



## **Non-Oil Trade Openness and Financial Development Impacts on Economic Growth in Saudi Arabia**

**Mohammed Aljebrin\***

College of Business Administration, Majmaah University, PO Box 11952, Majmaah, Saudi Arabia. \*Email: [maljebrin@mu.edu.sa](mailto:maljebrin@mu.edu.sa)

### **ABSTRACT**

This study investigates the relationship between non-oil trade openness (NTO) and the financial development effect on economic expansion in Saudi Arabia, focusing on the 1990-2016 time period and applying the fully modified ordinary least squares approach. NTO is represented by the sum of the non-oil exports and imports as a percentage of gross domestic product (GDP). Financial market growth is demonstrated by the private sector's bank credits (the credit market development effect) and the general stock market index (stock market development). In the long run, the findings suggest that the NTO, the private sector's domestic bank credit and the stock market are significant in their expected positive signs. In the short run, the results indicate that NTO and the stock market have an expected positive and significant coefficient but the domestic bank credit offered to the private industry has a noteworthy but negative unexpected sign. The error correction is correctly negatively signed and very significant with a considerable magnitude (-0.268) indicating a speed adjustment process. Consequentially, if the real GDP is out of equilibrium by 1%, a 26.8% adjustment will occur towards equilibrium by the end of the 1<sup>st</sup> year.

**Keywords:** Financial Development, Trade Openness, Economic Growth, Fully Modified Ordinary Least Squares, Saudi Arabia

**JEL Classifications:** O11, C22, F11, F14, F41, F43

### **1. INTRODUCTION**

The Saudi economy flourished in 2016 due to the Kingdom's continuous spending on development projects and dedication to growing their structural and government reforms; backed by their goal to develop a strong economy with continued growth sustained by diversified production and export of varied goods and services while increasing the non-oil sector's contributions. 2010 constant prices indicate that the real gross domestic product (RGDP) grew by 1.74% to SAR 2,589.562 billion in 2016 in comparison to a 3.5% jump 2015. The oil sector GDP grew by 3.76% to SAR 1,139.997 billion, as the non-oil sector GDP rose by 0.23% to SAR 1,428.732 billion at 2010 constant prices. The non-oil private sector growth rate of the GDP went up by 0.08% to SAR 1,000.309 billion, while that of the non-oil government sector grew by 0.59% to SAR 428.423 billion (SAMA, 2016).

Job opportunities, social welfare and a nation's economy can all be positively affected by International Trade. Trade has a considerable stake in the GDP of several different countries. Foreign trade is crucial for countries that can't rely on domestic production

for capital or consumer goods. International trade was vital in achieving global economic growth over the past 200 years. Oke (2007) has shown that several developed and developing nations relied on international trade as well as long-term capital flows to jump start economic growth and support their development. Furthermore, as argued by Rodrik (2001), not a single country has advanced economically without international trade. Foreign trade is necessary to procure capital and other consumer goods as well as any services that a country cannot locally produce. Historically, foreign trade has repeatedly been touted for its comparative advantage in business and economics and is considered to be a main factor that contributes to GDP in both.

Over the past several years, many empirical and theoretical studies have focused attention on trade openness and financial improvement and the correlation between them and their affect on a nation's economic growth. This extensive research has underlined the importance of having an open trade economy and a stable financial network that encourage and sustain economic progress. Additionally, several newer studies have researched this subject from an open economy standpoint and have discovered that both

trade and global financial integration tend to promote economic prosperity. This study intends to examine the trade openness and financial development impacts on economic growth.

Figures 1-3 below suggest that there are comparable paths of development among the RGDP, trade openness (non-oil trade to GDP ratio) and domestic credits to private sector with the exception of the general stock market index (STM) as indicated by Figure 4 which took a different track since 2008 when the world financial crises occurred.

The non-oil exports and non-oil imports systems should be reviewed when examining the Saudi Arabian non-oil Trade performance, Table 1 illustrates the structure of non-oil trade in 1990-2016 and non-oil trade to oil and non-oil GDP ratios. The non-oil trade to non-oil GDP ratio rose from 1990 to 2012, where it reached up to 56.42%, after that it experienced a decline, reaching 38.46% in 2016. That may have been caused by the political instability of Saudi non-oil trade partners in the Middle East area, namely in Egypt, Tunisia, Yemen, Syria and Libya, that began in 2011. On the other hand, the non-oil trade to GDP wasn't affected enormously, which decreased from 30.05% in 2014 to 28.51% in 2016.

Table 2 also demonstrates that the average growth rates of non-oil trade and its components in Saudi Arabia during the period 1990-2016. It demonstrates that non-oil export increased with

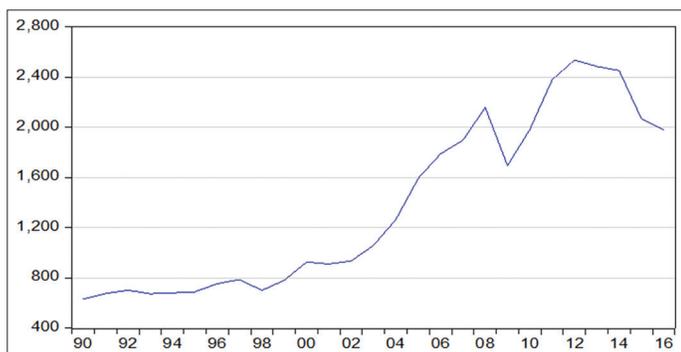
an average growth rate of about 9.81% while non-oil imports increased with an average growth rate of about 6.96%, and the total non-oil trade average growth rate was 7.52% for the same period. Thus, the non-oil export average growth rate is more than the non-oil trade average growth rate, showing that there is gradual improvement in non-oil trade balance in Saudi Arabia. We observe also in Figure 5 the non-oil exports relative importance of Saudi Arabian total non-oil trade has increased gradually from 14.7% to 24.5%. Consequently, the non-oil imports relative importance has declined from 85.3% to 75.5% during the same period.

Conversely, both Table 3 and Figure 6 illustrate that the total value traded has an annual growth rate average of nearly 16.60% throughout the 2002-2016 timeframe. We can also see that in 2016, five sectors collectively dominated over 60% of the total value traded, as indicated in Table 4. These five sectors consisted of the Banking and Financial Services, Petrochemical Industries, Real Estate Development, Industrial Investment and Insurance. Banking and Financial Services acquired the largest share, reaching almost 19% of the total traded value.

## 2. ECONOMIC REVIEW

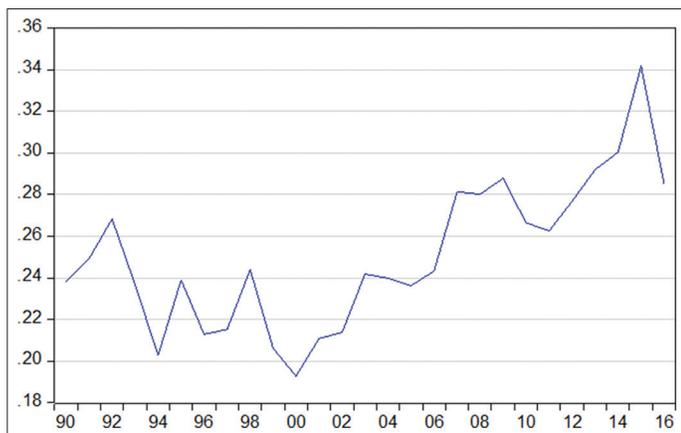
Several existing studies have already investigated how trade openness and financial growth has affected economic growth. Using data from 30 developing nations, Edwards (1992) focused on the 1970-1982 time frame to examine the affect of trade openness on

**Figure 1:** Real GDP in Saudi in 2010 constant price (billion riyal)



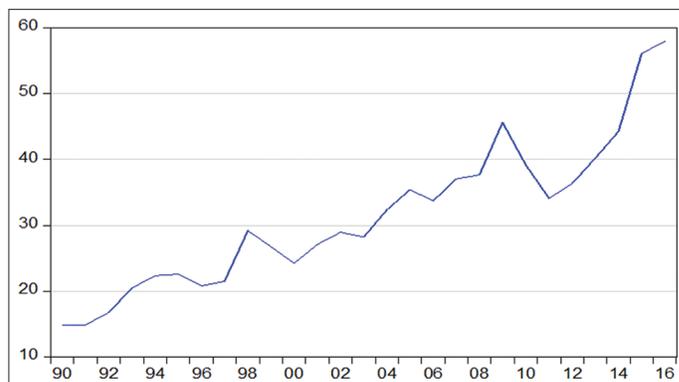
Source: Table A1 in the Appendix

**Figure 2:** Trade openness (non-oil trade to GDP ratio) in Saudi Arabia 2002-2016



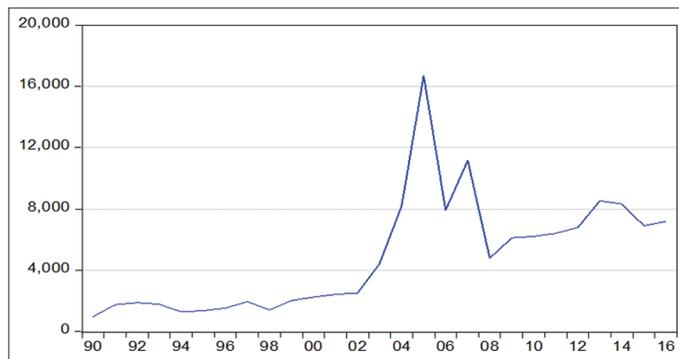
Source: Table A1 in the Appendix

**Figure 3:** Domestic credit provided to private sector to GDP ratio in Saudi Arabia during the period 1990-2016



Source: Table A1 in the Appendix

**Figure 4:** Stock market index in Saudi Arabia 1990-2016



Source: Table A1 in the Appendix

**Table 1: The structure of Non-oil trade at 2010 constant prices and its yearly relative shares of GDP 1990-2016**

Period	Non-Oil Exports (billion riyal)	Non-oil imports (billion riyal)	Total non-oil trade * (billion riyal)	% of * Non-oil GDP	GDP
1990	15.471	89.522	104.993	38.24	23.83
2000	24.806	112.178	136.984	33.13	19.28
2010	134.609	393.301	527.91	48.92	26.65
2011	176.568	484.21	660.778	54.30	26.25
2012	190.952	573.167	764.119	56.42	27.69
2013	202.443	614.965	817.408	55.26	29.19
2014	217.03	635.19	852.22	53.07	30.05
2015	189.901	645.627	835.528	47.26	34.19
2016	176.207	514.921	691.128	38.46	28.51

Source: Saudi Arabian Monetary Agency (SAMA) (2016), Annual Statistic, <http://www.sama.gov.sa/ar-sa/EconomicReports/Pages/YearlyStatistics.aspx>. \*Calculated by the author.  
GDP: Gross domestic product

**Table 2: Non-oil exports non-oil imports and total trade growth rates (1990-2016)**

Non-oil exports (%)	Non-oil imports (%)	Total non-oil trade (%)
9.81	6.96	7.52

Source: Table 1

**Table 3: Value traded and its growth rate in Saudi Stock Market 2002-2016 (in Current Prices)**

Year	Value (Billion Riyal)	*Average Growth Rate 2002-2016
2002	133.787	16.60
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	
2012	1929.3	
2013	1369.7	
2014	2146.5	
2015	1660.6	
2016	1148.926	

Source: Saudi Arabian Monetary Agency (SAMA) (2016), Annual Report, No. 53, <http://www.sama.gov.sa>. \*Calculated by the author

**Table 4: The structure of value traded of Saudi stock market by economic sector in current prices (2016)**

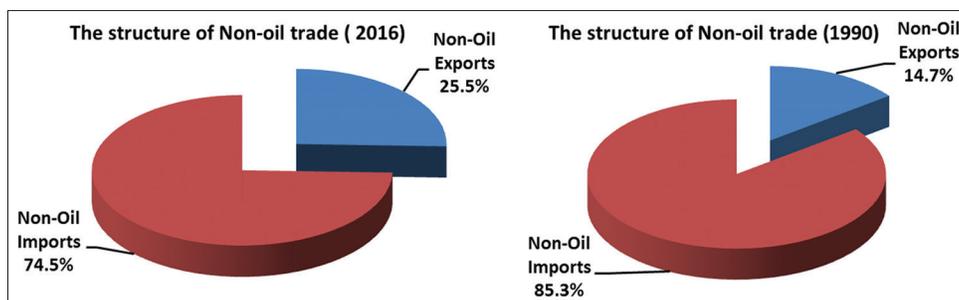
Sector	Value traded (billion riyal)	Share %
Petrochemical industries	214	18.50
Insurance	159	13.74
Agriculture and food industries	67	5.79
Banking and financial services	219	18.93
Industrial investment	67	5.79
Building and construction	51	4.41
Telecommunication and information technology	32	2.77
Multi-Investment	16	1.38
Real estate development	109	9.42
Cement	33	2.85
Retail	64	5.53
Transport	43	3.72
Energy and utilities	12	1.04
Media and publishing	35	3.03
Hotel and tourism	36	3.11
Total	1.157	100.00

Source: Saudi Arabian Monetary Agency (SAMA) (2016), Annual Report, No. 53, <http://www.sama.gov.sa>

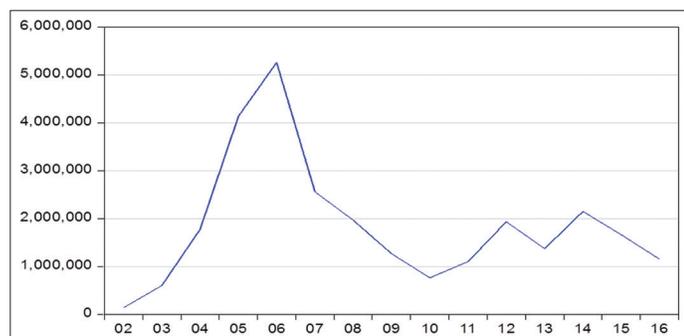
GDP growth. Edwards used two indicator sets designed by Leamer (1988) in his trade policy model. The first set restricts imports and includes tariff and non-tariff barriers as measures of trade policy. Trade intervention is utilized in the second set to show how much trade is changed by trade policy. Edwards found that RGDP growth was positively affected by all of the indicators for openness. At the same time, he found that trade intervention indicators had a very negative effect on the growth of GDP. These findings greatly support the premise that a nation can quickly promote its development by using high levels of trade openness and utilizing new technologies at a greater rate, whereas a country that has a more distorted trade system will most likely develop at a much slower rate with less openness.

The degree to which trade openness can affect economic growth is dependent on the degree of trade openness and which indicators are used to define openness. The following indicators have been used by numerous studies to define trade openness: The ratio of exports plus imports to GDP (as used in this current study), the

ratio of exports to GDP, the ratio of imports to GDP, import tariffs, imports penetration, the ratio of Foreign direct investment to GDP, import duties and dummy variables. The impact of trade openness on economic development in Sub-Saharan African countries were examined by Yasin (2001). Different areas in the Philippines were analyzed by Morrissey and Gugerty (2002) and Pernia and Quising (2003) and their studies also support that economic growth is encouraged by trade openness. The correlation between trade liberalization and economic expansion was also examined by Walde and Wood (2004) who discovered that both little to no tariff rates had a positive effect on economic growth. In contrast, trade policy was found to have little effect by Jawaid et al. (2011) in Pakistan as related to economic growth. However, Yusoff and Febriana (2012) also noted a positive effect on economic growth in Indonesia when measured against investments and trade openness. Dao (2015) also was able to show that trade openness has a positive effect on economic growth. Ibrahim (2014) found that, over both long-term and short-term periods, a considerable and positive correlation exists between the demand for imports of goods and the RGDP, both private and government consumption expenditures, gross capital formation expenditure and the relative price of imports to domestic price.

**Figure 5:** The structure of Saudi Non-oil trade 1990-2016

Source: Drawn by the author from Table 1

**Figure 6:** Value traded in Saudi stock market 2002-2016

Source: Table 3

Several studies support that trade openness can promote economic development in the long-run by allowing access to goods and services, distributing the allocation of resources efficiently and improving overall productivity through sharing new technology and knowledge (Barro and Sala-i-Martin, 1997; Rivera-Batiz and Romer, 1991b). These studies clearly indicate that the countries with higher levels of trade openness will economically surpass countries with less trade openness. Consequently, emerging countries benefit greatly by trading with more developed nations and are often encouraged to integrate trade liberalization into their policies by international agencies and donors in the hope of gaining a strong footing in the global market. These new policies were established as a result of the failing strategy that relied on import-substitution industrialization and supported by findings from related research that suggested a more external focus on economies encourages greater rates of economic growth. Early openness to trade helped support the great success of East Asian economies according to Stiglitz (1996). Therefore it does not come as much of a surprise that various emerging countries in the late 1970s witnessed trade liberalization policy changes that involved reducing tariff structures such as import and export taxes and other non-tariff barriers.

Conversely, nations that concentrate on producing poor quality products may be adversely affected by trade openness (Hausmann et al., 2007). Countries that export primary products, for instance, can be susceptible to trade shocks. However, regardless of these conflicting viewpoints, a broad belief that international trade openness benefits economic development persists, particularly as related to the economies of developing countries. Ample research supports the benefits of trade openness on a nation's economic

growth including studies by Bahmani-Oskooee and Niroomand (1999), Frankel and Romer (1999), Karras (2003), Yanikkaya (2003), Dollar and Kraay (2004), Wang et al. (2004), Freund and Bolaky (2008), Das and Paul (2011), Marelli and Signorelli (2011), Nowbutsing (2014), Zarra-Nezhad, et al. (2014) and Chang et al. (2009). Few studies contradict the beneficial impact of international trade on economic growth (Polat et al., 2015; Musila and Yiheyis, 2015; Ulaşan, 2015; and Vlastou, 2010) and their opposing conclusions may be due to the type of econometric techniques used, the indicator definitions used for trade openness or the countries sampled.

A close relationship between economic growth and financial development is supported by several existing studies. Schumpeter (1912) considers the financial development relationship a supply-leading one, and argues that the financial sector encourages economic success by effectively recognizing and investing in projects that provide high returns. He argued that a thriving financial system would promote technological innovation through the selection and funding of businesses that were anticipated to perform exceedingly well. Hicks (1969) observed that the industrialization of England stemmed from the financial development that provided the necessary flow of finances for immense projects.

Evidence is further supported by research presented by Levine and Zervos (1996) who discovered that measuring financial development could help predict subsequent economic growth, accrual of capital and changes in technology. Levine's research (1997) illustrates how financial development can decrease expenses related to obtaining information regarding businesses and management while also reducing the cost of making transactions. Levine also showed that resource allocation can be improved by the development of their financial sector which will in turn enhance economic growth in the long-run if more accurate information regarding technology production is provided and corporate control is exerted. Likewise, financial development promotes investments in high-return activities if the liquidity of financial capital is improved, facilitating risk management and decreasing the cost of trading.

Recent studies have shown the connection between financial growth and development that occurs mostly from endogenous growth models. Internal development can successfully be sustained through its own growth without relying on external factors.

Furthermore, that growth rate can be linked to income distribution, technology and preferences, as well as institutional arrangements. This introduces the theoretical groundwork that earlier researchers did not consider: Financial intermediation can have level effects as well as growth effects.

There have been several studies that presented theoretical models that examined how effective financial markets raised the return of investments and consequentially increased economic growth. Greenwood and Jovanovic (1990) proposed that a financial sector that focused on directing funds towards robust investments with high yields would lead to economic prosperity which would then enable the development of expensive financial systems. Levine's model (1991) also showed how stock markets affect growth by strengthening firm efficiency. A healthy financial system, as presented by Bencivenga and Smith (1991), would increase the amount of investments made towards non-liquid products, benefiting the economy. Saint-Paul (1992) described the financial sector's role as supporting specialized businesses by giving cautious investors the opportunity to hedge holdings in diversified portfolios. This would subsequently encourage productivity and growth. Atje and Jovanovic (1993) showed the manner in which the financial system aids investors by diffusing risk and offering a source of funding, thus leading them to the most profitable investments that further benefit the economy.

Ibrahim (2013) examined the connection between financial growth and economic expansion in Saudi Arabia for the 1989-2008 period by applying the fully modified ordinary least squares (FMOLS) approach. The findings suggest that the domestic bank credit to the private sector has an inconsequential and negative effect in the short term but a considerable and favorable effect on economic growth over time. However, the STM has a predictably positive but rather inconsequential effect over time while it has an unpredictable and insignificant effect in the immediate term. Lastly, the development of industrial production has a predictably positive and considerable effect on economic expansion in both the short and long terms.

Obstfeld (1994) confirmed that financial openness and the availability of international financial markets benefits companies as well as the economy. Bencivenga et al. (1995) showed that growth in the financial market provides additional benefits to industries, which need more time to integrate new technologies. Rajan and Zingales (1996) found that while the market grows, budding companies that struggle to independently finance their own projects stand to benefit more from external financial resources, and as a result develop much quicker.

Balckburn and Hung (1998) concluded that a developed financial system, allows the responsibility of monitoring projects to be delegated to financial intermediaries thus reducing transaction costs and boosting economic growth by channeling bigger savings into new investments. Furthermore, the authors demonstrated how a nation can find itself ensnared in a continual cycle of slow economic growth and poor financial development. In the same vein, Tsuru (2000) showed how developing a robust financial sector can have a positive effect on the saving rate which subsequently affects the economic growth rate. Murinde (1994) presented a study regarding

Singapore where they found that a causality link going both ways between economic expansion and financial growth. A causal relationship between economic growth and financial development was also confirmed by Demetriades and Khaled (1996) after extrapolating data from sixteen developing nations.

Berglöf and Bolton (2002) showed that the connection between economic growth and financial development seems to be inconsequential during the initial 10 years of transition, compared to the domestic credit to GDP ratio. Kenourgios and Samitas (2007) investigated the long term link between financial growth and economic growth in Poland and found that one of the key driving forces of long-term growth is credit to the private sector. They concluded that the manner of conveyance may differ but that financial market sectors connected to the public sector (excluding the stock market) encouraged a steady and flourishing economy. Winkler (2009) examined Southeastern European nations and their risk for being affected by quick financial development and related vulnerabilities. His study corroborated that the tactic of increasing financial development by using foreign banks does not provide assurances of financial stability. Lastly, Bonin and Watchel (2003) also showed that healthy financial intermediaries have a considerable effect on economic expansion.

The model hypothesis predicts that more trade openness and financial development facilitate economic growth. The empirical findings of this study will be analytically demonstrated. A few points resulting from these findings will be offered for debate shortly and the final conclusion will be relatively summarized.

### 3. DATA AND METHODOLOGY

This study examines the non-oil trade openness (NTOP) and impact of financial development on economic growth in Saudi Arabia for the 1990-2016 period by applying the FMOLS approach. This technique was originally designed to provide optimal estimates of Co-integration regressions by Philips and Hansen (1990) and Philips and Moon (1999). This approach utilizes kernel estimators of Nuisance parameters that affect the OLS estimator's asymptotic distribution. This application modifies least squares to consider serial correlation effects and check for the endogeneity in the regressors, which are caused by the existence of Co-Integrating Relationships, in order to achieve asymptotic efficiency.

The model below will be estimated according to the FMOLS approach:

$$RGDP = f(NTOP, BCGDP, STM) \quad (1)$$

Where: RGDP is the index of real gross domestic product (2010=100).

NTOP is the sum of the non-oil exports and imports as a percentage of GDP.

BCGDP is the domestic bank credits to private sector relative to gross domestic product,

SMI is the general STM.

The economic growth variable is proxied by the RGDP. The proxy of NTOP is calculated as the sum of the non-oil exports and imports as a percentage of GDP (BCGDP). The domestic bank credits

to private sector as a BCGDP; which is the value of loans made by banks to private enterprises and households divided by GDP; represents the credit market development. The general STM is used as a proxy for the stock market development. Both the BCGDP and STM are used as a proxy for stock market development, banking development and financial depth, which also expresses financial development. This analysis used annual data from the 1990-2016 period in Saudi Arabia, with 2010 being the base year.

All of the time series data was taken from the Saudi Arabia Monetary Authority (SAMA) 2016 annual report, except for the domestic bank credits to private sector which was taken from the World Development Indicator (WDI).

#### 4. EMPIRICAL RESULTS

Augmented Dickey- Fuller unit root and Phillips-Perron tests are both utilized to examine individual series and discover if any evidence indicates that the variables are stationary and integrated of the same order. Table 5 illustrates the findings regarding each variable. Akaike (1973) information criterion is used to select the lag parameter in order to remove the serial correlation in residual. As presented in Table 5, the null hypothesis of a unit root cannot be rejected for any of the series at a 1% significance level. Nonetheless, the unit root hypothesis is rejected for all

**Table 5: Unit root test**

Variable	ADF	PP
Log (RGDP)		
Level	-1.227029	-1.227029
First diff.	-4.286844 <sup>a</sup>	-4.257552 <sup>a</sup>
Log (NTOP)		
Level	-0.335396	-1.724567
First diff.	-3.688773 <sup>b</sup>	-6.295543 <sup>a</sup>
Log (BCGDP)		
Level	-0.207314	0.529330
First diff.	-5.196990 <sup>a</sup>	-5.565065 <sup>a</sup>
Log (STM)		
Level	-1.451777	-1.427689
First diff.	-6.294937 <sup>a</sup>	-6.265978 <sup>a</sup>

ADF-Dickey and Fuller (1979) unit root test with the Ho: Variables are I (1); PP-Phillips and Perron (1988) unit root test with the Ho: Variables are I (1); a, b and c indicate significance at the 1%, 5% and 10% levels, respectively. (C, T) indicate that the test executed with intercept, trend respectively

**Table 6: Cointegration test based on Trace of the Stochastic Matrix**

Hypothesized no. of CE (s)	Eigenvalue	Trace statistic	0.05 critical value	P**
None*	0.660199	50.66582	47.85613	0.0266
At most 1*	0.417051	21.52213	29.79707	0.3259
At most 2*	0.179429	6.951444	15.49471	0.5833
At most 3*	0.057959	1.612072	3.841466	0.2042

Trace test indicates 1 cointegrating eqn (s) at the 0.05 level. \*Denotes rejection of the hypothesis at the 0.05 level

**Table 7: Cointegration test based on maximal eigenvalue of the stochastic matrix**

Hypothesized no. of CE (s)	Eigenvalue	Trace statistic	0.05 critical value	P**
None*	0.660199	29.14369	27.58434	0.0313
At most 1*	0.417051	14.57069	21.13162	0.3201
At most 2*	0.179429	5.339372	14.26460	0.6985
At most 3*	0.057959	1.612072	3.841466	0.2042

Max-eigenvalue test indicates 1 cointegrating eqn (s) at the 0.05 level. \*Denotes rejection of the hypothesis at the 0.05 level

variables in the first-differenced data. Thus, we find that the series are integrated of order one.

As shown in Tables 6 and 7, the findings of the Likelihood Ratio tests are respectively based on the Maximum Eigenvalue and the Trace of the stochastic matrix. These tests both verify the existence of one cointegrating vector between the variables, i.e. they provide evidence of the variables having a long-run relationship.

The four variables are cointegrated and thus can be represented evenly in terms of an error correction framework.

Table 8 shows the findings of the FMOLS estimates over the long run for equation 2. The explanatory power is high (Adjusted R<sup>2</sup>=0.878). The results also indicate that, the NTOP, the domestic bank credit to the private sector and stock market are significant with their expected positive sign.

$$\log RGDP_{i,t} = \alpha_i + \beta_1 \log NTOP_{i,t} + \beta_2 \log BCGDP_{i,t} + \beta_3 \log STM_{i,t} + \zeta_{i,t} \tag{2}$$

In the short run, the results indicate that NTOP and stock market has expected positive and significant coefficient but the domestic bank credit to the private sector has considerable but negative unexpected sign. The error correction is correctly negatively signed and very significant. It shows a considerable magnitude (-0.268) indicating a speed adjustment process, that means if RGDP is 1% out of equilibrium, a 26.8% adjustment towards equilibrium will occur within 1 year.

$$\log \Delta RGDP_{i,t} = \alpha_i + \beta_1 \Delta \log NTOP_{i,t} + \beta_2 \Delta \log BCGDP_{i,t} + \beta_3 \Delta \log STM_{i,t} + \beta_4 EC(-1) + \xi_{i,t} \tag{3}$$

#### 5. CONCLUSIONS

The findings of several empirical studies that investigate the correlation between trade openness, financial growth and economic expansion vary for each country examined, the degrees of trade openness and financial growth, the time period reviewed as well as the method estimation used.

This study investigates the relationship between NTOP and financial growth impacts on economic expansion in Saudi Arabia

## REFERENCES

**Table 8: FMOLS estimates in the long run and short run (1990-2016)**

Variable	Coefficient	
	Long run	short run
LOG (NTOPI)	0.93 <sup>b</sup>	0.34 <sup>c</sup>
LOG (BCGDP)	0.51 <sup>b</sup>	-0.66 <sup>a</sup>
LOG (STM)	0.31 <sup>a</sup>	0.09 <sup>c</sup>
EC(-1)	-	-0.268 <sup>a</sup>
	R <sup>2</sup> =0.869	R <sup>2</sup> =0.622
	Durbin-Watson: 1.40	Durbin-Watson: 1.75

Source: Table A2 and Table A3 in Appendix. – a, b and c denote significance level at 1%, 5% and 10% respectively

for the 1990-2016 period by applying the FMOLS approach. NTOPI is represented by the sum of the non-oil exports and imports as a BCGDP. Financial market growth is demonstrated by the private sector's bank credits (the credit market development effect) and the general STM (stock market development).

In the long run, the findings show that, the NTOPI, the domestic bank credit to the private sector and stock market are significant with their expected positive sign. In the short run, the results indicate that NTOPI and stock market has expected positive and significant coefficient but the domestic bank credit to the private sector has considerable but negative unexpected sign. The error correction is correctly negatively signed and very significant. It shows a considerable magnitude (-0.268) indicating a speed adjustment process. Thus if RGDP is 1% out of equilibrium, a 26.8% adjustment towards equilibrium will occur within a year.

Above empirical findings of this study clearly indicate that there is positive relationship among economic growth and financial development, as well as positive relationship exists among trade openness and economic growth. Therefore, study recommended that government should try to reform financial system. Hence, Saudi Arabia should promote its trade liberalization policy, to boost financial growth, trade openness and economic growth. Over the past few decades, a policy incorporating trade openness has been a common recommendation to developing countries. Globalization relies on trade openness, which helps increase the integration of domestic economic structures through increasing international trade and other socio-economic variables. Trade openness encourages the removal of all tariff systems and any restrictions that prevent the free trade of goods and services between countries. It supports increasing the internationalization and commercialization of production and marketing.

The financial industry can also cultivate economic expansion in many ways such as facilitating the trade of goods and services through providing payment services; gathering funds from several investors; obtaining and analyzing information regarding business ventures and potential investment opportunities; allocating available funds to the most lucrative projects; monitoring investments and implementing corporate governance; and also diversifying, thus increasing liquidity and minimizing intertemporal risk. Every single one of these practices can affect the decisions made regarding investment and saving and, consequently, economic growth.

- Akaike, H. (1973), Information theory as an extension of the maximum likelihood principle. In: Petrov, B.N., Csaki, F., editors. Second International Symposium on Information Theory. Budapest, Hungary: Akademiai Kiado. p267-281.
- Atje, R., Jovanovic, B. (1993), Stock markets and development. *European Economic Review*, 37, 632-640.
- Bahmani-Oskooee, M., Niroomand, F. (1999), Openness and economic growth: An empirical investigation. *Applied Economics Letters*, 6, 557-561.
- Barro, R.J., Sala-i-Martin, X. (1997), Public finance in models of economic growth. *Review of Economic Studies*, 59(201), 645-662.
- Bencivenga, V, Bruce, D.S., Ross, M.S. (1996), Equity markets, transaction costs and capital accumulation: An illustration. *The World Bank Economic Review*, 10(2), 241-265.
- Bencivenga, V., Smith, B. (1991), Financial intermediation and endogenous growth. *Review of Economics and Studies*, 58, 195-209.
- Berglöf, E., Bolton, P. (2002), The great divide and beyond: Financial architecture in transition. *The Journal of Economic Perspectives*, 16(1), 77-100.
- Blackburn, K., Hung, V.T.Y. (1998), A theory of growth, financial development and trade. *Economica*, 65, 107-124.
- 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.
- Chang, R., Linda, K., Norman, L. (2009), Openness can be good for growth: The role of policy complementarities. *Journal of Development Economics*, 90, 33-49.
- Dao, A.T. (2015), Trade openness and economic growth. *The Park Place Economist*, 23(1), 46-62.
- Das, A., Paul, B.P. (2011), Openness and growth in emerging Asian economies: Evidence from GMM estimations of a dynamic panel. *Economics Bulletin*, 31, 2219-2228.
- Demetriades, P., Khaled, A.H. (1996), Does financial development cause economic growth? Time-series evidence from 16 countries. *Journal of Development Economics*, 51, 387-411.
- Dickey, D., Fuller, W. (1979), Distributions of the estimators for autoregressive time series with a unit root. *Journal of American Statistical Association*, 74, 427-431.
- Dollar, D., Kraay, A. (2004), Trade. Growth and poverty. *Economic Journal*, 114, 22-49.
- Edwards, S. (1992). Trade orientation, distortions and growth in developing countries. *Journal of Development Economics*, 39(1), 31-57.
- Frankel, J.A., Romer, D. (1999), Does trade cause growth?. *American Economic Review*, 89, 379-399.
- Freund, C., Bolaky, B. (2008), Trade, regulations, and income. *Journal of Development Economics*, 87, 309-321.
- Greenwood, J., Jovanovic, B. (1990), Financial development, growth and distribution of income. *Journal of Political Economy*, 98, 1076-1107.
- Hausmann, R., Hwang, J., Rodrik, D. (2007), What you export matters. *Journal of Economic Growth*, 12, 1-25.
- Hicks, J. (1969), *A Theory of Economic History*. Oxford: Clarendon Press.
- Ibrahim, M.A. (2013), Financial development and economic growth in Saudi Arabian economy. *Applied Econometrics and International Development*, 13(1), 133-144.
- Ibrahim, M.A. (2015), Merchandise import demand function in Saudi Arabia. *Applied Economics and Finance*, 2(1), 55-65.
- Jawaid, T., Faisal, S.Q., Nasir, A. (2011), Monetary-fiscal-trade policy and economic growth in Pakistan: Time series empirical investigation. *International Journal of Economics and Financial*, 1(3), 133-138.
- Karras, G. (2003), Trade openness and economic growth: Can we

- estimate the precise effect? *Applied Econometrics and International Development*, 3, 7-24.
- Kenourgios, D., Samitas A. (2007), Impact of mergers and acquisitions on stock returns of tramp shipping firms. *International Journal of Financial Services Management*, 2(4), 327-343.
- Leamer, E. (1988), Measures of openness. In: Baldwin, R., editor. *Trade Policy and Empirical Analysis*. Chicago: University of Chicago Press.
- Levine, R. (1991), Stock markets, growth, and tax policy. *Journal of Finance*, 46, 1445-1465.
- Levine, R. (1997), Financial development and economic growth: Views and agenda. *Journal of Economic Literature*, 35, 688-726.
- Levine, R., Zervos, S. (1996), Stock Markets, Banks, and Economic Growth. *World Bank Policy Research Working Paper*, No. 1690.
- Marelli, E., Signorelli, M. (2011), China and India: Openness, trade and effects on economic growth. *The European Journal of Comparative Economics*, 8, 129-154.
- Morrissey, R., Gugerty, E. (2002), Inequality, Trade Liberalisation and Growth. Working Paper, No.102/02, CGSR, University of Warwick.
- Murinde, V.F.E. (1994), Financial development and economic growth in Singapore: Demand following or supply-leading? *Applied Financial Economics*, 4, 391-404.
- Musila, J.W., Yiheyis, Z. (2015), The impact of trade openness on growth: The case of Kenya. *Journal of Policy Modeling*, 37, 342-354.
- Nowbutsing, B.M. (2014), The impact of openness on economic growth: Case of Indian Ocean rim countries. *Journal of Economics and Development Studies*, 2, 407-427.
- Obstfeld, M. (1994), Risk-taking, global diversification, and growth. *The American Economic Review*, 84(5), 1310-1329.
- Oke, O.A. (2007), International Trade as An Engine of Growth in Developing Countries: A Case Study of Nigeria (1980-2003). Available from: <http://www.searchwarp.com/swa213339.htm>. [Last accessed on 2008 Aug 20].
- Pernia, E.M., Quising, P.F. (2003), Trade openness and regional development in a developing country. *Annals of Regional Science*, 37, 391-406.
- Phillips, P.C.B., Hansen, B.E. (1990), Statistical inference in instrumental variables regression with I(1), processes. *Review of Economic Studies*, 57, 99-125.
- Phillips, P.C.B., Moon, H.R. (1999), Linear regression limit theory for nonstationary panel data. *Econometrica*, 67, 1057-1111.
- Phillips, P.C.B., Perron, P. (1988), Testing for a unit root in time series regression. *Biometrika*, 75, 335-346.
- Polat, A., Shahbaz, M., Ur, R.I., Satti, S.L. (2015), Revisiting linkages between financial development, trade openness and economic growth in South Africa: Fresh evidence from combined cointegration test. *Quality and Quantity*, 49, 785-803.
- Rajan, R.G., Zingales, L. (1998), Financial dependence and growth. *American Economic Review*, 88, 559-586.
- Rivera-Batiz, L., Romer, P. (1991b), International trade with endogenous technological change. *European Economic Review*, 35, 715-721.
- Rodrik, D. (2001), The Global Governance of Trade As if Development Really Mattered. Available from: <http://www.ksghome.harvard.edu/~drodrik/undptrade.pdf>. [Last accessed on 2001 Jul 14].
- Saint-Paul, G. (1992), Technological choice, financial markets and economic development. *European Economic Review*, 36, 763-781.
- Saudi Arabian Monetary Agency (SAMA). (2016), Annual Report, No. 53, Available from: <http://www.sama.gov.sa>.
- Schumpeter, J.A. (1912), *Theorie der Wirtschaftlichen Entwicklung [The Theory of Economic Development]*. Cambridge, MA: Harvard University Press.
- Stiglitz, J.E. (1996), Some lessons from the East Asian Miracle. *The World Bank Research Observer*, 11(2), 151-177.
- Tsuru, K. (2000), Finance and Growth: Some Theoretical Considerations, and A Review of the Empirical Literature. Economics Department Working Papers, OECD.
- Ulaşan, B. (2015), Trade openness and economic growth: Panel evidence. *Applied Economics Letters*, 22, 163-167.
- Vlastou, I. (2010), Forcing Africa to open up to trade: Is it worth it? *The Journal of Developing Areas*, 44, 25-39.
- Walde, K., Wood, C. (2004), The empirics of trade and growth: Where are the policy recommendations? *International Economics and Economic Policy*, 1(2-3), 275-292.
- Wang, C., Liu, X., Wei, Y. (2004), Impact of openness on growth in different country groups. *The World Economy*, 27, 567-585.
- 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. Available from: <http://www.data.worldbank.org/indicator>.
- Yanikkaya, H. (2003), Trade openness and economic growth: A cross-country empirical investigation. *Journal of Development Economics*, 72, 57-89.
- Yasin, M. (2001), Public spending and economic growth: Empirical investigation of sub Saharan Africa. *Journal of the Southwestern Society of Economists*, 30, 51-58.
- Yusoff, M., Febriana, I. (2012), Trade Openness, Exchange Rate, Gross Domestic Investment, and Growth in Indonesia. Osaka Japan: The Asian Conference on the Social Sciences: Official Conference Proceedings.
- Zarra-Nezhad, M., Fatimah, H., Seyed, A.A. (2014), Trade-growth nexus in developing and developed countries: An application of extreme bounds analysis. *Asian Economic and Financial Review*, 4, 915-929.

## APPENDIX

Table A1: Economic data (1990-2016)

Period	Real GDP (2010=100) (Billion Riyal)	Non-oil Trade Openness	Domestic credit to the private sector to GDP % (BCPGDP)	Stoke market index
1990	631.49	23.83	-	979.77
1991	676.92	24.92	14.87	1765.24
1992	702.37	26.84	16.76	1888.65
1993	674.14	23.69	20.47	1793.3
1994	681.49	20.28	22.36	1282.87
1995	689.12	23.9	22.57	1367.6
1996	753.56	21.29	20.79	1531
1997	787.78	21.52	21.51	1957.8
1998	700.13	24.39	29.19	1413.1
1999	781.94	20.62	26.74	2028.53
2000	926.78	19.28	24.24	2258.29
2001	910.61	21.09	27.09	2430.11
2002	935.5	21.38	28.95	2518.08
2003	1058.57	24.19	28.23	4437.58
2004	1265	23.98	32.35	8206.23
2005	1593.46	23.63	35.42	16712.6
2006	1787.97	24.33	33.72	7933.29
2007	1895.59	28.13	37.07	11176
2008	2157.43	28.02	37.68	4802.99
2009	1695.1	28.79	45.63	6121.76
2010	1980.78	26.65	39.16	6220.8
2011	2378.63	26.25	34.1	6417.7
2012	2534.87	27.69	36.34	6801.2
2013	2484.52	29.19	40.22	8535.6
2014	2451.33	30.05	44.29	8333.3
2015	2067.19	34.19	56.13	6911.8
2016	1980.53	28.51	57.98	7210.4

Table A2: Long run fully modified least squares regression results

<b>Dependent Variable: LOG (RGDP)</b>				
<b>Method: Fully Modified Least Squares</b>				
<b>Date: 01/10/18-Time: 10:13</b>				
<b>Sample (adjusted): 1990-2016</b>				
<b>Included observations: 27 after adjustments</b>				
<b>Cointegrating equation deterministics: C</b>				
<b>Long-run covariance estimate (Bartlett kernel, Newey-West fixed bandwidth=3.0000)</b>				
Variable	Coefficient	Standard Error	t-Statistic	P
LOG (NTOPI)	0.925415	0.368569	2.510830	0.0195
LOG (BCGDP)	0.513198	0.191001	2.686887	0.0132
LOG (STM)	0.307903	0.084149	3.659011	0.0013
C	4.163628	0.943238	4.414184	0.0002
R-squared	0.869163	Mean dependent var	7.102495	
Adjusted R-squared	0.852098	S.D. dependent var	0.513317	
S.E. of regression	0.197412	Sum squared resid	0.896344	
Durbin-Watson stat	1.395505	Long-run variance	0.039778	

**Table A3: Short run fully modified least squares regression results**

<b>Dependent Variable: D (LOG (RGDP))</b>				
<b>Method: Fully modified least squares</b>				
<b>Date: 01/10/18-Time: 00:30</b>				
<b>Sample (adjusted): 1992 2016</b>				
<b>Included observations: 25 after adjustments</b>				
<b>Cointegrating equation deterministics: C</b>				
<b>Long-run covariance estimate (Bartlett kernel, Integer Newey-West fixed bandwidth=3.0000)</b>				
<b>Variable</b>	<b>Coefficient</b>	<b>Standard error</b>	<b>t-Statistic</b>	<b>P</b>
D (LOG (RIP1))	0.341746	0.166775	2.049149	0.0538
D (LOG (RSMI))	-0.660866	0.121972	-5.418195	0.0000
D (LOG (BCGDP))	0.091281	0.036371	2.509765	0.0208
RESID01(-1)	-0.268078	0.089870	-2.982957	0.0074
C	0.063247	0.015120	4.183133	0.0005
R-squared	0.621846	Mean dependent var	0.042943	
Adjusted R-squared	0.546215	S.D. dependent var	0.113349	
S.E. of regression	0.076356	Sum squared resid	0.116604	
Durbin-Watson stat	1.752255	Long-run variance	0.004035	