Banks and Sudden Stops in Capital Flows", *Focus on European Economic Integration*, 1, 84-97.

World Bank, World Bank Development Indicator, http://data.worldbank.org/indicator/.

Appendix (A)

Table (A.1): Financial and economic data (1990-2007)

Period	IRGDP (2005=100)	RBCRGDP	RSMI (2005=100)	RIPI (2005=100)
1988	29.346	0.220232	5.6977	56.18637
1989	32.940	0.212026	7.1687	57.19203
1990	41.110	0.15597	6.5659	67.91871
1991	45.847	0.175012	11.7093	79.28963
1992	46.982	0.215299	12.4156	80.54803
1993	44.608	0.200651	11.5556	77.77455
1994	43.442	0.216516	7.9018	75.67818
1995	46.380	0.215601	8.45925	77.66288
1996	50.877	0.200939	9.3907	80.40263
1997	52.845	0.210829	11.9213	79.89114
1998	44.369	0.289262	8.1960	78.38680
1999	48.675	0.255871	11.6617	74.05750
2000	57.345	0.231122	13.0337	79.20034
2001	56.042	0.260326	14.0669	78.29749
2002	58.486	0.283984	14.7656	76.36859
2003	67.325	0.277598	26.3106	87.41965
2004	79.482	0.325823	49.2023	94.21403
2005	100	0.358947	100	100.0000
2006	112.291	0.348872	47.1799	101.4143
2007	120.669	0.390418	66.2628	103.6154
2008	146.533	0.408211	28.2770	107.8327

Table (A-2): Long Run Fully Modified Least Squares (FMOLS) Regression Results

Dependent Variable: LOG(IRGDP)				
Method: Fully Modified Least Squares (FMOLS)				
Sample (adjusted): 1989 2008. Included observations: 20 after adjustments				
Cointegrating equation deterministics: C				
Long-run covariance estimate (Bartlett kernel, Newey-West fixed bandwidth= 3)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
LOG(RIPI)	1.426742	0.247142	5.772966	0.0000
LOG(BCGDP)	0.598347	0.127277	4.701140	0.0002
LOG(RSMI)	0.072240	0.050680	1.425395	0.1733
C	-5.713219	0.984266	-5.804548	0.0000
R-squared	0.922277	Mean dependent var		4.085114
Adjusted R-squared	0.907704	S.D. dependent var		0.404486
S.E. of regression	0.122884	Sum squared resid		0.241607
Durbin-Watson stat	1.422473	Long-run variance		0.006708

Table (A-3): Short Run Fully Modified Least Squares (FMOLS) Regression Results

Dependent Variable: D(LOG(IRGDP))				
Method: Fully Modified Least Squares (FMOLS)				
Sample (adjusted): 1991 2008				
Included observations: 18 after adjustments				
Cointegrating equation deterministics: C				
Long-run covariance estimate (Bartlett kernel, Integer Newey-West fixed bandwidth = 3.0000)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
D(LOG(RIPI))	1.588837	0.290909	5.461625	0.0001
D(LOG(RSMI))	-0.029583	0.130461	-0.226756	0.8241
D(LOG(BCGDP))	-0.015720	0.031363	-0.501235	0.6246
RESID01(-1)	-0.591119	0.160251	-3.688695	0.0027
C	0.023324	0.017420	1.338916	0.2035
R-squared	0.649432	Mean dependent var		0.070611
Adjusted R-squared	0.541565	S.D. dependent var		0.098581
S.E. of regression	0.066747	Sum squared resid		0.057917
Durbin-Watson stat	1.851813	Long-run variance		0.002527