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FDI, TRADE, AND ECONOMIC GROWTH IN SINGAPORE--EVIDENCE FROM TIME-SERIES CAUSALITY ANALYSES

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ABSTRACT

This paper investigates the relationship between Trade, Foreign Direct Investment (FDI), and Gross Domestic Product (GDP) for Singapore over the period 1970-2010. The literature on Foreign Direct Investment (FDI), Trade and economic growth generally points to a positive Trade and Foreign Direct Investment (FDI)-Growth relationship. However, very few studies offer direct tests of causality to the three variables. The economic growth may induce trade and Foreign Direct Investment (FDI) stimulates economic growth. The present analysis focuses on Singapore, where growth of Exports has been the most pronounced. The Cointegration analysis suggested that there is a long-run equilibrium relationship. The results of Granger causality test showed that there is a causal relationship between the examined variables.

KEYWORDS

Causality, Cointegration, Exports, Foreign Direct Investment, Imports, Stationarity.

1.1: INTRODUCTION

Foreign Direct Investment (FDI) refers to long term participation by one country into another country. It usually involves participation in management, joint-venture, transfer of technology and expertise. FDI can be a significant driver of development in poor nations. Many of the East Asian tigers such as China, Singapore and Malaysia benefited from investment abroad. The Gross Domestic Product (GDP) is a measure of a country's overall economic output. It is the market value of all final goods and services made within the borders of a country in a year.

Singapore has historically been reliant on external trade from 2004 to 2008; total trade was about 3.5 times India's GDP (Economic Survey of Singapore- 2008). The extent to which the FDI - trade relationship is affected by host-country heterogeneity. The counts and values of Japanese aggregate FDI and trade flows into more than- 100 geographically and developmentally diverse countries, it is shown that Japanese FDI in 1990s was generally trade creating. However, the extent to which FDI complemented trade varied by geographic, developmental, and market servicing status of the host countries (Bedassa Tadesse, and Michael Ryan, 2004). The hypothesis is tested in terms of labor and total factor productivity growth and this provides a means of transmission via. which exports can affect or be affected by GDP growth. Considering the impact of imports on GDP growth and productivity growth serve a similar purpose (Renuka mahadevan, 2009).

1.2. IMPORTANCE OF FDI AND EXPORTS INTO ECONOMIC GROWTH:

It is well-known that, "economic miracle" took place in Asia (World Bank, 1993), starting from Japan in the 1960s to early 1970s, followed by four Asian New Industrial Economies (NIEs), Taiwan, Korea, Singapore and Hong Kong, in the 1970s and 1980s.

Thus, institutional and organizational factors aside, the most common economic factor mentioned in these studies is openness of the economy, namely, export promotion policy, and acceptance of inward FDI. The role of trade and FDI have been extensively discussed in recent years both in theory and in practice. Generally speaking, exports, imports, and inward FDI are sources of new ideas, new goods, new domestic competition, and technology transfer from advanced countries. In addition, to attract FDI, the host governments must maintain stable macroeconomic environment and reduce market distortions. All these enhance economic efficiency and productivity of the economy. The positive relation between openness and economic growth seems overwhelming, at least in theory. However, empirical studies of causalities between openness (trade-FDI) and economic growth are mixed at best. Their relations are not as obvious and straightforward, as can be seen in the survey of literature in the following section.

The real GDP levels of all other economies have increased overtime, and except China, all economies were affected by the Asian financial crisis of 1997, and the real GDP levels have become more fluctuating after 1997, although less so in Taiwan, Hong Kong and Singapore. Exports play a vital important role in all nine economies. By 1997, the real exports have exceeded real GDP in Hong Kong and Singapore, almost the same in Malaysia.

Since 1997, East Asian financial crisis, the relationship between FDI, exports and economic growth has gained importance and attention among policy makers and researchers. Due to volatility experienced in the short term capital flows developing and less developed countries shifted their focus from attracting short term capital flows to FDI due to its long term effects. However, the understanding of the long term impacts and benefits of FDI is not clear as FDI is not attracted uniformly to each country which makes it difficult to identify the impact of FDI on economic growth.

In an open economy, technology and trade, especially through exports and imports and thus promote economic growth (Grassman and Gelpman, 1997; Frankel and Romer, 1999; Frankel, Romer, Cyrus, 1996). However, growth also has effects on trade (Rodriguez and Rodrik, 2000). The observations on the FDI - growth nexus and Trade - growth nexus lead us to examine the third side of a triangular relations; FDI - Trade nexus (Frank S.T. Hsiao, and Mei - Chu, W. Hsiao, 2006). The role of trade policy on economic growth has been the focus of considerable academic effort. Openness, namely, the sum of exports and imports to GDP, has been considered one of the main determinants of economic growth.

Export expansion can increase productivity offering greater economies of scale. Exports are likely to alleviate foreign exchange constraints and can thereby provide greater access to international markets (Melina Dritsaki, Caido Dritsaki and Antonios Adamopoulos, 2004). Many early studies of the links between exports and growth confirm a statistical relationship between export growth and out put growth (Michaely, 1977; Krueger, 1978; Balassa, 1978; and Fedder, 1982).

Nevertheless, the results obtained by empirical studies, which recently have applied causality test to examine the nature of a causal relationship between exports and economic growth are also mixed. Although some studies have found a positive association, others resulted in reverse conclusions. It is not clear in the literature to what degree is the positive relation between trade and growth due to the fame that trade is stimulative of growth and to what degree it reflects the fact that growth leads to trade. The rate of economic growth differs from country to country, technological advance increases slowly or rapidly relatively to the economic structure of each country, while when the monetary and fiscal policy are not taking account of, they have a negative effect on economic growth (Melina Dritsaki, Chaido Dritsaki and Antonios Adamopoulos, 2004).

The role of trade policy on economic growth has been the focus of considerable academic effort. Openness, namely the sum of exports and imports to GDP, has been considered as one of the main determinants of economic growth. Export-led growth postulates that exports consist the principal channel through which the liberalization process can affect the output level and eventually the rate of economic growth.

2. REVIEW OF LITERATURE

2.1: INTRODUCTION

In this Study is devoted to present a brief review of the earlier works related to the inflows of Foreign Direct Investment, Exports, Imports and GDP in Singapore. The available research works on FDI, Exports, Imports and GDP are given below.

2.2: STUDIES ANALYZING THE RELATIONSHIP BETWEEN FDI, EXPORTS, IMPORTS AND GDP

The empirical and theoretical works have tried to establish the connection either between FDI inflows and Economic Growth. A subset of these works has employed Granger Causality tests to determine the direction of causality in one of these connections, for instance, FDI and Economic growth: Argiro Moudatsou and Dimitrios Kyrkilis (2009), Duasa (2007), Hansen, H, and Rand J. (2006), Chowdhury and Mavrotas (2005), Basu, P, C. Chakraborty and Reagle (2003), Hsiao and Shen (2003), Chakraborty and Badu (2002), Liu et al (2002), Wang (2002), Nair-Reichert and Weinhold (2001), Ericsson and Irandoust (2000); Exports, FDI and Economic Growth: Georgantopoulos and Anastasios D. Tsamis (2011), Reza Ahmadi and Mojtaba Ghanbarzadeh (2011), Adil Khan Miankhel, Shandre Mugan Thangavelu and Kaliappa Kalirajan (2009), Yao (2006), Frank S.T. Hsiao and Mei – Chu W. Hsiao (2006), Metwally (2004), Alia and Dcal, (2003), Balamoune – Lutz (2004), Alici and Ucal (2003), Alguacil, M, Cuadros, A, and Orts, V (2002). But, limited to my knowledge, none studies the causal link of FDI, Exports, Imports and GDP have not been studied much.

Hang T. Nguyen (2011), to examine the impact of trade liberalization on economic growth for Malaysia and South Korea. A four variable vector auto regression (VAR) is used to study the relationships between trade, FDI and economic growth over the time period from 1970 to 2004 (for Malaysia) and from 1976 to 2007 (for Korea). He estimated results from the Granger causality test, impulse response functions and variance decompositions confirm that exports are long-run source of both Malaysia and Korean economic growth. Exports are not affected by the other three variables. The differences in the estimated results are explained by the differences in the economic policies between the two countries.

Muhammad Shahzad Iqbal and Faiz Muhammad Shaikh (2010) to examine the causality relationship between FDI, Trade Economic growth in Pakistan. Using quarterly time series data from 1998 to 2009, this paper examines the causality relationship between foreign direct investment, international trade and economic growth in Pakistan. They used VAR model, the integration and Cointegration analysis suggested that there is a long run relationship among the factors. The results of VECM causality test find bidirectional causality between foreign direct investment, export and economic growth, with are two important factors that enhance the effect of economic growth in Pakistan.

Adil Khan Miankhel, Shandre Mugan Thangavelu and Kaliappa Kalirajan (2009), to analyse in this paper adopts a time series framework of the Vector Error Correction Models (VECM) to study the dynamic relationship between export, FDI and GDP for six emerging countries of Chile, India, Mexico, Malaysia, Pakistan and Thailand. They suggest that in South Asia, there is evidence of an export led growth hypothesis. However, in the long run, we identify GDP growth as the common factor that drives growth in other variables such as exports in the case of Pakistan and FDI in the case of India. The Latin American countries of Mexico and Chile show a different relationship in the short run but in the long run, exports affect the growth of FDI and output. In the case of East Asian countries, we find bi-directional long run relationship among exports, FDI and GDP in Malaysia, while we find a long run uni-directional relationship from GDP to export in case of Thailand.

Mayang Pramadhani, Rakesh Bissondeal and Nigel Driffield (2007) have examined the causal relationships between inward direct investment, growth and trade in Indonesia for the period 1990 – 2004. They seek to establish whether there were strong weak positive of negative associations between the presences of multinational enterprises and Indonesian exports and imports determinant the causal links between the variables.

Nandita Dasgupta (2007) has studied the effects of international trade and investment related macroeconomic variables, namely, exports, imports and FDI inflows on the outflows of FDI from India over from 1970 to 2005. In this paper unidirectional Granger Causality is found from export and import to FDI out flows but no such Causality exists from FDI inflows to the corresponding outflows from India.

Melina Dritsaki, Chaido Dritsaki and Antonios Adamopoulos (2004), investigates the relationship between Trade, FDI and economic growth for Greece over the period 1960-2002. The cointegration analysis suggested that there is a long – run equilibrium relationship. The results of Granger causality test showed that there is a causal relationship between economic growth, trade and FDI.

Liu, Burrige, and Sinclair, (2002), predicted a longitudinal relationship between FDI, trade and the economic growth in China. By using the data for 1981-1997 fiscal years, they found a two-way relationship between FDI, economic growth and import.

Khan and Leng (1997) examine the interactions among inward – FDI, exports and economic growth for Singapore, Taiwan and South Korea, respectively at the aggregate level during the period of 1965 to 1995 by using Granger Causality Test. They claim that there is no evidence to support the causal relationship between FDI and Exports in Taiwan and South Korea. Moreover, a one – way causal relationship which flows from exports to inward FDI is found in Singapore.

3. RELATIONSHIP BETWEEN FDI, TRADE AND GDP FOR SINGAPORE

3.1: INTRODUCTION

In this study, an attempt is made to analyse the broad trends in FDI inflows, Exports, Imports and Economic Growth of Singapore. To be more specific, this study describes the FDI inflows, Exports, Imports in terms of actual value, FDI, Exports, and Imports index no and annual growth rate for Singapore. This analysis was done using 41 years data over the period from 1970 to 2010 for Singapore.

3.2. FOREIGN DIRECT INVESTMENT (FDI) INFLOWS INTO SINGAPORE

The data on FDI inflows into Singapore are given in Table 1. During the decade from 1970 to 1979, the FDI inflow has grown considerably. The value of FDI inflows into Singapore had increased to 836.03 Millions of US Dollars in 1979 from 93 Millions of US Dollars in 1970. The value of index number had increased by 8 times in 1979. In this decade the annual growth rate has grown from -3.57 per cent in 1974 to touch the highest level of 178.76 per cent in 1979. The average value of FDI received by Singapore in this decade works out to 301.3 Millions of US Dollars and the average value of annual growth rate 88.77 per cent per year respectively.

During the next decade from 1980-89, the FDI inflows has declined from 1.66 Billion of US Dollars in 1981 to 1.05 Billion of US Dollars in 1985. During the period from 1986 to 1989, the value of FDI inflows has grown sizably. The value of FDI has risen to 3.66 Billion of US Dollars in 1988 from 1.71 Billion of US Dollars in 1986. In this decade the annual growth rate has increased from - 3.50 per cent in 1982 to touch the highest level of 65.83 per cent in 1987 and then it started showing a decline trend. The average value of FDI received by Singapore in this decade works out to 1.10 Billion of US Dollars and the average value of annual growth rate 14.84 per cent per year respectively.

During the next decade 1990-1999 the FDI inflows has grown sizably. The value of FDI inflows into Singapore had increased to 16.58 Billions of US Dollars in 1999 from 5.57 Billion of -US Dollars in 1990. In this decade the annual growth rate has increased from -12.33 per cent in 1991 to touch the highest level of 126.66 per cent in 1999. The average value of FDI received by Singapore in this decade works out to 8.48 Billion of US Dollars and the average value of annual growth rate 21.93 per cent per year respectively.

During the time period from 2000 to 2010, the FDI inflow has grown sizably. The value of FDI inflows into Singapore had increased from 16.48 Billions of dollars in 2000 to touched 38.64 Billions of US Dollars in 2010. In this period the highest annual growth rate was fixed at 152.89 per cent in 2010. The average value of FDI received by Singapore in this period works out to 18.07 Billion of US Dollars and the average value of annual growth rate 15.61 per cent per year respectively.

3.3. EXPORTS

The data on Export in Singapore are given in Table 2. During the decade from 1970 to 1979 the export value has grown sizably. The value of export in Singapore had increased, from 1.55 Billion of US Dollars in 1970 to 14.23 Billion of US Dollars in 1979. The value of index number had increased by 9 times in 1979. In this decade the annual growth rate has decline from 66.86 per cent in 1973 to -7.45 per cent in 1975 and then started showing an upward trend. The average value of export received by Singapore in this decade works out to 5.95 Billion of US Dollars and the average value of annual growth rate 90.68 per cent per year respectively.

During the next decade from 1980 to 1989, the export has grown considerably. The value of export in Singapore had increased from 19.38 Billion of US Dollars in 1980 to 44.66 Billion of US Dollars in 1989. In this decade the annual growth rate has raised from -0.85 per cent in 1982 to touch the highest level of 37.01 per cent in 1988. The average value of export in this decade works out to 26.50 Billion of US Dollars and the average value of annual growth rate 14.50 per cent per year respectively.

During the next decade from 1990 to 99, the export value has increased from 52.73 Billion of US Dollars in 1990 to touch the high level of 125.01 Billions of US Dollars in 1996 and then it started showing a declining trend. In this decade the annual growth rate has declined from 30.82 per cent in 1994 to -0.02 per cent in 1997. The average value of export in this decade works out to 93.88 Billion of US Dollars and the average value of annual growth rate 13.05 per cent per year respectively.

During the time period from 2000 to 2010, the export value has grown sizably. The value of export in Singapore had increased to 351.87 Billion of US Dollars in 2008 from 121.75 Billion of US Dollars in 2001. In this decade the annual growth rate has increased from -11.64 per cent in 2001 to touch the highest level of 30.40 per cent in 2010. The average value of export in this decade works out to 215.10 Billion of US Dollars and the average value of annual growth rate 18.90 per cent per year respectively.

3.4. IMPORTS

The data on Import in Singapore is given in Table 3. During the decade from 1970 to 1979, the import value has grown sizably. The value of import in Singapore had increased from 2.46 Billion of US Dollars in 1970 to 17.64 Billion of US Dollars in 1979. The value of index number increased by 7 times in 1979. In this decade, the highest value fixed at 63.44 per cent in 1974. The average value of import received by Singapore in this decade works out to 80.58 Billion of US Dollars and the average value of annual growth rate 68.53 per cent per year respectively.

During the next decade from 1980 to 1989, the import value has grown considerably. The value of import in Singapore had increased to 49.66 Billion of US Dollars in 1989 from 24.01 Billion of US Dollars in 1980. The value of index number had increased by 2 times in 1989. In this decade the annual growth rate has grown from -0.03 per cent in 1983 to touched the highest level of 34.72 per cent in 1988. The highest value fixed at 36.06 per cent in 1980. The average value of import received by Singapore in this decade works out to 31.44 Billion of US Dollars and the average value of annual growth rate 11.87 per cent per year respectively.

During the next decade from 1990 to 99, the time period from 1990 to 97 the import value has grown considerably. The value of import in Singapore had increased from 60.77 Billion of US Dollars in 1990 to 132.44 Billion of US Dollars in 1997 and then it started showing a declining trend. In this decade the annual growth rate has declined from 22.38 per cent in 1990 to -20.92 per cent in 1998. The average value of import in this decade works out to 99.10 Billion of US Dollars and the average value of annual growth -rate 9.19 per cent per year respectively.

During the time period from 2000 to 2010, the import value has grown considerably. The value of import in Singapore had increased to 310.79 Billion of US Dollars in 2010 from 116.00 Billion of US Dollars in 2001. In this decade the annual growth rate has grown -13.78 per cent in 2001 to touch the highest level of 26.45 per cent in 2010. The average value of import received by Singapore in this decade works out to 192.78 Billions of dollars and the average value of annual growth rate 16.79 per cent per year respectively.

3.5. BALANCE OF TRADE (BOT)

The data on foreign trade deficit in Singapore are given in Table 4, during the decade from 1970 to 79. The trade balance displayed deficits which was the lowest in 1970 and highest in 1975, respectively 907.81 Millions of US Dollars and 3 billion of US Dollars. During the decade the rate of Export (Import coverage ratio) was the highest in 1979 and the lowest in 1971, respectively 80.67 per cent and 62.05 per cent averaging to the level of 70.59 per cent.

In the next decade the trade balance displayed deficits which was the lowest in 1982 and highest 1986, respectively 7.4 billion of US Dollar and 3 billion of US Dollars. During the decade the rate of Export/ Import coverage ratio was the highest in 1989 and lowest in 1982, respectively 89.94 per cent and 73.80 per cent, averaging to the level of 83.47 per cent. In the next decade in the years 1998 and 1999. The Bot shows a positive trend the trade balance displayed deficits which was the lowest value of 11 billion of US Dollars in 1993, and the highest value of 5176 billion of US dollar in 1998 respectively, in this decade the rate of Exports/Imports coverage ratio was the highest in 1998 and lowest in 1990. Respectively 104.94 per cent and 86.76 per cent averaging to the level of 93.7 per cent.

Since 1998 the Balance of payments shows a positive trend, During the period from 2000 to 2010 the trade between displayed which was the lowest in 2000 and highest in 2010 respectively 3.3 billion of US Dollars and 41.1 billion of US Dollars. During the same time period the rate of Export (Import) coverage ratio was the highest in 2005 and lowest in 2000, respectively 113.86 percent and 102.42 per cent averaging to the level of 110.71 per cent.

3.6. TREND ANALYSIS FOR THE FDI, EXPORTS AND IMPORTS INTO SINGAPORE

3.6.1. FDI

The results of the trend analysis given in Table 5 reveal that the FDI inflows into Singapore increased annually by 49.77 Millions of US Dollars in 1970-79. The regression coefficient of the semi log linear model implies that the FDI inflows increased at the compound growth rate of 18.41 per cent per year. The regression coefficient in simple linear model was significant at the five per cent level and semi log linear model was significant at the one per cent level. The value of adjusted R^2 exceeds 0.5 in both cases. It means that the FDI inflows into Singapore had registered a linear trend in this period around 52 per cent of variations in the dependent variable are explained by the independent variable.

The FDI inflows into Singapore increased annually by 221.02 Millions of US Dollars in 1980-89. The regression coefficient of the semi log linear model implies that FDI inflows increased at the compound growth rate of 10.85 per cent per year. The regression co-efficient in both models are significant at the five per cent level. The value of adjusted R^2 around 0.5 in the both cases. It means that the FDI inflows into Singapore had registered a linear trend in this period and around 56 per cent of variations in the dependent variable are explained by the independent variable.

The FDI inflows into Singapore increased annually by 1162 Millions of US Dollars in 1990-99. The regression co-efficient of the semi log linear model implies that FDI inflows increased at the compound growth rate of 15.84 per cent per year. The regression coefficients in simple linear model were significant at the one per cent level and semi log linear model was significant at the five per cent level. The value of adjusted R^2 exceeds 0.45 in both cases. It means that the FDI inflows into Singapore had registered a linear trend in this period and around 62 per cent of variations in the dependent variable are explained by the independent variable.

The FDI inflows into Singapore increased annually by 1.61 Billion of US Dollars in 2000-10. The regression co-efficient of the semi log linear model implies that FDI inflows increased at the compound growth rate of 7.25 per cent per year. The regression co-efficient in models are insignificant. The value of adjusted R^2 in both models is 0.16 and 0.08 respectively. It means that the FDI inflows into Singapore had registered a linear trend in this period and around 24 per cent of variations in the dependent variable are explained by the independent variable.

Comparing the four periods, 1970-79, 1980-89, 1990-99 and 2000-10 the FDI inflows into Singapore increased annually by the highest amount 1.61 Billion of US Dollars in the fourth period. The highest compound growth rate of 18.41 per cent and was recorded only in 1970-79.

3.6.2. EXPORTS

The results of the trend analysis given in Table 5 imply that the Exports on Singapore increased annually by 1.28 Billion of US Dollars in 1970-79. The regression coefficient of the Semi log linear model implies that the exports increased at the compound growth rate of 27.76 per cent per year. The regression coefficients in the both models are significant at the one per cent level. The value of adjusted R^2 is 0.90 in the simple linear model and it is 0.96 in the semi log linear model. It means that the exports on Singapore has registered a consistent linear trend in this period around 91 per cent of variations in the dependent variable are explained by the independent variable.

The Exports on Singapore increased annually by 2.4 Billion of US Dollars in 1980-89. The regression co-efficient of the semi log linear model implies that Exports increased at the compound growth rate of 8.55 per cent per year. The regression co-efficient in both models are significant at one per cent level. The value of adjusted R^2 is 0.67 in the simple linear model and it is 0.74 in the semi log linear model. It means that the Exports on Singapore has registered a linear trend in this period and around 70 per cent of variations in the dependent variable are explained by the independent variable in the simple linear model.

The Exports on Singapore increased annually by 8.46 Billion of US Dollars in 1990-99. The regression co-efficient of the Semi log linear model implies that exports increased at the compound growth rate of 10.52 per cent per year. The regression coefficients in both models are significant at the one per cent level. The value of adjusted R^2 is 0.77 in the simple linear model and its 0.79 in the semi log linear model. It means that the Exports on Singapore has registered a linear trend in this period and around 79 per cent of variations in the dependent variable are explained by the independent variable in the simple linear model.

The Exports on Singapore increase annually by 24.12 Billion of US Dollars in 2000-10. The regression coefficient of the semi log linear model implies that exports increased at the compound growth rate of 11.63 per cent and per year. The regression coefficients in both models are significant at the one per cent level. The value of adjusted R^2 is 0.88 in the both models. It means that the exports on Singapore have registered a consisted linear trend in this period and 92 per cent of variations in the dependent variable are explained by the independent variable.

Comparing the four periods, 1970-79, 1980-89, 1990-99 and 2000-08 the exports on Singapore increased annually by the highest amount of 24.12 Billions of US Dollars in the fourth period. The highest compound growth rate of 27.76 per cent was recorded only first period.

3.6.3. IMPORTS

The results of the trend analysis given in Table 5 imply that the Imports into Singapore increased annually by 1.55 Billion of Us Dollars in 1970-79. The regression coefficient of the Semi log linear model implies that the Imports increased at the compound growth rate of 24.23 per cent per year. The regression coefficients in the both models are significant at the one per cent level. The value of adjusted R^2 is 0.92 in the simple linear model and it is 0.95 in the semi log linear model. It means that the Imports into Singapore has registered a consistent linear trend in this period around 93 per cent of variations in the dependent variable are explained by the independent variable.

The Imports into Singapore increased annually by 2.16 Billion of US Dollars in 1980-89. The regression co-efficient of the semi log linear model implies that Imports increased at the compound growth rate of 6.29 per cent per year. The regression co-efficient in both models are significant at one per cent level. The value of adjusted R^2 is 0.54 in the simple linear model and it is 0.56 in the semi log linear model. It means that the Imports into Singapore has registered a linear trend in this period and around 59 per cent of variations in the dependent variable are explained by the independent variable in the simple linear model.

The Imports into Singapore increased annually by 7.18 Billion of US Dollars in 1990-99. The regression co-efficient of the Semi log linear model implies that Imports increased at the compound growth rate of 8.33 per cent per year. The regression coefficients in both models are significant at the one per cent level. The value of adjusted R^2 is 0.62 in the simple linear model and its 0.67 in the semi log linear model. It means that the Imports into Singapore has registered a linear trend in this period and around 66 per cent of variations in the dependent variable are explained by the independent variable in the simple linear model.

The Imports into Singapore increased annually by 21.18 Billion of US Dollars in 2000-10. The regression coefficient of the semi log linear model implies that Imports increased at the compound growth rate of 11.63 per cent and per year. The regression coefficients in both models are significant at the one per cent level. The value of adjusted R^2 is 0.85 in the simple linear model and its 0.86 in the semi log linear model. It means that the Imports on Singapore have registered a consisted linear trend in this period and 87 per cent of variations in the dependent variable are explained by the independent variable.

Comparing the four periods, 1970-79, 1980-89, 1990-99 and 2000-10 the Imports into Singapore increased annually by the highest amount of 21.18 Billions of US Dollars in the fourth period. The highest compound growth rate of 11.63 per cent was recorded only fourth period.

3.6.4. REGRESSION ANALYSIS

To analysis the relationship between FDI and GDP, exports and GDP, and Imports and GDP given in Table 6, simple linear regression model is used by taking the FDI, exports and Imports as the independent variables and GDP as the dependent variable for the four sub periods separately. FDI, Exports, Imports, and GDP are measured in Millions of US Dollars. The regression coefficient in this case will measure the increase in GDP in Millions of US Dollars if the FDI, exports and Imports is increased by one Million of US Dollars. The regression coefficient is also tested for the null hypothesis that its value is Zero. The coefficient of determinations R^2 will measure the ability of the independent variable, FDI exports and imports to explain the variations in GDP.

In the initial stages, FDI, Exports and Imports can promote the GDP by a larger amount and as the FDI, Exports and Imports increase continuously, the impact of FDI on GDP, Exports on GDP and Imports on GDP may decline in absolute terms. The estimated regression coefficient its standard error, coefficient of determination and other important results for the four sub-periods for Singapore is given in table 6.

3.6.5. FDI ON GDP

For Singapore in the first period the regression coefficient is 9.41 and this co-efficient is statistically significant at the five per cent level. The value of adjusted R^2 is 0.61 and hence FDI could explain only 61 per cent of variation in GDP for Singapore in the first period. Further FDI could influence the GDP significantly in the first period. However, in the second period, the regression coefficient is 4.76 and this is significant at five per cent level of significance. FDI is capable of explaining 54 per cent of variations in GDP. Hence GDP increases by 4.76 Millions of US Dollars, if FDI is increased by one Million of US Dollars in the second period in Singapore and FDI influences the GDP significantly in the second period in Singapore. In the third period, the regression coefficient is 3.64 and this is significance at five per cent level. FDI now is capable of explaining 54 per cent of variations in GDP. Hence GDP increases by 3.64 Millions of US Dollars, if FDI is increased by one Million of US Dollars in the third period in Singapore and FDI influences the GDP significantly in the third period in Singapore. However in the fourth period the regression coefficient is 2.33 and this coefficient is insignificant. FDI is now capable of explaining 22 per cent of variations in GDP. Hence GDP increases by 2.33 Millions of US Dollars in Singapore, if FDI is increased by one Million of US Dollars in the fourth period.

3.6.6. EXPORTS ON GDP

In the case of Singapore, the regression coefficient in the first period is 0.59 and this is significant at one per cent level. Hence GDP increases by 0.59 Millions of US Dollars, if the Exports are increased by one Millions of US Dollars. FDI is capable of explaining 96 per cent of variations in GDP in the first period in Singapore. In the second period, the regression coefficient is increased to 0.62 and this is also significant at one per cent level. Hence in the second period, GDP increases by 0.62 Millions of US Dollars only, if the FDI is increased by one Million of US Dollars. The explanatory power of exports has come down to 92 per cent, the regression coefficient for the third period 0.73 and for the fourth period, it is 0.53. In these periods, the regression co-efficient is statistically significant at the one per cent level. The explanatory power of exports is to 98 per cent and 93 per cent, respectively. Thus, the influence of Exports on GDP is significant in four the periods.

3.6.7. IMPORTS ON GDP

In Singapore, the regression coefficient in the first period is 0.5 and this is significant at one percent level. An import is capable of explaining 98 per cent of variations in GDP. However, in the second period the regression coefficient is 0.61 and this coefficient is significant at one per cent level of significance. An import is now capable of explaining 87 per cent of variations in GDP. However, in the third period the regression coefficient is 0.78 and this is significant at one per cent level. Import is capable of explaining 96 percent of variation in GDP. However, in the fourth period the regression coefficient is 0.59 and this is significant at one per cent level. Imports are capable of explaining 93 per cent of variations in GDP. Thus the influence of Imports on GDP is highly significant in the first and third period and Import is capable of explaining the variation in GDP to a higher extent.

3.7. DATA AND SPECIFICATION OF THE MODEL

This study uses times series data on Singapore to examine the causal relationship between FDI, Exports, Imports and Economic growth. All data are expressed in logarithms in order to include the proliferative effect of time series and are symbolized with the letter: preceding each variable name. If these variable shares a common stochastic tend and their first difference are stationary, then they can be cointegrated. The use of 1st differences in econometric studies facilities the result interpretation, since the first differences of logarithms of initial variables represent the rate of change of these variables.¹

¹ Dritsakis, N. 2003 Hungarian Macroeconomic variables reflection on causal relationships Acta Oeconomica, 53; 61-76

The Augmented (ADF) unit root test is used for the estimated of individual time series with intention to provide evidence about when the variables are integrated. This is followed by multivariate co integration analyses.²

The data for the study is collected from UNCTAD. The data covers a period of 1970-2010. All the variables are expressed in logs. We believe that the 41 observations are sufficient time series for this study to detect both the short and long-run relationships of the FDI, exports, Imports and GDP Growth. Hakkop and Rush (1991) further state that the co integration test power to detect the long run relationship is enhanced if the sample length is increased rather than by simply increasing the number of observations.

This paper explores the causal relationship between FDI, Exports, Imports and GDP in both the short run and long run. To capture the different stages of growth in Singapore we estimate the causal relationship between foreign direct investment, exports, imports and economic growth. The Granger type test states that if a variable m and 2 Granger causes variable y , the mean square error (MSE) of forecast of y based on the past values of four variables are lower than that of a forecast that uses only past values of y . This Granger test is implemented by running the following regression.

$$\Delta y_t = \alpha_0 + \sum_{i=1}^p \alpha_1 \Delta y_{t-i} + \sum_{i=1}^p \beta_i m_{t-i} + \sum_{i=1}^p \gamma_i \Delta x_{t-i} + \sum_{i=1}^p \lambda_i \Delta z_{t-i} + u_t$$

And testing the joint hypothesis $H_0: \beta_1 = \beta_2 = \dots = \beta_p = 0$ and $\lambda_1 = \lambda_2 = \dots = \lambda_p = 0$

Against $H_1: \beta_1 \neq \beta_2 \neq \dots \neq \beta_p \neq 0$ and $\lambda_1 \neq \lambda_2 \neq \dots \neq \lambda_p \neq 0$

Granger causality from the variable y to the coincident variables X and Z is established if the null hypothesis of the asymptotic Chi-Square (X^2) test is rejected. A significant test statistic indicator that the m , x and z variables have predictive value for forecasting movements in y over and above the information contained in the latter's past.

Granger causality from the variable y to the coincident variables X and Z is established if the null hypothesis of the asymptotic Chi-Square (X^2) test is rejected. A significant test statistic indicator that the m , x and z variables have predictive value for forecasting movements in y over and above the information contained in the latter's past.

3.7.1. UNIT ROOT TEST

Table from 7 to 14, present the unit root test for our time series data. Lag lengths for the ADF tests are determined by the Schwartz information criterion (SIC). This test result suggests that all series contain a single unit root, which would require first differencing to achieve stationary.

The ADF tests are first conducted on the levels of GDP, Exports, Imports and FDI. The results for the levels and differenced are given the table in appendix. The level results shows that the level of LnEx (Natural log of Exports) in Singapore. The ADF statistic value is -2.62 and the associated one-sided p -value is 0.10. Notice here that the statistics t value is greater than the critical values so that we do not reject the null at conventional test sizes.

The results shows that the level of LnFDI in Singapore. The ADF statistic value is -2.13 and the associated one-sided p -value is 0.23. It is notable that the statistic t value is greater than the critical values (up to 10 percent level). Since that we do not reject the null at conventional test sizes.

The results shows that the level of LnGDP in Singapore. The ADF statistic value is -1.71 and the associated one-sided p -value is 0.36. It is notable that the statistics t value is greater than the critical values (up to 10 per cent level). Since that we do not reject the unit at conventional test sizes.

The results shows that the level of LnIm in Singapore. The ADF statistic value is -2.44 and the associated one-sided p -value is 0.14. It is notable that the statistics t value is greater than the critical values (up to 10 per cent level) since that we do not reject the null at conventional test sizes.

The variables appear to have a statistic trend and when these trends are common among the examined variables as well. For the analyses of the multivariate time series that include stochastic trends, the Augmented Dick Fuller (ADF) unit root test is used for the estimation of individual time series with intention to provide evidence about when the variables are integrated. This is followed by multivariate cointegration analysis.

A series is said to be stationary if the mean and variance are time invariant. A non-stationary time series will have a time dependent mean or make sure that the variables are stationary because if they are not the standard assumption for asymptotic analysis in the Granger test will not be valid. (Nandita Dasgupta)

The ADF test is based on the following regression model that consists of running a regression of the first difference of the series against the series lagged once, sum of lagged difference terms and a constant and a time trend.

$$\Delta Y_t = \alpha_0 + \alpha_1 + \alpha_2 Y_{t-1} + \sum_{i=1}^p \beta_i \Delta Y_{t-i} + u_t$$

Where u_t is the pure white noise error term, which adjusts the errors of auto correlation and independently and identically distributed. $Y_{t-1} = Y_{t-1} - Y_{t-2}$, Y_{t-2} Express the first differences with p lags. The coefficient α_0 , α_1 and β_1 are being estimated.

The ADF regression test for the existence of unit root of Y_t that represent all variable (in the natural logarithmic form) at time t . The test for a unit root is conducted on the coefficient of $Y_t = 1$. In the regression, If the coefficient is significantly different from zero (less than zero) then the hypothesis that y contains a unit root is rejected. The null and alternative hypothesis for the existence of unit root in variable Y_t is $H_0: \beta_2 = 0$ $H_1: \beta_2 < 0$ Rejection of the null hypothesis denotes stationarity in the series.

3.7.2. CO INTEGRATION TESTS

Having found that all the four variables in examination have unit roots that is they are integrated of order one. Our next step is to determine whether or not there exists at least one linear combination of the non-stationary variables that is integrated of order zero (I(0)). Co integration an econometric property of time-series variable is a precondition for the existence of a long run or equilibrium economic relationship between two or more variable having unit roots (is integrated of order one) Two or more random variables are said to be integrated if each of the series are themselves non stationary.

The results from the co integration analysis (see table15) show that when lags interval (in first differences) 1 to 1 are used the null hypothesis of no co integration ($r=0$) between LnEx, LnFDI, LnIm and Ln GDP is rejected at 5 per cent level. This test may be regarded as a long run agrilibrium relationship among the variables. The purpose of the cointegration tests I to determine whether a group of non-stationary series is cointegrated or not.

Co integration test based on the Maximum Likelihood method of Johansen (1979) suggests two tests (the trace test and the maximum eigenvectors test) statistics to determine the cointegration rank.

3.7.3. GRANGER CAUSALITY TEST:

A summary of the long run relationship between GDP, Exports, Imports and FDI is presented in Table 16. The results of the long run effects of the variables on each other are based on the tests conducted on these variables and are reported in Table in the Appendix.

According to Granger causality test done by using annual data from 1970- 2010 in Singapore, foreign direct investment (FDI) is not causal exports. In other words there is causality relationship from FDI inflows to exports. Economic growth (GDP) is not the cause of exports. In other words, there is no causality relationship from economic growth to exports. An import is not causal exports. In other words there is no causality relationship from imports to Exports. Economic Growth (GDP) is not cause of FDI. In other words there is no causality relationship from economic growth to FDI. An import is not cause of FDI. In other words there is not causality relationship from Imports to FDI.

4. CONCLUSION

This study examines the direction of the relationship between economic growth rate, FDI, Exports and Imports by using Granger causality test for Singapore over the period 1970-2010. The time series approach demonstrates the impact of the variables (GDP, Exports, Imports and FDI) not only in the short run but also in

² Melina Dritsaki, Chaido Dritsaki and Antonias Adamopoulos, 2004, "A Causal relationship between Trade, FDI and Economic growth for Greece. 230 to 235

the long run in addition to the direction of causality. The direction of causality and its mechanism can indicate governments to develop effective policy to promote greater exports and FDI inflows in Singapore. The causality relationship is from exports to growth rate and there is no causality relationship from growth rate and there is no causality relationship from growth rates to FDIs.

REFERENCES

1. Adil Khan Miankhel, Shandre Mugan Thangavelu and Kaliappa Kalirajan (2009), "Foreign Direct Investment, Exports, and Economic Growth in Selected Emerging Countries: Multivariate VAR Analysis", CCAS Working Paper No.23.
2. Alguacil, M., Cuadros, A., and Orts, V. (2002) "Foreign direct investment, exports and Domestic Performance in Mexico: a causality analysis", *Economics Letters*, **77**, 371-376.
3. Alia, A.A. and Vcal, M.S. (2003), "Foreign Direct Investment and output growth of Turkey. Casualit Analysis", Paper presented at the European Trade study Group (ETSG) FIFTH ANNUAL CONFERENCE, Madrid, 11-13, September.
4. Argiro Moudatsou, (2009), "FDI and ECONOMIC GROWTH: Granger Causality Tests in Panel Data Model-Comparative results in the case of European Union countries EU (European Union countries) and ASEAN Association of South East Asian Nations", EEFS2008-Conference, June 2009-Warsaw-Poland.
5. Asia Pacific Economic Cooperation (APEC) (1996) "Guide to the investment regimes of member economies", APEC Committee on Trade and Investment, Singapore.
6. Balamounne – Lutz, M.N. (2004), "Does FDI Contributes to economic growth? Knowledge about the effects of FDI improves negotiating positions and reduces risk for firms investing in developing countries", *Business Economics*, **39**(2), pp. 49-56.
7. Basu, P., C. Chakraborty, and D. Reagle (2003) "Liberalization, FDI, and Growth in Developing Countries: Panel Cointegration Approach," *Economic Inquiry*, **41**, pp. 510-516.
8. Chakraborty, C. & Basu, P. (2002) "Foreign Direct Investment and Growth in India: a cointegration approach", *Applied Economics*, **34**:1061-1073.
9. Chowdhury A.G Mavrotas, (2009), "FDI and Growth; A Causal Relationship", WIDER Research Paper The World Economy, **29**(1); 0-19.
10. Duasa. J. (2007), "Malaysian Foreign Direct Investment and Growth: Does stability Matter?", *Journal of Economic co-operation*. **28**(2): 83-98.
11. Enders, W. (1995) *Applied Econometric Time Series*, Jonh Wiles and Sons, Canada.
12. Ericsson, J. and M. Irandoust (2000) "On the causality between foreign direct investment and output: A comparative study," *International Trade Journal*, **15**, pp. 1-26.
13. G. Georgantopoulous Anastasios. D. Tsamis (2011), "The Triangular Causal links between Economic Development FDI and Exports; Evidence from Turkey", *Middle Eastern Finance and Economics*, ISSN: 1450-2889, Issue 15(2011).
14. Hang T. Nguyen, (2011), "Exports, Imports, FDI and Economic Growth", *Discussion Papers In Economics*, Working Paper No. 11-03.
15. Hansen, H., and Rand, J. (2006) "On the Causal Links Between FDI and Growth in Developing Countries," *The World Economy*, Vol.29, No.1, p.21-42.
16. Hsiao Frank S.T and Mei – chu W. Hsiao (2004), "The Chaotic Attractor of Economic Direct Investment – why China? A Panel Data Analysis", *Journal of Asian Economics*, **15**:641 – 670.
17. Hsiao, C. and Shen, Y. (2003) "Foreign Direct Investment and Economic Growth: The Importance of Institutions and Urbanization," *Economic Development and Cultural Change*, Vol.51. No.4, p.83-896.
18. Khan, K. and Leng, K. 1997, Foreign direct investment, exports and economic growth, *Singapore Economic Review*, **42** (2), pp. 40-60.
19. Liu, X., Burrige, P., and Sinclair, P.J.N. (2002). Relationships between Economic Growth, Foreign Direct Investment and Trade: Evidence from China. *Applied Economics*, **34**, 1433-1440.
20. Mayang Pramadhani, Rakesh Bissondeal and Nigel Driffield, (2007), "FDI, Trade and Growth, a Causal Link?", ISBN: 9781-85449-700-0.
21. Melina Dritsaki, Chaido Dritsaki and Antonios Adamopoulos, (2004), "A Causal Relationship between Trade, Foreign Direct Investment and Economic Growth for Greece", *American Journal of Applied Sciences* **1** (3) 230-235, ISSN 1546-9239, Asian Network for Scientific Information.
22. Muhammad Shahzad Iqbal and Faiz Muhammad Shaikh (2010), "Causality Relationship between Foreign Direct Investment, Trade and Economic Growth in Pakistan", www.ccsenet.org/ass Asian Social Science Vol. 6, No. 9; September 2010.
23. Nair Reichert, V and of weinhold D(2001), "Causality tests for cross – country Panels; a new look at FDI and economic growth in developing countries", *Oxford Bulletin of Economics and Statistics*, **63**(2), pp. 153-171.
24. Nandita Dasgupta,(2007), "Examining the Long Run Effects of Export, Import and FDI Inflows on the FDI Outflows from India: A Causality Analysis", <http://gdex.dk/ofdi/64%20Dasgupta%20Nandita.pdf>
25. Reza Ahmadi and Mojtaba Ghanbarzadeh, (2011), "FDI, Exports and Economic Growth; Evidence from Mean Region", *Middle East Journal of Scientific Research* **10**(2): 174-182, 2011.
26. UNCTAD (1994) "World Investment Report," United Nations, New York.
27. Wang, M. (2002), "Manufacturing FDI and Economic Growth; Evidence from Asian Economies", *Development of Economics*, University of Oregon mimeo.

APPENDIX

TABLE 1:- FOREIGN DIRECT INVESTMENT INFLOWS INTO SINGAPORE

YEAR	FDI	Index No	A.G.R
1970	93.00	100.00	-
1971	116.00	124.73	24.73
1972	161.07	173.19	38.85
1973	352.82	379.38	119.05
1974	340.19	365.80	-3.58
1975	291.82	313.78	-14.22
1976	230.69	248.05	-20.95
1977	291.47	313.41	26.35
1978	299.91	322.48	2.90
1979	836.03	898.96	178.76
Ave	301.30		88.77
1980	1235.75	100.00	47.81
1981	1659.97	134.33	34.33
1982	1601.85	129.63	-3.50
1983	1133.91	91.76	-29.21
1984	1301.87	105.35	14.81
1985	1046.75	84.71	-19.60
1986	1710.28	138.40	63.39
1987	2836.20	229.51	65.83
1988	3654.99	295.77	28.87
1989	2886.53	233.59	-21.02
Ave	1906.81		14.84
1990	5574.75	100.00	93.13
1991	4887.09	87.66	-12.34
1992	2204.34	39.54	-54.89
1993	4686.31	84.06	112.60
1994	8550.19	153.37	82.45
1995	11535.31	206.92	34.91
1996	9682.14	173.68	-16.07
1997	13752.67	246.70	42.04
1998	7313.87	131.20	-46.82
1999	16577.91	297.38	126.66
Ave	8476.46		21.93
2000	16484.49	100.00	-0.56
2001	15086.73	91.52	-8.48
2002	6401.97	38.84	-57.57
2003	11941.36	72.44	86.53
2004	21026.01	127.55	76.08
2005	15459.63	93.78	-26.47
2006	29347.93	178.03	89.84
2007	37032.98	224.65	26.19
2008	8588.20	52.10	-76.81
2009	15278.62	92.68	77.90
2010	38638.07	234.39	152.89
Ave	18072.86		15.61

Source: UNCTAD Annual Report.

TABLE 2:- EXPORTS OF SINGAPORE

YEAR	Exports	Index No	A.G.R
1970	1553.63	100.00	
1971	1761.13	113.36	13.36
1972	2189.00	140.90	24.30
1973	3652.58	235.10	66.86
1974	5809.58	373.94	59.05
1975	5376.20	346.04	-7.46
1976	6585.45	423.88	22.49
1977	8241.04	530.44	25.14
1978	10134.20	652.29	22.97
1979	14233.20	916.13	40.45
Ave	5953.60		90.68
1980	19375.30	100.00	36.13
1981	20967.30	108.22	8.22
1982	20788.00	107.29	-0.86
1983	21832.60	112.68	5.03
1984	24070.10	124.23	10.25
1985	22812.30	117.74	-5.23
1986	22495.00	116.10	-1.39
1987	28686.10	148.05	27.52
1988	39305.50	202.86	37.02
1989	44661.00	230.50	13.63
Ave	26499.32		14.50
1990	52729.70	100.00	18.07
1991	58966.00	111.83	11.83
1992	63471.60	120.37	7.64
1993	74011.70	140.36	16.61
1994	96825.40	183.63	30.82
1995	118268.00	224.29	22.15
1996	125014.00	237.08	5.70
1997	124985.00	237.03	-0.02
1998	109895.00	208.41	-12.07
1999	114680.00	217.49	4.35
Ave	93884.64		13.05
2000	137804.00	100.00	20.16
2001	121751.00	88.35	-11.65
2002	125177.00	90.84	2.81
2003	159963.35	116.08	27.79
2004	198637.00	144.14	24.18
2005	229649.00	166.65	15.61
2006	271807.00	197.24	18.36
2007	299272.00	217.17	10.10
2008	338176.00	245.40	13.00
2009	269832.00	195.81	-20.21
2010	351867.00	255.34	30.40
Ave	215102.85		18.90

Source: UNCTAD Annual Report.

TABLE 3: IMPORTS OF SINGAPORE

YEAR	Imports	Index No	A.G.R
1970	2461.44	100.00	
1971	2838.31	115.31	15.31
1972	3394.75	137.92	19.60
1973	5126.98	208.29	51.03
1974	8380.04	340.45	63.45
1975	8133.10	330.42	-2.95
1976	9070.64	368.51	11.53
1977	10470.70	425.39	15.44
1978	13060.90	530.62	24.74
1979	17643.40	716.79	35.09
Ave	8058.03		68.53
1980	24007.30	100.00	36.07
1981	27572.00	114.85	14.85
1982	28167.20	117.33	2.16
1983	28157.90	117.29	-0.03
1984	28666.90	119.41	1.81
1985	26285.20	109.49	-8.31
1986	25510.90	106.26	-2.95
1987	32559.00	135.62	27.63
1988	43863.60	182.71	34.72
1989	49655.90	206.84	13.21
Ave	31444.59		11.87
1990	60899.10	100.00	22.64
1991	66292.60	108.86	8.86
1992	72178.90	118.52	8.88
1993	85234.00	139.96	18.09
1994	102670.00	168.59	20.46
1995	124507.00	204.45	21.27
1996	131338.00	215.66	5.49
1997	132437.00	217.47	0.84
1998	104719.00	171.95	-20.93
1999	111060.00	182.37	6.06
Ave	99133.56		9.15
2000	134545.00	100.00	21.15
2001	116000.00	86.22	-13.78
2002	116448.00	86.55	0.39
2003	136264.16	101.28	17.02
2004	173581.21	129.01	27.39
2005	200047.00	148.68	15.25
2006	238710.00	177.42	19.33
2007	263155.00	195.59	10.24
2008	319780.00	237.68	21.52
2009	245785.00	182.68	-23.14
2010	310791.00	230.99	26.45
Ave	192778.31		16.79

Source: UNCTAD Annual Report.

TABLE 4: BOT OF SINGAPORE

YEAR	BOT	Index No	A.G.R
1970	-907.81	100.00	
1971	-1077.18	118.66	18.66
1972	-1205.75	132.82	11.94
1973	-1474.40	162.41	22.28
1974	-2570.46	283.15	74.34
1975	-2756.90	303.69	7.25
1976	-2485.19	273.76	-9.86
1977	-2229.66	245.61	-10.28
1978	-2926.70	322.39	31.26
1979	-3410.20	375.65	16.52
Ave	-2104.43		30.63
1980	-4632.00	100.00	35.83
1981	-6604.70	142.59	42.59
1982	-7379.20	159.31	11.73
1983	-6325.30	136.56	-14.28
1984	-4596.80	99.24	-27.33
1985	-3472.90	74.98	-24.45
1986	-3015.90	65.11	-13.16
1987	-3872.90	83.61	28.42
1988	-4558.10	98.40	17.69
1989	-4994.90	107.83	9.58
Ave	-4945.27		0.87
1990	-8169.40	100.00	63.55
1991	-7326.60	89.68	-10.32
1992	-8707.30	106.58	18.85
1993	-11222.30	137.37	28.88
1994	-5844.60	71.54	-47.92
1995	-6239.00	76.37	6.75
1996	-6324.00	77.41	1.36
1997	-7452.00	91.22	17.84
1998	5176.00	-63.36	-169.46
1999	3620.00	-44.31	-30.06
Ave	-5248.92		-16.03
2000	3259.00	100.00	-9.97
2001	5751.00	176.47	76.47
2002	8729.00	267.84	51.78
2003	23699.19	727.19	171.50
2004	25055.79	768.82	5.72
2005	29602.00	908.32	18.14
2006	33097.00	1015.56	11.81
2007	36117.00	1108.22	9.12
2008	18396.00	564.47	-49.07
2009	24047.00	737.86	30.72
2010	41076.00	1260.39	70.82
Ave	22324.54		61.42

Source: UNCTAD Annual Report.

TABLE 7: RESULTS OF UNIT ROOT TEST FOR LNEXPORTS (LEVELS)

Null Hypothesis: LNExports has a unit root, Exogenous: Constant, Lag Length: 0 (Automatic based on SIC, MAXLAG=9)			
Augmented Dickey-Fuller test statistic		t-Statistic	Probability*
Test critical values:		-2.62	0.10
	1%level	-3.61	
	5%level	-2.94	
	10%level	-2.61	

Mackinnon (1996) one – sided p – values

TABLE 8: RESULTS OF UNIT ROOT TEST FOR LNGDP (LEVELS)

Null Hypothesis: LNGDP has a unit root, Exogenous: Constant, Lag Length: 1 (Automatic based on SIC, MAXLAG=9)			
Augmented Dickey-Fuller test statistic		t-Statistic	Probability*
Test critical values:		-1.71	0.42
	1%level	-3.61	
	5%level	-2.94	
	10%level	-2.61	

Mackinnon (1996) one – sided p – values

TABLE 9: RESULTS OF UNIT ROOT TEST FOR LNFDI (LEVELS)

Null Hypothesis: LNFDI has a unit root, Exogenous: Constant, Lag Length: 5 (Automatic based on SIC, MAXLAG=9)			
Augmented Dickey-Fuller test statistic		t-Statistic	Probability*
Test critical values:		-2.13	0.23
	1%level	-3.61	
	5%level	-2.94	
	10%level	-2.61	

Mackinnon (1996) one – sided p – values

TABLE 10: RESULTS OF UNIT ROOT TEST FOR LNIMPORTS (LEVELS)

Null Hypothesis: LNImports has a unit root, Exogenous: Constant, Lag Length: 0 (Automatic based on SIC, MAXLAG=9)			
Augmented Dickey-Fuller test statistic		t-Statistic	Probability*
Test critical values:	1%level	-2.44	0.13
	5%level	-3.61	
	10%level	-2.94	
		-2.61	

Mackinnon (1996) one – sided p – values

TABLE 11: RESULTS OF UNIT ROOT TEST FOR LNEXPORTS (DIFFERENCES)

Null Hypothesis: LNExports has a unit root, Exogenous: Constant, Lag Length: 0 (Automatic based on SIC, MAXLAG=9)			
Augmented Dickey-Fuller test statistic		t-Statistic	Probability*
Test critical values:	1%level	-4.65	0.00
	5%level	-3.61	
	10%level	-2.94	
		-2.61	

Mackinnon (1996) one – sided p – values

TABLE 12: RESULTS OF UNIT ROOT TEST FOR LNGDP (DIFFERENCES)

Null Hypothesis: LNGDP has a unit root, Exogenous: Constant, Lag Length: 0 (Automatic based on SIC, MAXLAG=9)			
Augmented Dickey-Fuller test statistic		t-Statistic	Probability*
Test critical values:	1%level	-3.49	0.01
	5%level	-3.61	
	10%level	-2.94	
		-2.61	

Mackinnon (1996) one – sided p – values

TABLE 13: RESULTS OF UNIT ROOT TEST FOR LNFDI (DIFFERENCES)

Null Hypothesis: LNFDI has a unit root, Exogenous: Constant, Lag Length: 0 (Automatic based on SIC, MAXLAG=9)			
Augmented Dickey-Fuller test statistic		t-Statistic	Probability*
Test critical values:	1%level	-6.29	0.00
	5%level	-3.62	
	10%level	-2.94	
		-2.61	

Mackinnon (1996) one – sided p – values

TABLE 14:- RESULTS OF UNIT ROOT TEST FOR LNIMPORTS (DIFFERENCES)

Null Hypothesis: LNImports has a unit root, Exogenous: Constant, Lag Length: 0 (Automatic based on SIC, MAXLAG=9)			
Augmented Dickey-Fuller test statistic		t-Statistic	Probability*
Test critical values:	1%level	-4.75	0.00
	5%level	-3.61	
	10%level	-2.94	
		-2.61	

Mackinnon (1996) one – sided p – values

TABLE 15:- RESULTS OF COINTEGRATING RELATIONSHIPS BETWEEN LNEXPORTS, LNIMPORTS, LNFDI AND LNGDP. UNRESTRICTED COINTEGRATION RANK TEST (TRACE)

Hypothesized rank (r)	Eigen value	Likelihood ratio	5% critical value	Probability
Race statistic for cointegrating rank				
r=0	0.55	60.29	47.85	0.00
r≤1	0.38	29.48	29.80	0.05
r≥2	0.19	11.20	15.49	0.20
r≥3	0.07	2.93	3.84	0.09
Unrestricted Cointegration Rank Test (Maximum Eigen value)				
r=0	0.55	0.81	27.58	0.01
r≤1	0.37	18.28	21.13	0.12
r≥2	0.19	8.26	14.26	0.35
r≥3	0.07	2.93	3.84	0.09

Mac-Eigen value test indicates no cointegration at the 0.05 level

TABLE 16:- PAIR WISE GRANGER CAUSALITY TESTS

Sample:1970-2010 Lags: 2			
Null Hypothesis	Obs	F-statistic	Prob
LNFDI does not Granger Cause LNExports	39	5.52	0.02
LNExports does not Granger cause LNFDI		7.67	0.00
LNGDP does not Granger Cause LNExports	39	4.04	0.03
LNExports does not Granger cause LNGDP		6.14	0.01
LNImports does not Granger cause LNExports	39	4.04	0.03
LNEX does not Granger Cause LNImports		6.14	0.01
LNGDP does not Granger Cause LNFDI	39	8.60	0.00
LNFDI does not Granger Cause LNGDP		3.89	0.03
LNImports does not Granger Cause LNFDI	39	5.82	0.01
LNFDI does not Granger Cause LNImports		4.52	0.02
LNImports does not Granger Cause LNGDP	39	0.56	0.57
LNGDP does not Granger Cause LNImports		3.00	0.06

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