



The Impact of Trade Liberalization and Foreign Direct Investment Flows on Economic Growth: Sudan Experience 1972 – 2010

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Abstract

This study aims to explain the relationship between foreign direct investment and trade liberalization with economic growth of Sudan during the period 1972-2010. The study used an econometric model in order to evaluate the impact of trade liberalization and foreign direct investment on economic growth. The most important results of this study indicated that, foreign direct investment has a weak positive effect on the economic growth, while trade openness has a negative effect on economic growth of Sudan. The most important recommendations of the study include the call for the government to improve the investment environment in order to increase the efficiency of foreign direct investment on economic growth of Sudan. Also, the study recommended that the government must due its consideration the market openness to external markets via the encouragement of Sudanese exports in order to make trade liberalization and economic growth of Sudan positively related.

Key Words: Trade Openness, Foreign Direct Investment, Economic Growth, Sudan.

المستخلص

هدفت الدراسة الى توضيح علاقة الاستثمار الاجنبي المباشر و تحرير التجارة علي النمو الاقتصادي في السودان خلال الفترة ١٩٧٢-٢٠١٠ ، وانتهجت المنهج القياسي في التحليل. وتوصلت الدراسة الى عدة نتائج أهمها أن الاستثمار الاجنبي المباشر له تأثير موجب ولكنه ضعيف علي النمو الاقتصادي وأن تحرير التجارة ذو تأثير سالب علي النمو الاقتصادي في السودان. ومن أهم التوصيات التي خرجت بها الدراسة أنه و لزيادة فاعلية الاستثمار الاجنبي المباشر علي النمو الاقتصادي يجب علي الحكومة أن تعمل علي تحسين بيئة الاستثمار في السودان. ومن التوصيات أيضاً، أنه يجب علي الحكومة أن تعمل علي فتح أسواقها علي العالم الخارجي من خلال تشجيع الصادرات حتى يحقق الانفتاح التجاري أثراً موجباً علي النمو الاقتصادي في السودان.

1.1 Introduction:

Development theories assume that developing countries are trapped by vicious circles of poverty due to low incomes, savings and investments. It has often been argued that the liberalization of trade will allow countries to combat poverty through benefiting from their comparative advantage in production in which they have competitive advantage. The classical theory of Ricardo in which Portugal specializes in wine and Britain in textiles in which the cost advantage is higher if Portugal produces both commodities still holds today.

Solow (1957) identified that trade liberalization can facilitate neutral technical change through technological efficiency by dominating protection for import substitution industries, that is, trade liberalization can promote allocative efficiency by reorienting factors of production in favor of sectors in which the economy possesses a comparative advantage in trade as well as by allowing for a choice of techniques of production which reflects the factor endowments of the economy (Balasubramayan et al . 1996) . Edwards (1993) pointed out that a country with a higher degree of openness can absorb technology developed in advanced nations at a faster rate and thus grow more rapidly



than a country with a lower degree of openness. Alternatively, a number of economists argued that trade liberalization policies can lead to macroeconomic instability characterized by high and variable inflation rate, fiscal and balance of payments deficits as well as terms of trade deterioration, exchange rate depreciation and capital inflows (Roodrik, 1992).

Regarding the relationship between foreign direct investment and economic growth, e.g. endogenous neoclassical growth models, these models indicated that FDI leads to economic growth through increasing the volume of investment and its efficiency (Nair-Reichert and Weinhold, 2001). These models were considered as the basis for most of the empirical studies that tried to investigate the relationship between growth and FDI. These studies incorporated FDI as one of the determinants of economic growth with other determinants of growth such as growth of labor force and technological progress as suggested by the standard growth models. In addition to this, FDI brings capital for productive development to the host country; it also transfers a considerable amount of technical and managerial knowledge and skills. Thus the benefits of FDI to the host economy are more as compared with its direct impact which are recognized as the sources of the economic growth.

Considering these arguments regarding the relationship between foreign direct investment and economic growth, Sudan as one of developing countries had suffered for a long period of accumulated foreign debts and their interest arrears, thus Sudanese government opened the door for the foreign investors in order to reduce these external obligations. Also Sudan took considerable procedures to improve the performance of its economy; one of these is trade liberalization. Through the openness of trade Sudan can achieve a considerable amount of development via its exports and imports. Sudan will find foreign markets to advertise its exports and will gain hard currencies which promote the process of development. On the other hand, imports of Sudan contain various goods such as equipments, machines and transportation means which are very important in the projects of development. This research is an attempt to examine the relationship between FDI, trade liberalization and economic growth in the Sudan during the period 1972-2010.

1.2 The study problem:

This study is an attempt to statistically investigate the impact of FDI and trade liberalization on economic growth since many empirical studies postulated that FDI and openness of trade have a positive impact on both economic growth and economic development. The study seeks to find answers to these questions, the main question is:

- 1-What is the relationship between foreign direct investments, trade liberalization with economic growth in Sudan? , we can obtain these two questions from the main one:
- 2-Has trade liberalization promoted economic growth of the Sudan during the period 1972-2010?
- 3-Has foreign direct investment positively enhanced economic growth of the Sudan during the period 1972-2010?

1.3 Hypothesis of the study:

The study seeks to verify the following hypotheses:

- 1-Trade liberalization had promoted economic growth in Sudan during the period 1972-2010. i.e., trade liberalization had a positive and significant impact on economic growth in Sudan over this period.
- 2- Foreign Direct Investment had a positive and significant impact on economic growth



in Sudan over the period 1972-2010.

1.4 The Importance of the study:

The importance of this study is to determine the relationship of trade liberalization and FDI on economic growth. A precise determination of this relationship might have some benefits such as helping Sudanese authorities to design macroeconomic policies towards foreign direct investment and trade effects on the national economy.

The contribution of this study to the empirical analysis can be explained in several ways: Firstly, the study adds to the empirical work by extending its coverage to recent data, particularly during 1972-2010 period, which is characterized by sustainable inflows of FDI to Sudan as well as extensive reforms, particularly in policies related to trade, industry, fiscal and public sectors and privatization. Secondly, this study considers trade liberalization as one of the sources of the economic growth in Sudan and incorporated trade to GDP ratio in the growth function as a measure of trade liberalization with other variables. Previous attempts in this regard incorporated export growth or export to GDP ratio in the growth equation to show the effect of trade liberalization on economic growth. However, these attempts can mislead the overall implications of trade liberalization as only export growth or export to GDP ratio does not show the extent of trade liberalization. Finally, the study will use relatively new, and not frequently used estimation technique, which is the bounds testing approach to co integration.

1.5 Objectives of the study:

The main purpose of this study is to explore the impact of trade liberalization and foreign direct investment on economic growth in the Sudan during the period (1972-2010). In context, then, the objective of this study is:

To discuss the Sudanese economic growth and to determine the factors that affected it such as trade openness and foreign direct investment and other controlling variables.

1.6 Methodology:

As one of our objective is to employ co-integration modeling to test the impact of trade liberalization and FDI on economic growth. The methodology of the study will be as follows:

- Test if the system is stable, using the unit root test.
- If there are unit root test on the series of variables, apply co-integration tests.
- If co-integration is found, then obtain the (OLS) representation of the system.

1.6.1. Sources of Data:

The study will depend on different sources of secondary data such as Journals, Magazines, Books and reports of Central bank, Ministry of National economic and Finance, Ministry of investment and other official reports (World Bank, UNDP reports, IFS and IMF annual reports).

1.8 Organization of the study:

This study includes four parts:

Part one: is an introduction, the study problem, hypothesis of the study, importance, objectives, methodology and sources of data.

Part two: explains the real growth rate of the Sudan, trade liberalization and the flow of foreign direct investment in Sudan.

Part three: evaluates the impact of trade liberalization represented by trade openness and foreign direct investment and other controlling variable on economic growth of Sudan during the period 1972 – 2010 through an econometric analysis.

Part four: concludes main results and recommendations.

2.1 The Real Gross Domestic Product growth Rate of Sudan:

The real gross domestic product (RGDP) growth rates have reflected fluctuations in its gross rate during the period 1970-2010.

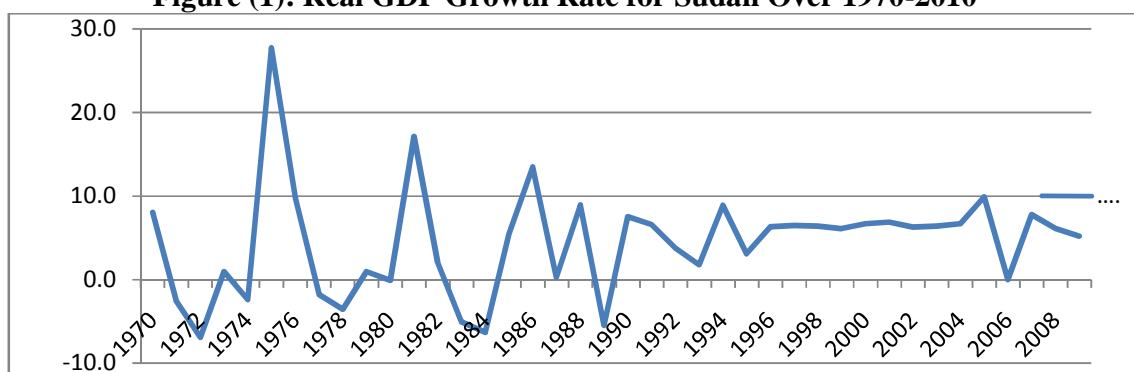
During the 1970s it has shown negative values in most years of the period, but it has achieved a high growth rate in the year 1976 as it amounted (27.7%) and the average growth rate during this period was (3.3%).

During the 1980s the RGDP growth rate was characterized by fluctuations and availability of negative values during some years e.g. the years 1984 and 1985. This can be related to the deterioration which the agriculture sector had witnessed during these years as a result of the wave of drought and desertification which hit the country (Alsayed, 2002), while RGDP growth rates had been witnessed in other year with positive values. For example, in the year 1982 the RGDP growth rate amounted to 17% - thereby resulting in the highest RGDP growth rate during this period. The average growth rate for this period was (3.7%).

But in 1990s period the RGDP growth rates were positive throughout the period except in the year 1990 when it has negative as it had reached (- 5.5%). This period had been characterized by a somewhat stability in the RGDP growth rates. This had been attributed to the increase of the investments in Sudan and consequently to the increase in its contribution to the GDP and also it can be referred to the reforms that had been taken by the government. In the year 1995 the RGDP growth rate amounted to (8.9%) – the highest RGDP growth rate during that period. The growth rate for this period had reached (4.5%) showing its improvement in comparison with the previous periods mentioned before.

In the period (2000-2010), the RGDP growth rate was positive and therefore, we can say that this period had experienced the increase from petroleum returns and investment in the RGDP where the average growth rate has grown to (7.1%) showing that it had been better than in the previous years. The following diagram shows the general trend in the RGDP growth rates during the period 1970 - 2010.

Figure (1): Real GDP Growth Rate for Sudan Over 1970-2010



Source: Done by the researchers depending on Real GDP data by million Sudanese pounds.

2.2 Trade Liberalization policy in Sudan:

Stabilization and adjustment programs supported by IMF in 1978 had been adopted by Sudan to improve its macroeconomic imbalances. The adopted economic programs



during 1980s included the Economic Recovery Program (1978-1985), and the Four-Year Economic Salvation program (1986-1989). Since the economy remain weak, the Three National Economic Salvation (1989-1992) and the Comprehensive National Strategy Program (1992-2002) were introduced in the 1990s to declare full liberalization of the economy transferring it from a centrally planned into a market oriented economy. The new policy reforms included liberalization of trade, more flexible exchange rate, removal of subsidies, restructuring of taxes and privatization (Ministry of Finance and Economic Planning, 1990). Sudan's trade regime has opened up considerably since the reform of the 1990s, when the government reduced tariffs, abolished most export monopolies and eliminated exchange rate controls. Furthermore, liberalization is expected since the country has been in accession negotiations with the World Trade Organization (WTO) following its application for membership in October 1994 (World Trade Indicators, 2009).

2.3 Foreign Direct Investment in the Sudan during the period 1970-2010:

Like many developing countries, Sudan experiences a lack in capital stock needed to achieve the economic and social development. To overcome this deficits, and before 1990s, Sudan used to depend on loans and aids provided by industrial countries, Non Governmental Organizations (NGOs), International Monetary Fund (IMF) and other voluntary organizations.

Since 1950s Sudan recognized the fundamental role of domestic and foreign investment in leading growth and development. Accordingly, many programs were designed from 1956 up to date for attracting investment. The following table shows the FDI in Sudan, the rate of the FDI growth and its contribution in gross domestic product during the period of the study.

Table (1) Foreign Direct Investment, FDI growth and FDI contribution in Gross Domestic Product during some selected years (Million current US\$)

Year	FDI (1)	FDI growth%(2)	GDP (3)	FDI/GDP% (4)
1970	1.66	2,100.23	0.08
1975	1.3	-212.07	4,798.29	0.03
1980	8.85	-432.71	7,617.17	0.12
1985	-3.04	-133.48	12,459.35	-0.02
1990	-31.13	-991.98	12,408.65	-0.25
1995	12	-87.90	13,830.46	0.09
2000	392.2	5.77	12,366.14	3.17
2001	574	46.35	13,362.33	4.30
2002	713.18	24.25	14,975.63	4.76
2003	1,349.19	89.18	17,780.30	7.59
2004	1,511.07	12.00	21,684.76	6.97
2005	2,304.64	52.52	27,386.70	8.42
2006	3,534.08	53.35	36,393.19	9.71
2007	2,425.59	-31.37	46,533.23	5.21
2008	2,600.50	7.21	58,032.06	4.48
2009	1,816.18	-30.16	54,633.36	3.32
2010	2,063.73	13.63	62,045.78	3.33

Source: (1) and (3) is obtained from World Bank Data and Central Bank of Sudan



(various issues), (2) and (4) were calculated by the researcher using data of (1) and (3).

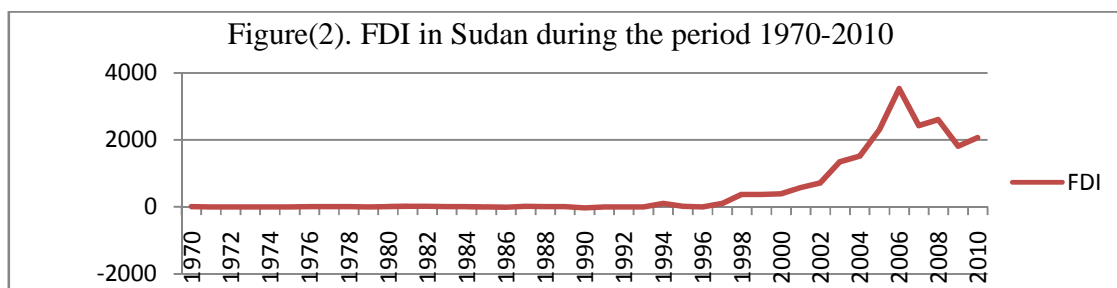
According to the WB (World Bank) and CBoS (Central Bank of Sudan) data, it is found obvious during the period 1970-1979 the average rate of foreign direct investment growth had been negative (-75.0). Its average contribution to the GDP is (0.04) and we can deduce that its contribution rate is very weak which proves the weakness of the flow of FDI to the Sudan. In this period the rate of FDI growth was negative except during the years 1976 and 1977 when it reached 349.2% and 41.6% respectively.

The average rate of FDI growth during the period 1980-1989 was negative too; it had reached (-56.3) while its average contribution to the GDP amounted to 0.07. Hence the situation had not changed a lot than that in the seventies period. The most important reasons behind the inadequate flow of FDI are economic instability that has retarded some investors and the civil war in the southern Sudan.

During the period 1990 up to 1999 the average rate of the FDI growth was negative for the whole period when it amounted to (-3910.1) while its average contribution to the GDP had risen to 82%. When we also consider this we observe that there had been a substantial increase in the flow of foreign direct investment since the year 1997, 1998 and 1999; it amounted to 79.9, 370.7 and 370.8 million dollars with annual growth rates 24375.0%, 275.7%, 0.03% respectively. The end of nineties had witnessed a noticeable increase of FDI flows which could be attributed to the improvement of economic performances of the indicators, the application of the economic liberalization policies and improvement of the investment climate. This period also had witnessed the starting of oil operations investment and this led to increase in FDI.

During the period 2000-2010 the average rate of the FDI growth has turned to positive; it had reached (77.07%) while its average contribution to GDP was (5.6%). we also notice that the flow of foreign direct investment in big amounts when it reached its maximum in the year 2006 where its amount reached to 3534.08 million dollar with a rate of growth (53.3%). The increase of the FDI during this period was due to the growing oil exploitation and the Comprehensive Peace Agreement (CPA) that put end to the civil war between the two parts of Sudan. In addition to this, the ability of the government to establish strong partnerships with China, Malaysia and India and to renew its economic relationships with most of the Arab development funds and governments, convincing them to invest in strategic infrastructure projects such as the Merowe and Roseires Dams and Agricultural, Industrial and Communication projects (Ahmed, 2010).

The below graph shows the flow of foreign direct investment in Sudan during the period 1970-2010. we notice that the period before 1997, there is a weak and stagnant flow of FDI with the exception of the year 1994 in which the FDI has amounted to 99.1 million dollars. The actual increase in the flow has started after the year 1997 and reached its maximum amount in 2006 when it amounted to 3534.08 million dollars. Then it started to fluctuate with minor percentages. In addition to this, the inflow of FDI increased as a result of the encouraging improvement in the investment climate and the stability in the economy.



Source: done by the researchers depending on data of World Bank and data of Sudan Bank.

Ahmed (2010) explained that, the enormous increase in FDI occurred while US economies sanctions were being strengthened and Sudanese debt sustainability was deteriorating. Some Arab governments (Jordan, Egypt, United Arab Emirates (UAE) and Sudia Arabia) invested in agricultural projects to produce wheat, maize, vegetables, fruits and fodder in the River Nile, Sinnar and Blue Nile states. There were many factors behind this influx of Arab investment. First of all, Arab countries suffering from huge food supply deficit, Sudan with its abundant fertile land has always been regarded as the breadbasket of the Arab World. Secondly, there was amounting distrust and risk associated with Arab investment in US and European stock markets, with investors losing sums during crisis. Thirdly, there was a greater realization among Arab investors that investing in the real economy of Sudan and other Arab countries was safer and more rewarding, both materially and strategically, than investing in the US government securities and stocks in the West. In addition to these, Western governments have imposed political pressure on Arab government to undertake serious and unpopular reforms, making the fearful about investing in these markets.

3.1 Econometric Model:

3.1.1 The Economic Growth Function:

A simple endogenous growth model will be used in which FDI and index of openness will consider as additional sources of growth in Sudan economy.

The effect of FDI on economic growth in Sudan can be analyzed in the production function frame work. This frame work is used to control for the specific growth model variables contributing to output growth and also to examine the effects of trade liberalization on economic growth in Sudan. In the standard growth model, FDI inflows could promote GDP growth, on one hand by providing additional employment in a labor surplus economy and by improving the technological knowledge and human capital from the other hand (Agrawal, 2000). This model contains controlling variables which can affect the economic growth in the Sudan such as domestic investment, literacy rate and the dummy variable for petroleum exports.

Specifying domestic and foreign owned capital stock separately in the Cobb-Douglas production function, the empirical investigation will be based on the following equation:

$$Y_t = AFDI^\alpha OP^\beta DI^\gamma LR^\mu DU^\phi \quad (1)$$

Where:

Y_t =is the flow of output, real Gross Domestic Product

FDI represented foreign direct investment.



OP Is the trade openness (Export + Import) of goods/ GDP.

DI is the domestic investment.

LR is the adult literacy rate.

DU is the petroleum exports as a dummy variable.

A is the total factor productivity (TFP) explaining the output growth that is not accounted for by the growth in factors of production specified.

Taking logarithmic transformation and differentiating both sides of equation (1) with respect to the time we obtain:

$$\log Y_t = \text{Log} (A \text{FDI}^\alpha \text{OP}^\beta \text{DI}^\gamma \text{LR}^\mu \text{DU}^\phi) \quad (2)$$

$$\log Y_t = \text{Log}A + \alpha \text{LogFDI} + \beta \text{LogOP} + \gamma \text{LogDI} + \mu \text{LogLR} + \phi \text{LogDU} \quad (3)$$

$$\text{Log}Y_t = \text{Log}A + \alpha \text{LogFDI} + \beta \text{LogOP} + \gamma \text{LogDI} + \mu \text{LogLR} + \phi \text{LogDU} + U_t \quad (4)$$

Where:

U_t is the stochastic error.

According to the economic theory, the relationship between foreign direct investment and economic growth is expected to be positive because the FDI has several positive effects on the host countries economies which include productivity gains, technology transfers and the introduction of new managerial skills and know how into the domestic economy. In addition to these positive effects, FDI brings in capital and creating jobs which are important in the development process.

Also, the relationship between trade openness and economic growth is expected to be positive. This relationship can be interpreted by the fact that an open trade regime expands trade and investment options and this allows countries to specialize in and then exports those products in which they have comparative advantage. As we know that the exports have a great role in economic performance, many empirical studies have argued that exports are the main channel through which the liberalization process can affect the output level and eventually the rate of economic growth. In addition, liberalizing trade can improve the productivity of the countries and make availability of goods in them. on the side of imports, the other component of the trade openness, they create a situation of competition pressure on the domestic industry, consequently domestic firms have to improve productivity to survive but those which cannot face increases competition are forced to exit from the industry. Also trade liberalization enables firms to use high quality parts, components, and machinery at lower prices resulting in improved productivity.

The relationship between domestic investment and economic growth is expected to be positive; as domestic investment is claimed to be the most important source of growth and also effective instrument in creating jobs for an economy. Firebagh (1992) adds that domestic investment is more likely to build relationship within the domestic industries. A part from that, domestic investment plays a dual role in the economy as part of aggregate demand and enlarges a nation stock of productive assets. Thus it is believed that domestic investment is an important factor in accounting for business cycles and the policy makers would now consider domestic investment when reforming their polices on investment sources (lean et al., 2011).

The relationship between literacy rate and economic growth is expected to be positive; the higher the rates of literacy, the higher the growth of economy and vice versa.

Finally, the effect of petrol exports on economic growth is expected to be positive, given that the revenues of petroleum exports promote the different economic activities and then the economic growth.



3.2. Econometric Method

The study begins with employing the Augmented Dickey Fuller (ADF) unit root tests to check the stationary properties of each variable in order to avoid any spurious regression (Dickey and Fuller, 1981). Then the long run equilibrium relationship between the variables of the study is tested by Johannes's multivariate cointegration procedure (Johansen, 1988; Johansen and Juselius, 1990).

3.2.1 Results of the Unit Root Test (Stationary):

All the data that take logarithmic form had been subjected to the unit root test (stationary) by using Augmented Dickey Fuller (ADF) on the basis of level and the first difference by applying EViews (5) programme. The results of this test have been presented in table (2):

Table (2): Results of Unit Root Test for All the Logarithmic Data by Using Augmented Dickey Fuller.

Variables	ADF(without trend)			ADF (with trend)		
	Level 1(0)	First difference 1(1)	Second difference 1(2)	Level 1(0)	First difference 1(1)	Second difference 1(2)
LN _Y	1.454 866	2.590685	3.992925*,** ,***	2.31278 7	2.272656	4.164**, ***
LNFDI	0.311 982	7.144522*,* ,***	-	2.80570 0	7.038581*,** ,***	-
LNOP	2.337 246	6.545522*,* ,***	-	2.57588 59	5.907475*,** ,***	-
LNDI	0.962 516	5.946568*,* ,***	-	0.99226 9	6.611424*,** ,***	-
LNLR	0.099 889	5.563874*,* *	-	4.42721 0**	-	-

*, **, *** indicates the stationary of variables at significance level of 1%, 5%, 10% consequently.

Source: from the tables of eviews (5) programme.

According to the above table, we notice that the parameters of different time series according to the level have a unit root; this means that we cannot reject the null hypothesis that states the time series has a unit root a fact that means it is nonstationary on the level.

According to this test which includes the intercept at one lagging point and without trend, the time series are nonstationary at significant level 5%. After taking the first difference of time series, all the series are stationary at significant level 5% except the real growth domestic product of the Sudan (Y) which is stationary at the second difference at significant level 5%.

When the test had been applied with intercept and trend, the same results were obtained with the time series being stationary at first difference except the real gross domestic product of the Sudan (Y) which is stationary at the second difference and literacy rate (LR) which is stationary at the level at significant level 5%.



It is obvious from the above table that the null hypothesis will not be rejected which states that the study variables have unit root at the level whereas this hypothesis can be rejected for the first difference of the variables. After recognizing that the study variables are stationary, the cointegration test can be applied. According to the literature of the cointegration, the study applied the Johansen and Juselius method (1990) for testing cointegration. The Johansen and Juselius method (J-J) examines the number of the relationships of cointegration in the system of (VAR) and this method involving the number of lags for elimination of auto regression.

3.2.2 Johansen and Juselius Test for Cointegration:

Regarding to the economic growth function, it was clear from the tests of trace and maximum eigen value that the rejection of the null hypothesis (that states the absence of cointegration between variables). It is obvious that the trace test indicates one cointegration eigen at 5% level whereas the calculated value of trace statistics which is 88.5 is greater than the critical value that amount to (69.8). As for the consequent values the critical values had been greater than the calculated values. Therefore, the trace test indicates the absence of the rejection of the null hypothesis that states the existence of only one deviation at the maximum for contigration.

As for the maximum eigenvalue test it was clear that there was one contigration egn between the variables where the calculated value for the test amounts to 48.9 which is greater than the critical value that amounts to (33.9). Hence we can say that there is an equilibrium long run relationship between economic growth and each of foreign direct investment (FDI), trade openness (OP), domestic investment (DI) and literacy rate (LR).

3.2.3 Results of the Economic Growth Function Analysis:

After the estimation of the economic growth function no (4) using Ordinary Least Square (OLS) method, we have found that there is an auto regression problem. Then it has been solved by Cockrane-Orcutt method and has the following results:

$$LNY = 10.12 + 0.028 LNFDI - 0.30 LNOP + 0.07 LNDI - 0.29 LNL R + 0.18 DU$$

$$T = (5.147) \quad (1.689) \quad (-30368) \quad (2.558) \quad (-0.5161) \quad (1.500)$$

$$P = (0.000) \quad (0.1001) \quad (0.002) \quad (0.015) \quad (0.609) \quad (0.143)$$

$$R^2 = 0.93 \quad R^2\lambda = 0.91 \quad DW = 1.41 \quad F = 68.2 \quad P(F) = (0.000)$$

The results have shown that the parameters of the model have a statistical significance at level 5% with the exception of the parameters of both literacy rate and dummy variable the petroleum exportation.

As for the value of $R^2 = 0.93$ shows that 93% of the affecting variables on the economic growth are from among the variables included in the model, and the rest of 7% are found in the random variable. The value of the F test = 68.2 - a fact shows that the model is statistically homogenous.

It has been clear from the regression results that the Sudanese economic growth function is characterized by the diminishing effect of foreign direct investment on the economic growth, where the elasticity of FDI is less than one (< 1). Hence an increase in FDI with 1% leads to an increase in the economic growth at a rate of 0.028 %.

It has been noticed that the contribution of the FDI on the economic growth is weak. This result can be attributed to the fact that most of the FDI are on the services sector such as hotels, restaurants, tourism centers and on small industries such as food and refreshments



which are unproductive sectors that will not lead to substantial improvements in the economic performance and consequently has not lead to distinguishable improvement in the economic growth of the Sudan during the study period.

In the Sudan, the services sector has surpassed the other sectors with regard to attraction of foreign investors. The same can be said about the industrial sector although most of the FDI are for small industries. The agricultural sector has been largely overlooked as to the foreign direct investment channeled to it. Added to these reasons, the period from 1972 until the nineties the flow of the FDI is very weak due to instability of the political situations such as the war in the Southern Sudan.

As for the trade openness variable, it has a negative effect on the economic growth. It has been clear from the model estimation results that when trade openness rate increase with 1%, this leads to a decrease in the economic growth with a rate of (0.30%). This can be referred to the fact that Sudan imports surpass the exports during most of the study period when the trade balance suffered from permanent deficit; namely during the period 1972 to 2010 with the exception of some years in the 3rd phase that witnessed petroleum exportation. This is in addition to the fact that most of Sudan exports are agricultural products. These agricultural exports faced problems in production such as desertification and drought that taken place in eighties, decrease of world prices for some important agricultural exports, insufficiency of government subsidence, customs put on exports and imports and other production problems. These problems had affected the return of exports which had been reflected on the economic growth rates.

As for the domestic investment, it has a positive effect on the economic growth. The findings show that a 1% increase in the domestic investment leads to an increase of 0.07% in the economic growth rate. The weakness of the contribution of the domestic investment in the economic growth can be attributed to a number of reasons among which the fact that the domestic investment are mostly confined to small industries such as food products and refreshments. In addition to this, the domestic investment in the agricultural sector has not contributed largely to an increase in the economic growth rates. The domestic investment in agriculture has been confined to the mechanical agriculture which suffered from the imposed restrictions on its expansion mainly due to the breaking out of war and conflicts in many areas with development projects such as the Blue Nile, North Kordfan and Eastern Sudan.

For the literacy rate variable, the analysis has shown that it is insignificant. This result can be justified by the fact that, according to the statistics of United Nations Development Programme (UNDP) the illiteracy rate in the Sudan is about 50% and this is a great percentage which can affect on the economic growth of the Sudan. In addition to this, the belief that the Sudan is considered as a source of labor exportation for the neighboring countries especially the Arab oil producing countries where there has been huge immigration among educated and trained labor forces. This emigrated labor forces could have been playing a great role in the production processes, thereby leading to betterment in the economic progress. This fact has diminished the role of education on the economic growth. Another justification of the result that study has shown is that, despite of the expansion in higher education, the Sudan has witnessed, most of graduates have remained unemployed and the country loses their role in the economic development. Also, it may be due to mismatch of skills, i.e. education does not match labor market demand.

As for the petroleum exportation variable, it was found to be insignificant. This can be attributed to the fact that the petroleum revenues had not been injected in the budget until after 2007. Generally speaking, this can not ignore the important role of petroleum revenues in the countries development. In addition, the period of petroleum exportation had been in the final of quarter of the 1999. If we take into consideration the end of the study period was 2010, it would be found that the period was not enough for giving a convincing judgment on the effect of petroleum exports on economic growth. This is despite the improvement of trade balance occurred due to injection of petroleum revenues reflecting a tangible decrease in the balance of payment deficit.

Also the insignificant result of petroleum exportation can be justified by the fact that these revenues had been divided between the Sudanese government, foreign companies and the Southern Sudan government as it has been stated in the Comprehensive Peace Agreement (CPA).

4.1 The Study Results:

The results of the study include the following:

- The foreign direct investment has a weak positive effect on the economic growth; an increase in the FDI by 1% leads to an increase in the economic growth at a rate of 0.028%. So the FDI has a significant positive impact on economic growth in Sudan during the period (1972-2010) _ a fact that supports the first hypothesis of the study.
- The sign of the trade openness elasticity disagrees with the economic theory. It has been clear that an increase in the trade openness by 1% would lead to a decrease in economic growth by 0.30%. This means that the trade openness has not led to an improvement in the economic growth in the Sudan. So, the trade liberalization has a significant negative impact in economic growth in Sudan during the period 1972-2010 _ a fact that does not support the second hypothesis of the study.
- The domestic investment has a positive minimal effect on the economic growth. Hence an increase in the domestic investment by 1% leads to an increase in the economic growth at a rate of (0.07%).
- The study has shown that the literacy rate in Sudan is insignificant, a fact that means it can not be considered as an important determinant of economic growth.
- The study has shown that the petroleum exports variable is insignificant since the petroleum export revenues had not been injected in the budget until after the year 2007. This period is not enough to reflect the impact of these revenues on the economic growth.

4.2 Recommendations:

- Since the study has shown that the elasticity of foreign direct investment is positive with minor effect on the economic growth in the Sudan, the study has recommended the following in order to improve the contribution of FDI in economic growth:
 - The government should do its best to maintain security and political stability all over the Sudan in order to attract more and more foreign investments.



- The government should adopt policies such as stability of exchange rates and inflation rates to sustain economic stability.
 - The government should follow the implementation of the exemption and guarantees given to investors which have already been stated in the investment law, so that more foreign investment can be drawn.
 - Greater efforts should be undertaken in order to improve the poor conditions of the country's infrastructure especially the construction and paving highways, as well as eradicating the problem of high tariffs for electricity.
 - Emphasis on the role of the Sudan embassies abroad to activate propaganda for the FDI in Sudan through the availability of supplementary data base for foreign investors that enable them to know the different investment areas in the Sudan.
- Since the study has shown that trade liberalization referred to as trade openness has a negative effect on the economic growth, hence the study advocates the recommendations concerning exports and imports:
- The state should give its utmost power to attain practical participation for exportation through collection of the necessary data for the external demands of foreign markets and the provision of feasibility studies for the exportation of different goods.
 - Due attention for provision of marketing processes for exports and the availability of infrastructure for exports.
 - Avoidance of imposition of further taxes, especially the main export goods because this might reduce its competitive advantage so that the trade partner should not seek other alternatives.
 - Rehabilitation of the infrastructures and initiation of the construction especially paved roads.
 - Support and encouragement for agricultural researches and expansion in the farms producing improved seeds.
 - Development and improvement of the animal resources giving priority in financing to agricultural and animal husbandry production from the specialized banks.
 - Political and economic openness and collaboration with the world and the emancipation from the continues sanctions so that the Sudan may be an attractive and stabilized country.
- Encouragement of the domestic investors to invest in the productive sectors and attract investment through the availability of finance privileges and guarantees to activate the role of banking sector in the economic growth process.
- Creation of more employment opportunities to meet unemployment among secondary and university graduates and their involvement in the production process and thereby in the economic growth of the Sudan.
- Efforts can be directed to the increase in the present petroleum production with due concentration on the prospective petroleum areas and directing its revenues for the rehabilitation of the agricultural sector as petroleum is an undeniable resource and Sudan is an agricultural country.



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