THE IMPACT OF TRADE LIBERALIZATION AND FOREIGN DIRECT INVESTMENT FLOWS ON ECONOMIC GROWTH:
SUDAN EXPERIENCE 1972-2010

تحريج التجارة وتدفقات الاستثمار الأجنبي المباشر وتأثيرهما على النمو الاقتصادي: تجربة السودان 1972 – 2010

A Thesis Submitted for the Degree of Doctor of philosophy in Economics

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April 2014
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DEDICATION

To My Parents

Brothers and Sisters

For their Support
ACKNOWLEDGEMENTS

With due respect and honor, I would like to record my sincere gratitude to my supervisor, Dr. Khalid Hassan Elbeely, for his supervision and inspiration through the whole paths of my dissertation.

Also I would like to thank all people who have helped and inspired me during my doctoral study. Especially it is a pleasure to convey my gratitude to my colleagues and friends in Faculty of Economic and Business Administration, University of Bhakt El-Ruda who gave me encouragement, support and aspiration. In addition, I would like to thank Mr. Hag Musa Koko for the many thought-provoking conversations, which always helped me put things into perspective. He was always generous with his time and advice. Also, I would like to thank Professor Kalafallah Arabi for helping me in collecting data related to my thesis.

Many individuals, Institutions, have contributed to this study by way of financial support, guidance, encouragement. I would like to thank:

• Ministry of Higher Education and Research Science for sponsoring the research.
• Central Bauru of Statistics, Central Bank of Sudan, Ministry of Investment for data provision for this study.
• A word of appreciation and gratitude must be said to all those who helped me when pursuing this research.

Last but not least, I would like to thank my family for their supporting and believing in me. Their confidence in my ability and their dedication to my goals inspires me to reach higher. Simply this dissertation would not have been possible without them.
المستخلص

يعتبر النمو الاقتصادي من الموضوعات المهمة لأي دولة من دول العالم لأنها تحقق من خلاله عملية التنمية الاقتصادية، لذلك نجد أن جميع دول العالم تسعى لزيادة معدلات نموها الاقتصادي من خلال عدة طرق منها تحرير التجارة وتجذب الاستثمارات الأجنبية. فالتفاوض القوي بين دول العالم المختلفة في الوقت الراهن على تحرير تجارتها وتجذب الاستثمار الأجنبي المباشر نحوها كان من العوامل التي دفعتنا إلى التعرف على وضع تحرير التجارة والاستثمار الأجنبي المباشر في السودان ودراسة أثرهما على النمو الاقتصادي.

الهدف الأساسي لهذه الدراسة هو تحديد أثر تحرير التجارة والاستثمار الأجنبي المباشر على النمو الاقتصادي في السودان خلال الفترة من 1972-2010. وقد تم استخدام النماذج الاقتصادية كمؤشر لتحرير التجارة في السودان، كما تم إجراء دراسة تدفق الاستثمارات الأجنبية المباشرة للسودان خلال فترة الدراسة. كما استخدمت الدراسة بعض المتغيرات الأخرى والتي تؤثر على النمو الاقتصادي في السودان مثل الاستثمار المحلي، وملاءمة البيئة وتصدير البترول السوداني كمثيير وهمي. وقد استخدمت الدراسة في التحليل منهج الإسلوب الكمي ليتباين منهج التحليل المشترك، وطريقة المربعات الصغرى، والطريقة العادية في تقدير القيمة.

وتوصلت الدراسة إلى عدة نتائج أهمها أن الاستثمار الأجنبي المباشر له تأثير موجب ولكنه ضعيف على النمو الاقتصادي. وقد قسمت الدراسة هذه النتيجة على أن أعطى الاستثمارات الأجنبية المباشرة في السودان موقعة إلى قطاعات غير متاحة وأهمها قطاع الخدمات خلال فترة الدراسة. وأوضحت النتائج أيضاً أن تحرير التجارة له تأثير سلبي على النمو الاقتصادي في السودان. وهذه النتيجة تم تفسيرها بالمشاكل التي تواجهها صادرات السودان، والتي تتكون في غالبيتها من محاصيل زراعية خلال عملية الانتاج وحتى مرحلة التصدير، من ضعف البنية التحتية وتدني الأسعار العالمية وقلة الدعم الحكومي الموجه لهذه الصادرات وغيرها من العوائق الأخرى بالإضافة إلى العجز المزمن الذي يعاني منه الميزان التجاري السوداني في غالبية سنوات الدراسة.

بالنسبة للمتغيرات الأخرى توصلت الدراسة إلى أن الاستثمار المحلي له تأثير موجب على النمو الاقتصادي في السودان وإن كان ضعيفاً. بالنسبة لمعدل الأمية فقد أوضح النتائج أنه غير معنوي وهذه النتيجة تم تفسيرها بأنه السودان دولة مصدرة لمالية وخاصة المتعلقة بدول الجوار وهذا يعتبر تسليماً للعلاقة كان يمكن أن يؤثر دوراً كبيراً في الإنتاج وبالتالي في عملية النمو الاقتصادي بالإضافة إلى الارتفاع معدلات البطالة في السودان. أما متغير صادرات البترول فقد أوضحت نتائج الدراسة أنه غير معنوي ويعود
السبب في ذلك إلى أن عائدات البترول لم تكن بأكملها تعود إلى حكومة السودان وإنما شاركت فيها الشركات الأجنبية التي عملت على استخراج البترول بالإضافة إلى أن هناك جزءاً كبيراً من العائدات كان يذهب إلى حكومة جنوب السودان.

ونظراً لأهمية النمو الاقتصادي وانعكاساته على الرفاه والتنمية الاقتصادية فإن الدراسة توصي الحكومة أن تعمل على تحسين بيئة الاستثمار في السودان من أجل زيادة فاعلية الاستثمار الأجنبي المباشر على النمو الاقتصادي في السودان. ومن التوصيات أيضاً، أنه يجب على الحكومة أن تعمل على فتح أسواقها على العالم الخارجي من خلال تشجيع الصادرات حتى يحقق الانتاج التجاري آثراً موجباً على النمو الاقتصادي.
ABSTRACT

Economic growth is one of the important issues for any country of the world, because countries can achieve through it the process of economic development, thus, all countries seek to increase their rates of economic growth. The increase of economic growth could be happen through different ways, such as trade liberalization and foreign investments. The great competition between the countries of the world to liberalize trade and attracting foreign direct investment is the factor that make the study seeks to identify the situation of trade liberalization and foreign direct investment in the Sudan and study their impact on economic growth.

The main objective of this study is to investigate and assess the impact of trade liberalization and foreign direct investment of the Sudan on the economic growth in Sudan during the period 1972-2010 based on time series data. Also, the study evaluates the impact of other controlling variables on economic growth such as domestic investment, literacy rate and petroleum exports as a dummy variable, using cointegration procedure and ordinary least squares method (OLS).

The study reveals that foreign direct investment has a weak positive impact on economic growth where an increase in FDI by 1% leads to an increase in the economic growth at a rate of 0.028%. This result had been interpreted by that most of foreign direct investment in Sudan during the study period was concentrated in unproductive sectors such as services sector. Also the study finds that there is a negative relationship between trade openness and economic growth of Sudan, since an increase of trade openness by 1% would lead to a decrease in economic growth by 0.30%. This result had been referred to the problems that face Sudanese agricultural exports during the production process until the exportation phase. These problems were the weakness of infrastructure, fluctuations of world prices,
low government subsides and other obstacles. In addition to these problems, the permanent deficit of the Sudanese trade balance during the study period.

Concerning the controlling variables, the study found that the domestic investment has a weak positive impact on economic growth. As for the literacy rate, the results showed that it is insignificant. This result had been expressed by the belief that the Sudan is considered as a source of labor exportation for the neighboring countries where there had been huge immigration among educated labor. This emigrated labor force could have been playing a great role in the production process and then in the economic growth. Also, the results showed that the petroleum exportation is insignificant. The study had attributed this result to the fact that the revenues of petrol exports had been divided between the Sudanese government, foreign companies and the Southern Sudan.

The study main recommendations include the call for the government to improve the investment environment in order to increase the volume and amount of foreign direct investment that flows to Sudan. Also, the study urge the government to continue its policy of market openness towards external markets through the designing of polices that aim at promoting Sudanese exports.
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## CHAPTER ONE

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**CHAPTER THREE**

THE SUDAN ECONOMY: WITH SPECIAL REFERENCE TO TRADE LIBERALIZATION AND FOREIGN DIRECT INVESTMENT

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CHAPTER ONE
INTRODUCTION AND PREVIOUS STUDIES

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 product in which they are competitive against foreign producers. The classical 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. The labor time and resources spent on the production commodities lacks competitive advantage is a net loss. Through liberalization a country could then become more competitive in the international trade.

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 favour 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 (Balasubramanyan 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. However, most of economists argued that trade liberalization policies bring macroeconomic instability characterized by high and variable inflation on one hand, and fiscal and balance of payments crises on the other (Roodrik, 1992).
Terms of trade deterioration, exchange rate depreciation and capital inflows due to trade liberalization are strong arguments, among others, against trade reforms.

Considering the relationship between foreign direct investment and economic growth, in the models of neoclassical growth, FDI leads to economic growth through increasing the volume of investment and its efficiency. In the endogenous growth models, long run growth is a function of technological progress deriving from technology transfer effect through FDI (Nair-Reichert and Weinhold, 2001), in the neoclassical model, capital accumulation is subject to diminishing returns, whereas, there is a possibility of non-diminishing returns to capital through incorporating technology or role of knowledge endogenously in the new growth theories (Romer 1994, and Grossman and Helpman, 1991). These models 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 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 arrears, for that 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 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 trade liberalization, FDI and economic growth in the Sudan during the period 1972-2010.

1.2. The study problem:

Sudan witnessed structural changes through the implementation of economic reforms and through its attempt to join world trade organization (WTO) and then liberalized trade. In addition to this, Sudan witnessed flows of foreign direct investment which adds to the domestic reserves and thereby has posted various impacts on the different economics sectors.

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 positive impact on economic growth, then on economic development. The study seeks to find answers to these questions, the main question is that:

1-What is the impact of trade liberalization and foreign direct investment on 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. The Importance of the study:

For the past 30 years Sudan suffered from a chronic trade deficit problem. For example, 1970 is the only year in which there was a trade surplus. Since 1971 early attempts to liberalize trade and to acquire project financing failed, Sudan went through a long and difficult process of borrowing to finance ambitious development projects such as roads and sugar factories. Since 2000 Sudan tried to design an Interim poverty strategy without success. Trade reform and the reform of the taxation system were carried out together with removal of many restrictions on international trade. The few remaining reforms were maintained on the ground of balance of payment requirements. In addition, Sudan and many countries designed policies and plans such as attracting FDI in order to encounter financial deficit. These FDI inflows might have either positive or negative impact on the economic growth.

Consequently, the importance of this study is to determine the impact 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.

1.4. 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:
1- To discuss the Sudanese economic growth and to determine the factors that have affect it such as trade openness and foreign direct investment and other controlling variables.

2- In addition, the study will try to give a sufficient answer about the relationship between trade liberalization and economic growth from one side and between FDI and economic growth from the other side.

1.5. Study Hypothesis:

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 positive and significant impact on economic growth in Sudan over the period 1972-2010.

1.6. Methodology of the study:

The study used 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 model is stationary, 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 ordinary least square (OLS) representation of the model.

1.7. Data Sources:

The study depended on different secondary sources such as Central Statistical Bureau, Reports of Central Bank, Journals, Magazines, Ministry of National Economic and Finance, Ministry of Investment and other official reports (World Bank, UNDP reports, IFS and IMF annual reports).
1.8. The structure of the Study:

The thesis is comprised from the following chapters:

Chapter One: Discusses the objectives and importance of the study, the statement of problem, previous studies, the sources of data and methodology.

Chapter two (Literature Review): Brings about The development of foreign trade theories and polices. The discussion covers the theoretical basis of growth theories, classical and neoclassical, and international trade theories such as classical and neoclassical theories. Also, this chapter covers the theoretical basis of the Export Promotion Strategy, in comparison with Import Substitution Industrialization Strategies and their impacts on the economic growth of some LDCs. In addition, the concept of trade liberalization holds and the issues related to it such as the world trade organization and the theoretical literature about the impact of trade liberalization on economic growth had been discussed. Some of FDI theories and the theoretical literature about the impact of FDI on economic growth and on trade liberalization hold.

Chapter three: focuses essentially on the implementation of trade liberalization in the Sudan and its impact on Sudan economy. Moreover, it discusses the flow of foreign direct investment and its importance in enhancing economic situation in the Sudan.

Chapter four: highlights the effect of trade liberalization and FDI on economic growth. It provides empirical results through estimation of an Econometric model of trade liberalization, FDI inflows and economic growth. Finally the chapter will be concluded with discussion of the results obtained.

Chapter five: deals mainly with the conclusion of the study, it explains the research main findings and offers a number of recommendations.
1.9. Previous studies

1.9.1. Foreign Studies:

A number of empirical studies had been done on the fields of trade liberalization and FDI and their impact on economic growth and economic development. These studies will help countries to take considerable procedures to develop themselves.

Empirical evidence on the links between FDI and economic performance is inconclusive. It had been found that FDI is an important contributor to growth for higher income developing countries, but not for the lowest income countries (Blomstrom, Lipsey, and Zejan, 1992). This finding is a similar to that of Balasubramanyam et al. to the extent that the impact of FDI on growth is determined by the internal situation of the country. Similarly, Borensztein, de-Gregorio, and Lee (1995) used a sample of 69 developing countries in a cross-section analysis to examine the contribution of FDI to growth in these countries. Their results showed that FDI is important in technology transfer. In addition, they found that FDI contributes more to growth than does domestic investment and FDI spurs domestic investment as firms in the host country try to catch up or supply the multinationals. They found that the ability of the host country to fully exploit the benefits of FDI depends on the host country’s policies and attributes.

Also a study by Balasubramanyam, Salisu, and Sapsford (1996) examined the role of FDI in the growth process in developing countries characterized by different policy regimes. They used cross-country regressions on a sample of developing countries divided into two groups. One group of countries is judged to be “export promoting” and the other “import substituting,” the two groups are divided on the basis of the countries’ import policies. The study found that FDI affects growth for the whole sample of countries, but the impact of FDI on
growth is strongest for those countries with export-promoting policies. The explanation provided is that these countries are able to better use FDI and the technology it brings. In addition to this, a study by Henrik Hansen and John Rand (2006) analyzed the relationship between FDI and GDP in a sample of 31 developing countries covering three continents over the time period 1970-2000. It found a strong causal link from FDI to GDP, i.e., the FDI has a significant long run impact on GDP irrespective of the level of GDP.

Moreover, a survey by OECD (2002) investigated the relationship between FDI and income growth indicated that, 11 out of 14 studies have found FDI to contribute positively to income growth and factor productivity. All these studies concluded that the way in which FDI affects growth is likely to depend on the economic and technological conditions in the host country. In particular it appears that developing countries have to reach a certain level of development, in education and infrastructure, before they are able to capture potential benefits associated with FDI. While the study of P.P.A Wasaritha Athukorala (2003) which examined the relationship between FDI and GDP using time series data from the Siralankan economy. Econometric results of this study showed that FDI inflows do not exert an independent influence on economic growth. And also the direction of causation is not towards from FDI to GDP growth but GDP growth to FDI. That is the direct growth impact of FDI on the Siralankan economy has not existed so far.

Another study had been done by Melina Drutski, Chaido Dritsaki and Adamopoulos (2004), investigated the relationship between exports, economic growth and foreign direct investment using annual data for the period 1960-2002. This study used Johansn co integrated test analysis to lead to a long run equilibrium relationship among the variables. Then the methodology of error correction model was applied to estimate the short run and long run
relationship. The selected co-integrated vector gave the appropriate error correction term, which proved to be negative and statistically significant at a 5% level of significance during its inclusion to the short run dynamic equation. Finally, using Granger causality test the study inferred that there is a bilateral casual relationship between exports and economic growth, while there is a unidirectional causal relationship between foreign direct investment and economic growth with direction from foreign direct investment to GDP and also a unidirectional causal relationship between foreign direct investment and export with direction from foreign direct investment to exports.

In addition to the previous studies which investigated the relationship between FDI and economic growth, there are other studies which explained the impact of FDI and trade liberalization on economic growth. For example, the study of Ana Cuadros and Maite Alguacil (2004) investigated the effects of liberalization in Mexico, Brazil and Argentina by taking in the account trade and FDI growth links. The results suggested that they were positively related with the output of these countries. Another study by M.Golam Mortaza and Narayan Chandra (2007) attempted to find out the relationship between FDI, trade liberalization and economic growth for five South Asian countries during the period 1980-2004. The study empirically explored a significant and positive relationship between FDI and economic growth of South Asian economies and positive but weak empirical evidence about the impact of trade liberalization on growth. In addition, the country specific time series data demonstrated that FDI and trade liberalization caused growth in the cases of Bangladesh and Pakistan as suggested by the Granger causality tests.

Also the study of Baharom, A.H., Habibbullali, M.S and Royfaizal, R.C (2008), investigated the role of trade openness and foreign direct investment in influencing economic growth in Malaysia during the period 1975-2005. The
empirical results demonstrated that trade openness is positively associated and statistically significant determinant of growth, both in short run and long run. The results also indicated that foreign direct investment is positively associated and statistically significant in the short run but it was negatively associated and statistically significant in the long run. Besides these two variables, the other control variable namely exchange rate is also significant in the short run as well as in the long run. Alif Darrat and Jayanta Sarker (2009) investigated the role of FDI inflows in the economic growth process in Turkey. In addition consequences of economic openness and human capital accumulation were also examined. This study covered 37 years from 1970-2006. It first checked for the presence of long run relationship between growth and its possible determination and then analyzed the underlying short run dynamics. Results from cointegration test supported the theoretical priors and consistently suggested that there exist a robust long run relationship linking real economic growth with FDI inflows, economic openness and the accumulation of human capital. These findings received further support from estimating the associated Error Correction Model (ECM). Such attest to the critical importance of these factors in promoting faster economic growth in Turkey. The ECM regression results indicated that among the three growth factors, only human capital accumulation can stimulate economic growth in the short run in addition to its significant long run causal impact. This result reflects that good education is a prerequisite for a genuine and sustained growth in Turkey; both in the long run as well as short run horizons. Also the study found that FDI inflows promote growth, in addition to that the study found that trade openness improved macroeconomic performance in Turkey in the long run while the results fail to support any significant short run causal effects from FDI inflows and economic openness to growth.
1.9.2. Sudanese Previous studies:

A number of Sudanese empirical studies had been conducted on the issues of liberalization and FDI and their effect on economic growth.

A study conducted by A/Rahim (1998) which discussed the role of foreign direct investment in improving the performance of industrial sector in Sudan for the period (1975-1995). The study explored all economic and political factors that influence the investment climate in Sudan during the study period. The study used empirical approach to evaluate the role of foreign direct investment in developing the industrial sector in Sudan. The study found that the weak performance of the Sudanese economy and the political instability during the study period generated unfavorable investment climate in Sudan whereas, Sudan’s investment laws provide adequate concessions and guarantees to attract foreign direct investment. Moreover, the study found that the foreign industrial firms (Daewa, Kenana and Sigma-Tau), contributed significantly in improving the performance of the Sudan’s industrial sector. Also, the study revealed variations in the contribution of foreign industrial firms in developing the Sudan’s industrial sector. The study recommended that, the government must improve the investment climate by improving the performance of the Sudan economy and provision of strong infrastructural base. Also, the adoption of privatization will provide suitable opportunities for foreign investors in Sudan and provision of adequate information about Sudan’s potential resources to attract investment.

Another study conducted by Fadel (2006) aimed to study the relationship between activity and performance of the industrial sector and between the rate of the foreign investment environment and the foreign investment as well as the relationship between the investment legislation and encouragement of the foreign investment during the period 1993-2004. The methodological approach
adopted in this research is a descriptive and deductive data based on both primary and secondary resources of information. The research findings indicated that there is a positive relationship between the performance of the industrial sector and the rate of the foreign direct investment. Another result is that the investment environment attracted foreign direct investment and the adjustment of investment legislation helped in attracting FDI. The research recommended the improvement of the investment environment in the Sudan by improving administrative legislative environment besides infrastructure (e.g. paved roads, electricity).

While the study of Hussein (2009) examined the impact of foreign capital inflow on economic growth in Sudan during the period (1989-2004). Foreign capital can take different types such as long term concessional loans and grants, medium and short run loans, private foreign capital and foreign direct investment. The study used the ordinary least square method (OLS) in estimating the model to analyze the impact of foreign capital on economic growth in Sudan, and factors determining the inflow and effectiveness of foreign capital. Most of foreign loans were utilized in the long run term projects like Marawe dam, construction of high ways and rehabilitation of existing projects, rural development and expected to increase capacity of the economy. But these projects did not produce goods for exports. The repayment of these loans might put some pressure on the balance of payment in the future. The study found that FDI received by Sudan was mostly utilized in the field of oil exportation and export led to immediate positive impact on the economy. The terms of trade improved, foreign reserves accumulated, the contribution of industry and mining sector to the GDP had increased and exchange rate remained stable, portfolio investment was negligible, other investment was utilized in importing consumption goods. The study recommended that Sudan
would seek to substitute different types of capital for FDI, not only in mining sector, but also in other sectors of the economy, namely agriculture. Also the study recommended that government should not focus on directing investment to the oil sector alone, while neglecting other economic sectors.

Another study by Ahmed (2010) discussed the determinants of the foreign direct investment in Sudan during the period (1990-2008). This study aimed to highlight the role of FDI, identifying its determinants, estimating and evaluating their link with the FDI. The researcher adopted descriptive and analytical methods to describe the FDI. An econometric approach was used to build the FDI model and estimating it using OLS estimator. The determinant variables that affect FDI in this study were inflation, gross domestic product, exchange rate and external debt. The study found a positive relationship between FDI and GDP and an inverse relationship between FDI and inflation. While the relationship between FDI and other two factors are insignificant. The study recommended that, improving the infrastructure, adopting a suitable monetry and fiscal polices to maintain economic stability and enhance openness of the country to international trade especially with technically advance countries such as China to make use of high technology and good experiences.

Also, a study conducted by Edris (2010) explained the role of FDI on economic development in the Sudan during the period (1990-2003). The researcher used the analytical descriptive method to describe FDI during the study period to know its size and its impact on the cash flows, export sector and its social impact. The study found that Sudan benefits from the FDI and its contribution in increasing the cash flow and export sector and reduce imports and provide job opportunities. The study recommended that FDI should be directed to the agricultural sector as it has the greatest participation in Sudanese economy. Also the door should be opened for more FDI because it provides
funds which contribute to the development projects. In addition, the study recommended that the procedures must be speeded up to great permission on lands to these investments, and improve the investment climate to attract more investments.

Another study by lagu (2010) examined the impact of investment environment in attracting foreign investors into Sudanese private sectors. The methodology used in this study is the descriptive statistical and analytical methods. The research problem was that the investment climate in Sudan is not conducive for attracting foreign investment, specially reflecting on the laws and regulation that govern the operation of the local and foreign investment. The study reached to the result that investment climate did not attract or encourage foreign investors to invest on the Sudan. The study recommended that the treatment of all aspects of deficiency and the removal of all obstacles which hinder the investment generally and FDI in particular.

Also, a study by Hassen (2010) aimed to identify the impact of tax exemptions in the creating a suitable and attractive environment for foreign investment flowing to Sudan during the period (2000-2005), as Sudan is particular considered as one of the developing countries suffering a lack of internal saving required to form funds needed for development. The methodology used in this study is the descriptive analysis. The study found that FDI has led to an improvement in the performance of the Sudanese economy. Besides, the taxation exemptions had not been basic factors in attracting FDI, but they were together with other factors had been more effective in the attraction of FDI. The study recommended that it is important to direct tax exemptions to development programs, also there should be a control over projects exempted and organized laws of decentralized governance to work in
harmony with the investment laws in order to make harmony between the centre and the states.

1.9.3. Differences between This Study and Pervious Studies:

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 the coverage of the study to recent data, particularly during 1972-2010, which is significant as a period characterized by sustainable inflows of FDI to Sudan as well as extensive reforms, particularly in polices related to trade, industry, fiscal and public sectors and privatization. Secondly, this study considers trade liberalization as one of the sources of the 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 regarded 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. In addition to that, the study used relatively new, and not frequently used estimation technique, which is the bounds testing approach to co integration.

Also, the majority of previous studies dealt with an analysis of the investment climate in Sudan, Is it attractive or not. Some studies had explained the impact of foreign direct investment in the improvement of the industrial sector. While one of these studies discussed the impact of the flow of foreign capital on economic growth in the Sudan during the period 1989-2009. Other studies explained the impact of FDI on economic development in Sudan through analyzing the impact of FDI on the export sector and cash flow. Number of foreign studies examined the role foreign investment and trade liberalization on economic growth of these countries. This study differs from previous studies because it discussed the impact
of trade liberalization and foreign direct investment on economic growth by taking Sudan experience as a case study, in addition to study some of variables related to economic growth. It also examined the determinants of foreign direct investment and trade openness functions to get more explanation for these variables.
CHAPTER TWO
LITERATURE REVIEW AND THEORITICAL FRAMEWORK

2.1. Introduction:

The literature on international trade and economic growth is abundant and diverse. The theoretical framework of this study will draw on more than one theory. On one side, the study has the Heckscher-Ohlin (H-O) model which covers a wide range of international trade issues. This model founded on the principle of comparative advantage demonstrates that countries are better with free trade and the gains from trade improve resource allocation and social welfare. However, this theory does not incorporate factor mobility into analysis, which restricts the analysis of the effect of foreign capital inflow on output growth. In recent time, the role of FDI in the productive process is considered as important as international trade in the economy. It is thought flows of foreign capital that the stock of technologies investment and human capital can improve without public intervention, especially in developing countries with limited resources. For that reason, to understand how economic growth responds to the mobility of capital, the postulates of the endogenous growth theory is considered.

The purpose of this chapter is to describe the theoretical framework of the issues tackled in this research. The present chapter is divided into sixth sections. Sections 2.2 and 2.3 examine theories of economic growth focusing on neoclassical endogenous growth theory and its evoluation through time. It also explains the polices of economic development such as inward and outward strategies. Sections 2.4, 2.5 and 2.6 deals with the principles of international trade theories that explain why countries trade, the gain from trade and the effect of trade
liberalization on growth. In section 2.7 the study explores the foreign direct investment, its definition, types, determinants, incentives, theories and its impact on economic growth. Also, it examines the relationship between trade policies and flows of FDI.

2.2. Theories of Economic Growth:

Many of the most fundamental principles relating to economic growth, international trade, and the relationship between them were anticipated by the classical economists, such as David Hume (1711-76), Adam Smith (1723-90), David Ricardo (1772-1823), and John Stuart Mill (1806-73). These principles include, among others:( Ferrantino et.al, 1997)

- The realization that sustained increases in real wages can be maintained by steady increases in capital per worker.
- The role of saving, or abstaining from consumption, in financing capital accumulation.
- The role of improvements in the “useful arts”, advances in machinery, and extension of the division of labor in raising living standards, and
- The twin possibilities that capital accumulation and technological progress could lead to expansion in international trade and that international trade could improve the conditions for economic growth. The feedback effects of trade on economic growth were recognized to operate through a number of channels, including the importation of inputs to domestic manufactures, international diffusion of new production techniques and new consumption possibilities, and wider extension of the division of labor, promoting increased economies of scale.
In the mid-20th century, interest in the theory of economic growth revived. Plans for reconstruction of Europe and Japan after Second World War, the problem of very low living standards in the newly independent former colonies, and the Soviet Unions experience of rapid increase in mechanization and industrial output in the Stalin Khrushchev years converged to dramatic issues surrounding economic growth. Western attempts constructing new mathematical theories of economic growth had been made by Roy Harrod (1939) and Evsey Domar (1946) relied on assumption of technologically fixed proportions between labor and capital and fixed rates of saving independent of any human decisions about the appropriate rate of savings. The logical implications of such restrictive assumptions were that stable, long run economic growth was unlikely in market economies, and that chronic growth of either unemployment or idle machinery was very likely.

2.2.1. Classic Economics Growth Theories:

Smith focused on increasing productivity through the division of labour and specialization, which resulted in greater productive efficiency. He considered that the profits gained in agriculture and industries contribute to the increase in savings, which leads to increase in investment, and thereby increases growth. Also, the division of labour, increasing productivity, applies to industry more than agriculture (Thirlwall, 1999). This optimistic outlook for growth by Smith was offset by the pessimistic outlook at most classic economists, such as Malthus through his theory of population. He considered that the rate of population growth accelerated faster than the rate of growth of production. Thus, the solution would be to decrease the population through war and famine (Reekie, 1998; Hardin, 1993). According to Marx, growth would go down due to a decline in the return on capital, and increasing the share of capital for production which would lead to a
profit rate of zero. In addition, the crisis of surplus production, would negatively affect economic growth (Salvadori, 2006).

2.2.2. Harrod - Domar Growth Model

In the context of Keynes's system, development and growth models have emerged according to Harrod (1939) and Domar (1946). In Keynesian literature, Harrod focused on determining the rate of growth from one period to another, which is enough to maintain full employment. Productivity Energy and employment in the economy will be inoperative without achieving that rate of growth in national income, or will be used at less than its capacity (Taha, 1990). Harrod-Domar's model defines the growth rate which is required to maintain full employment as follows (Stern, 2007; Ghatak, 2003; Dixit, 1976):

\[
G = \frac{S}{Y} \times \frac{1}{K}
\]

Where:

- \(G\) = Rate of Growth.
- \(S\) = saving in a period.
- \(Y\) = National Income.
- \(\frac{1}{k}\) = Coefficient of Capital.

According to this model, the savings rate (S/Y), and inverted of capital/income are the factors which determine the rate of growth. The Coefficient of capital / income shows the relationship between what is invested and the resulting income. That means what we need to invest capital to achieve a given increase in income. From the above, the Harrod-Domar model highlights the importance of determining the rate of investment (S/Y), which is necessary to achieve a certain rate of economic growth. This model also shows the possibility of increasing the rate of growth, by either reducing a factor (capital/income), or increasing the rate of investment (savings/income).
2.2.3. Neoclassical Endogenous Growth Theory:

The neoclassical growth theory of Robert Solow (1956) is generally recognized as the modern beginning of fruitful theorizing about economic growth in market economies. The neoclassical theory overcame the paradoxes of the Harrod-Domar model by recognizing that substitution between labor and capital takes place in response to changes in their relative price.

Neoclassical theory of growth stressed the importance of savings and capital formation for economic development, and for empirical measures of sources of growth. Solow's allowed changes in wage and interest rates, substitutions of labor and capital for each other, variable factor proportions, and flexible factor prices. He showed that growth needs not to be unstable because, as the labor force outgrew capital, wages would fall relative to the interest rate, or if capital outgrew labor, wages would rise.

Solow used the Cobb-Douglas production function, written in 1920s by the mathematical Charles Cobb and the economist Paul Douglas, to distinguish among the sources of growth, labor quantity and quality, capital and technology. The equation is: (Nafziger, 2006)

\[ Y = AK^\alpha L^\beta \]  

(1)

Where \( Y \) is output or income, \( A \) the level of technology, \( K \) capital and \( L \) labor. \( A \) is neutral in that it raises output from a given combination of capital and labor without affecting their relative marginal products. The parameter and exponent \( \alpha \) is \( \left( \frac{\Delta Y}{Y} \right) / \left( \frac{\Delta K}{K} \right) \), the elasticity of output with respect to capital (holding labor constant). The parameter \( \beta \) is \( \left( \frac{\Delta Y}{Y} \right) / \left( \frac{\Delta L}{L} \right) \), the elasticity of output with respect to labor (holding capital constant). Solow assumed that economy operates under constant
return of scale and, $\alpha + \beta = 1$, which represent this assumption means that a 1 percent increase in both capital and labor increases output by 1 percent. In addition to this he assumed perfect competition, so that production factors are paid their marginal products, and $\alpha$ also equals capital share and $\beta$ labors share of total income. The neoclassical model predicts that incomes per capita between rich and poor countries will converge. But empirical economists can not find values for parameters and variables that are consisted with neoclassical equation (1) and the evidence of lack of convergence had been presented. So, the Solow model is a poor predictor without modification or augmentation.

Neoclassical assumption had been modified by Gergory Mankiw, David Romer and David Weil (1992), they argued that although the direction of the variables, the growth in capital and labor, is correct, the magnitudes of these growths on income growth are excessive. These three economists proposed an augmented Solow neoclassical model, which included human capital as an additional explanatory variable to physical capital and labor. Human capital can yield a stream of income over time. The Nobel economist Theodor W. Schultz (1964) argued that a society can invest in its citizens through expenditures on education, training, research and health that enhance their production capacity (Nafziger, 2006).

Also, new growth theories identified technological progress, as a factor of growth, which arises from R&D expenditure, which has a private return for the firm undertaking investment and a positive external effect for all other firms in the economy (Kambhampati, 2004). The speed of any country’s technological progress is conditional of the following: (Sengupta, 2011)

- The education level of the labor force and types of investment in R&D.
• Learning by adopting or improving better technology from abroad through foreign direct investment or technology imports.

• The economy's institutional and organizational capabilities in the form of flexibility, transparency, and productive efficiency.

Endogenous growth models suggest that government policies can definitely affect the rate of long-term economic growth by impacting the accumulation of both physical and human capital and the effort devoted to R&D and the creation and diffusion of new knowledge through software development and other services provided by the new information technology.

2.3. Policies of Economic Development:

The purpose of economic development is to reach the highest level of output growth to improve the quality of life of population by using natural and human resources. Over time, income per capita is a measure of national living standards. The development policies recognize that there is a close relationship between growth and development. Nations implement development policies that make use of instrument of fiscal, monetary and trade policies in order to improve the living conditions and achieve national goals. Nations can protect or liberalize the economy to improve economic growth, but when applied incorrectly they create distortions because the market is not allowed to operate freely. In this section, we will explain two opposite development policies known as the Import Substitution industrialization (ISI) and polices known as Outward oriented polices.

Trade restrictions (protections) are recommended by protectionist writers on the basis of arguments of John Maynard Keynes, who believed in state trading for commodities, international cartels are necessary for manufactures and quantitative import restrictions for nonessential manufacture, these were the basis of
protectionist polices who considered government intervention in economic affairs as an important element for economic development. Samuelson, p. (1972) discussed the valid argument for a country imposing tariffs on its trade, that it will shift the terms of trade in its favor and against the foreign countries.

Tariffs historically had been used for three purposes, revenue, restriction and reciprocity. When a country imposes a tariff for protectionist purpose, it is trying to increase the price of foreign goods in the domestic markets to shift consumers to buying domestically produced substitutes. Adam Smith(1776) pointed out in The Wealth of Nations, one of the major reasons why government do this is not to help consumers, but to help interest groups and industries that want to be protected from foreign competition. They lobby the government to impose those restrictions.

2.3.1. Inward-oriented polices: the Import Substitution Industrialization (ISI):

Most of developing countries joined import substitution strategies to locally produce goods at the beginning of the 1950s and continued into the 1960s and 1970s.

Import substitution was a means for these countries to revitalize their economic development and reduce their dependency on the former colonial powers by diversifying their productive structures. Import substitution strategies were accompanied by restrictive external trade polices and considerable protection for emerging industries. These strategies enabled Africa to achieve high levels of economic development in the late of 1980s and in the 1970s. The average annual industrial GDP growth rate was estimated at the 5.5 per cent between 1970 and 1980, while the rate was negative from 1980 to 1984 (minus 2.5 per cent) and positive but very low from 1984 to 1987 (0.4 per cent).
These strategies failed as early as the late 1970, for many reasons, the first were the lack of internal structuring in the industries concerned. The rise of production of finished goods led to a rapid increase in imports of intermediate and capital goods, resulting in worsening trade imbalances and balance of payments deficits. Also, the failure of these strategies can be explained by the weakness of internal markets, which in Africa were limited to a small urban middle class, and their inability to provide significant markets for new industries. The arguments most often used to explain the crisis in import substitution strategies was the poor productivity of newly developed enterprises. The aim of protection in developing countries was to help enterprises overcome their productivity differential in relation to their competitors in developed countries. This implied that protection provided by import substitution strategies could be used by enterprises in order to make the needed investments to increase their productivity and become more competitive. However, enterprises only rarely invested and modernized their production capacity, and soon began to demonstrate rent-seeking behavior as they took the advantage of the protection offered to them by the lack of external openness. As a result, import substitution strategies created very little improvement in the productivity of local enterprises and the competitiveness of developing countries. (Hammouda et al., 2000)

In the early applications of import substitution strategy the government used a fixed exchange rate policy. But after a while the local currency appreciates which in turn affects the balance of trade negatively (Edwards, 1993). The interest rate is also determined by the government, and it’s determined under the market equilibrium level. By this way the investment is promoted in order to support the firms (Bruton, 1998).
In practice IS strategy is applied to consumption goods, because they don’t need a progressed technology. Then, it enlarges by including intermediate goods, the aim of this is to form a basis in producing high level of technology. Importing intermediate goods by developing countries raise the level of trade deficit. Since internal industry is protected by the tariffs and quotas, a foreign firm tended to produce their final goods inside the countries that applies IS strategy. So these foreign firms may produce their products without any quota. In the countries that applied IS strategy, there had been high level of prices and low quality of goods, shortage of research and development because of the absence of competition and this lead to great monopolization inside these countries.

Developing countries experienced two external shocks from 1973 to 1983, the first was caused by the increase in oil prices and the subsequent economic recession in the world. Consequently, higher interest rates created higher debt crises for these countries. In the Second World shock, at the beginning of the 1980s, the oil price rose to 34 dollars per barrel, leading to a debt crisis in most developing countries. Policy response varied, but most redesigned their development strategies. The reasons of these changes are the vulnerability of protectionism to sustain growth and the renegotiation of the external debt with international creditors (IMF and World Bank) who required the application of outward orientated policies (Galan, 2006).

2.3.2. Outward oriented policies: Export promotion (EP):

Export promotion is the removal of the bias toward import substitution and neutrality toward trade (Hogendorn, 1992). Opposite to the ISI strategy, EP strategy promotes only the industries that have potential for developing and competing with foreign rivals. Since the goal is to trade abroad, there becomes competition, which
in turn remedies the return to scale. The main goal of the EP strategy is to prepare the potential industries for competition with the foreign rivals. So the industries at their childhood must be protected for a while (Balassa, 1989).

In the 1980s, many developing countries experienced radical transformation in their development policies from inward to outward oriented policies. In general terms, the outward strategy has its foundation in trade liberalization and reduction of government intervention in the economy. A more liberalized economy is expected to lead to better resources allocation, to greater capacity, to economies of scale, technological innovation and to higher labor productivity. In this way economic polices- fiscal, monetary and trade policies – are designed to achieve outward orientation objectives that promote free movement of capital and commodities. Among the most important measures taken in countries that adopted this strategy were (Galan, 2006):

- The opening of the domestic market to diminish the differences between domestic and world prices.
- The maintenance of a realistic exchange rate.
- The restrictions of government intervention in the economy, especially in goods production and factor markets.
- The support of export activities through the improvement of the infrastructure and administrative facilities.

The specific effort to promote exports and achieve higher growth rates is known as an Export Led-Growth (ELG) strategy. A summary of the ELG hypothesis (Galan, 2006):

- International trade encourages an efficient factor resources allocation in the economy, according to comparative advantages.
• Exports are the mechanism by which output growth rates can be higher in the long run.

• The rate of export growth will cause productivity gains due to economies of scale and specialization.

• The export sector may generate positive spillover- or linkage effects- to non exports sectors through technological transfers, productivity increases, technology adoption and suppliers demand.

Countries which applied export promotion strategy gain advantages from growing of export sector. One of these advantages that studies show that export prompting countries have fewer distortions in their price systems than do countries with an import substitution strategy. Also, export promotion will create more employment that labor usually abundant in LDCs and comparative advantage should lie in goods that contain a large relative input of abundant factor of production. In addition, the effect of outward orientation on saving is likely being positive, because the higher the real incomes obtained from exporting will encourage saving.

Hogendorn (1992) expressed a number of dynamic gains from export promotion strategy. As time passes, exporters obtain new insights into technology, design, quality control, organization, and management, especially from buyers in developed countries willing to pass on the latest information. Large exporting firms spread this knowledge to smaller firms by contracting for inputs. Also, foreign MNEs may provide the specification, technology, even the capital and joint management. Inflows of direct investment from developed countries are in fact often associated with exporting, and that tendency appears to be increasing. With the incentives now favoring export expansion, the limited number of old traditional export commodities expands also. This gives more flexibility if supply shocks
occur or if problems develop in overseas markets. Banks become more interested in lending because the increasing revenues from exporting make debt servicing easier.

2.4. Trade Liberalization:

A lot of countries imposed higher tariffs, import quotas and foreign exchange restrictions in order to meet the Great Depression, all of which really reduced international trade. The whole world economy suffered immensely during the 1930s. It turned out that all these trade restrictions did not help countries recover from the great depression at all, even though the whole idea was to raise domestic output and domestic employment by stopping imports. After World War II, the General Agreement on Tariffs and Trade (GATT) emerged. The U.S and other countries basically thought that the Great Depression was a horrible experience for them and they decided to remark economic polices after war. They decided to achieve that by trying to reduce trade barriers and expanding world trade. They didn’t eliminate all trade barriers when they set up the GATT.

When GATT had been formed, it was mainly the U.S, Europe and a few other rich countries. Developing nations rejected GATT, figuring they couldn’t compete with America, Europe, and Japanese producers. They argued that the only way they could successfully industrialize was through implementing high trade barriers. But that attitude has changed, in the 1980s and 1990s; developing countries began to understand that they were not doing so well with these high trade barriers and decided to open their economies to foreign investment and international trade (Irwan, 2009).
2.4.1. World Trade Organization:

While the global multilateral trading system represented by the World Trade Organization (WTO) provides a regulatory framework for international trade today, over 130 regional trade arrangements (RTAs) also exist.

Regional trade arrangements have a significant impact on international trade since 90 percent of WTO members, including several developing country members, have signed at least one or more RTAs. The trade of a majority of developing country members is affected by the terms of RATs as well as WTO disciplines. The trade of developing countries not participating in RTAs may be also affected by the terms of these RATs since the competitive position of their exports in the markets of RATs members can be relatively weakened by the trade preference offered to the members but not to non member developing countries.

The world trade organization (WTO) is an international organization dealing with the global rules of trade between nations. On January, 1995, this organization started its operations, but the trading system is half a century older. Since 1948, the General Agreement on Tariffs and Trade (GATT) had provided some general rules and regulations for the system. Uruguay Round is the largest GATT round which lasted from 1986 to 1994 and led to WTOS creation. GATT had a short dimension which covers trade in services and in traded inventions, creations and designs (intellectual property) (WTO, 2000).

The WTO has four key objectives :( WTO, 2000)

- To set and enforce rules for intermediate trade.
- To provide a forum to negotiate and monitor trade liberalization.
- To improve policy transparency.
• To resolve trade disputes.

2.5. Theoretical bases for gains from trade:

This part provides an overview of the theories which analyze how trade can affect the level of national welfare or economic growth. The earliest trade models look at static gains of trade, which arise from shifting recourses towards more efficient sectors, but don’t offer an explanation how trade affects long-term growth. These theories have little to tell about future performance when a country is open to trade. This gap has been filled in particular by the new growth theory, which enables us to relate trade to growth via its effect on technology and productivity growth. These so-called dynamic gains from trade considered to be much more significant than static gains from trade. Many of theories establishing a positive link between trade and growth are based on very specific and not always realistic assumptions, such as competitive markets or perfect labor mobility. The relationship may therefore break down if some of the assumptions do not hold.

2.5.1. Ricardian comparative advantage Theory:

According to David Ricardo’s and John Stuart Mills classical trade theory, trade raises a country’s potential income compared to autarky by permitting it to specialize according to its comparative advantage. This means that a country should shift resources completely towards the production of those goods that its labor can produce relatively less efficiently. “Relatively more efficiently” means that, a country can produce a good at a lower opportunity cost relatively to other country (Grossman et.al, 1995).

The theory of comparative advantage extends on the theory of absolute advantages by Adam Smith. In a simple setting of two goods, two countries,
absolute advantage implies that if a country A produces one set of goods at a lower cost than a country B, and country B is more productive in producing another set of good, it will be beneficial for both countries to specialize and trade, since they will obtain more of both sets of goods. The criticism raised against the absolute advantage principle, is that there exist some countries which might not have the advantage of producing any good, so that, foreign trade between all countries will not take place. In Ricardo’s theory of trade due to relative advantages, trade is beneficial even if a country A is more productive than country B in producing both sets of goods, as long as country Bs opportunity cost of producing a certain set of goods compared to another set of goods is lower than the opportunity cost of country A.

In the comparative advantage model, differences between countries in efficiency and hence comparative advantage are due to differences in technology. However, the sources of technological differentials are not further explained within the model, technology is assumed to be exogenous. The welfare gain can be explained in two ways: instead of producing an expensive good, a country can produce a cheap one and trade it for the desire good. At the same time trade increases a country’s consumption possibilities, here will be a more interesting mix of the two goods and real wages will increase in both countries.

But the theory is not free from some defects. The following paragraph discusses some of the important criticisms that face this theory (Samuelsson, 1989):

1. Unrealistic assumption of labour cost:

The most severe criticism of the comparative advantage theory is that it is based on the labour theory of value. In calculating production costs, it takes only labour costs and neglects non-labour costs involved in the production commodities. This
is highly unrealistic because it is money costs and not labour costs that are the basis of national and international transactions of goods. Furthermore, the labour cost theory is based on the assumption of homogeneous labour. This is again unrealistic because labour is heterogeneous—of different kinds and grades, some specific or specialized, and other non-specific or general.

2. No similar tastes:

The assumptions of similar tastes are unrealistic because tastes differ with different income brackets in a country. Moreover, they also change with the growth of an economy and with the development of its trade relations with other countries.

3. State assumption of fixed proportions:

The theory of comparative costs is based on the assumption that labour is used in the same fixed proportions in the production of all commodities. This is essentially a static analysis and hence unrealistic. As a matter of fact, labour is used in varying proportions in the production of commodities. For instance, less labour is used per unit of capital in the production of steel than in the production of textiles. Moreover, some substitution of labour for capital is always possible in production.

4. Unrealistic assumption of constant costs:

The theory is based on another weak assumption that an increase of output due to international specialization is followed by constant costs. But the fact is that there are either increasing costs or diminishing costs. If the large scale of production reduces costs, the comparative advantage will be increased. On the
other hand, if increased output is the result of increased cost of production, the comparative advantage will be reduced, and in some cases it may even disappear.

5. Ignores transport costs:

Ricardo ignores transport costs in determining comparative advantage in trade. This is highly unrealistic because transport costs play an important role in determining the pattern of world trade. Like economics of scale, it is an independent factor of production. For instance, high transport costs may nullify the comparative advantage and the gain from international trade.

6. Factors not fully mobile internally:

The theory assumes that factors of production are perfectly mobile internally and wholly immobile internationally. This is not realistic because even within a country factors do not move freely from one industry to another or from one region to another. The greater the degree of specialization in an industry, the less is the factor mobility from one industry to another. Thus, factor mobility influences costs and hence the pattern of international trade.

7. Two-country two-commodity model is unrealistic:

The Ricardian model is related to trade between two countries on the basis of two commodities. This is again unrealistic because in actuality, international trade is among countries trading many commodities.

8. Unrealistic assumption of free trade:

Another serious weakness of the theory is that it assumes perfect and free world trade. But in reality, world trade is not free. Every country applies restrictions on
the free movement of goods to and from other countries. Thus, tariffs and other trade restrictions affect world imports and exports. Moreover, products are not homogeneous but differentiated. By neglecting these aspects, the Ricardian theory becomes unrealistic.

9. Unrealistic assumptions of full employment:

Like all classical theories, the theory of comparative advantage is based on the assumption of full employment. This assumption also makes the theory static. Keynes falsified the assumption of full employment and proved the existence of underemployment in an economy. Thus the assumption of full employment makes the theory unrealistic.

10. Self-interest hinders its operation:

The doctrine does not operate if a country having a comparative disadvantage does not wish to import a commodity from the other country due to strategic, military or development considerations. Thus, often self-interest stands in the operation of the theory of comparative costs.

11. Neglects the role of technology:

The theory neglects the role of technological innovations in international trade. This is unrealistic because technological changes help in increasing the supply of goods not only for the domestic market but also for the international market. World trade has gained much from innovations and research and development (R & D).
12. One-sided theory:

The Ricardian theory is one-sided because it considers only the supply side of international trade and neglect the demand side. In the words of Professor Ohlin, "It is indeed nothing more than an abbreviated account of the conditions of supply."

13. Impossibility of complete specialization:

Professor Frank Graham has pointed out that complete specialization impossible on the basis of comparative advantages in producing commodities entering into international trade. He explains two cases in support of his argument: one, relating to a big country and a small country, and two, relating to a commodity of high value and low value.

14. A clumsy and dangerous tool:

Professor Ohlin has criticized the classical theory of international trade on the following grounds:

(i) Factors are immobile not only internationally but also within different regions. This is proved by the fact the wages and interest rates differ in different regions of the same country. Further labour and capital can also move between countries in a limited way, as they do within a region.

(ii) It is a two-country two-commodity model based on the labour theory of value which is sought to be applied to actual conditions involving many countries and many commodities. He, therefore, regards the theory of a comparative advantage as cumbersome, unrealistic, and as a clumsy and dangerous tool of analysis. As an
alternative, Ohlin has propounded a new theory which is known as the modern theory of International Trade.

15. Incomplete theory:

It is an incomplete theory. It simply explains how two countries gain from international trade. But it fails to show how the gains from trade are distributed between the two countries.

2.5.2. Heckscher – Ohlin (H-O) Theory – New Trade Theory:

In this model, trade is explained based on countries factor endowment such as relative quantities of capital and labor available for production. H-O assumes that countries have access to the same technology. If countries have a relatively large quantity of labor, it will be beneficial to shift resources to the labor intensive production, export these goods and import capital intensive goods. This kind of exchange is due to price differences as (H-O) explained, labor for example will be relatively expensive in a country with abundant capital. The country with a high labor endowment can ask for higher prices when exporting its labor intensive goods than when selling them in the domestic market. (Bhagwati et.al, 1998)

The Samuelson theorem explains how trade affect factor prices (wages in the case of labor and rents in the case of capital) in the H-O model, that is, the impact on growth and incomes. It states that if the price of a labor intensive good increase due to trade in a country where labor is relatively abundant, then the wage rate will go up and rents to capital owners will fall. A generalization of this theorem shows also that it is not only the nominal wage rate that will rise, but also the real wage, which is a better measure of wellbeing because it accounts for changes in prices (Paul, 1981).
Empirically, most of the researchers on Heckscher-Ohlin Model have dealt with the role of factor endowments in determining the composition of trade; the H-O model had been tested by Wassily Leontief (1956) which called Leontief paradox. Leontief tried to utilize the input-output techniques to calculate the amount of labor and capital in a representative bundle of exports and imports substitutes, he has called attention to the role of capital embodied in the form of human skills, Leontief calculated that US exports were relatively labor intensive and its imports were relatively capital intensive, this was the opposite result to what the H-O model had predicted. Leontief tried to express his results rather than to reject the H-O model, arguing that what was prevailing during the time of research was an optical illusion, since in 1947 U.S labor was about three times as productive as foreign labor. This explanation was rejected by many economists, for example Salvatore D.(1990) noted that the result brought by Leontief were in contradictions with the H-O model. The reason is that while U.S labor was definitely more productive than foreign labor, so was capital.

Baldwin in (1971) updated Leontief's study by using U.S input –output table and U.S trade data for 1962, Baldwin found that it is necessary to include human capital (education, job training, and health) to eliminate the paradox. A study conducted by Leamer and his associates in 1987 using cross- section data on trade, and factor endowment for 27 countries and many commodities, found that H-O trade model was supported only about half the time. Samuelsson, P. (1989) argued that Leontief Paradox enriched the H-O model in its logical content, but empirically, in view of the conflicting results, the model needed to be examined with a more conclusive test.
Although H-O model is normally thought to be basic for international trade theory, there are many points of criticism against the model. These criticisms are (Bhagwati et.al, 1998):

1. **Factor equalization theorem**

   The factor equalization theorem (FET) applies only for most advanced countries. The average wage in Japan was once as big as 70 times the wage in Vietnam. These wage discrepancies are not normally in the scope of the H-O model analysis.

   Heckscher–Ohlin theory is badly adapted to analyze South-North trade problems. The assumptions of HO are unrealistic with respect to North-South trade. Income differences between North and South is the concern that third world cares most. The factor price equalization theorem has not shown a sign of realization, even for a long time lag of a half century.

2. **Identical production function**

   The standard Heckscher–Ohlin model assumes that the production functions are identical for all countries concerned. This means that all countries are in the same level of production and have the same technology. This is highly unrealistic. Technological gap between developed and developing countries is the main concern for the development of poor countries. The standard Heckscher–Ohlin model ignores all these vital factors when one wants to consider development of less developed countries in the international context. Even between developed countries, technology differs from industry to industry and firm to firm base. Indeed this is the very basis of the competition between firms, inside the country and across the country.
3. Capital as endowment

In the modern production system, machines and apparatuses play an important role. What is named capital is nothing other than these machines and apparatuses, together with materials and intermediate products which will be consumed in the production process. Capital is the most important of factors, or one should say as important as labor. By the help of machines and apparatuses, the human being got a tremendous production capability. These machines, apparatuses and tools are classified as capital, or more precisely as durable capital, for one uses these items for many years. Their quantity is not changed at once. But the capital is not an endowment given by the nature. It is composed of goods manufactured in the production and often imported from foreign countries. In this sense, capital is internationally mobile and the result of past economic activity. The concept of capital as natural endowment distorts the real role of capital. Capital is a production power accumulated by the past investment.

4. Homogeneous capital

Capital goods take different forms. It may take the form of a machine-tool such as lathe, the form of a transfer-machine, which you can see under the belt-conveyors. It may take the form of oil or iron core. Despite these facts, capital in the Heckscher–Ohlin Model is assumed as homogeneous and transferable to any form if necessary. This assumption is not only far from the reality, but also it includes logical flaw. Capital has a measure, just like anything has weight. How can an amount of various goods be measured?

Usually by a system of prices. But prices are dependent of profit rate. In the Heckscher–Ohlin model, the rate of profit is determined according to how
abundant capital is. If capital is scarce, it has a high rate of profit. If it is abundant, the profit rate is low. Here is a logical circle. Before the profit rate is determined, the amount of capital is not measured. This logical difficulty was the subject of academic controversy which took place many years ago. In fact, this is sometimes named Cambridge Capital Controversies. The conclusion of the controversies was that the concept of homogeneous capital was untenable. Heckscher–Ohlin theorists ignore all these stories without providing any explanation of how capital is measured theoretically.

5. No unemployment

Unemployment is the vital question in any trade conflict. Heckscher–Ohlin theory excludes unemployment by the very formulation of the model, in which all factors (including labour) are employed in the production.

6. No room for firms

Standard Heckscher–Ohlin theory assumes the same production function for all countries. This implies that all firms are identical. The theoretical consequence is that there is no room for firms in the HO model. By contrast, the New Trade Theory emphasizes that firms are heterogeneous.

In spite of all shortcomings pointed out above, Heckscher–Ohlin theory offers a crucial explanation, say the best of all possible explanations, of the basis of international trade.

2.5.3. New Factor Proportions Theories:

Extending Leontief’s view, some of the economists express that it is not only the abundance of factors of production that influence the pattern of international
trade but also the quality of these factors is important. They analyze the trade theory taking the quality factors in their consideration which are human capital, skill intensity, economies of scale and research and development.

Human capital is the result of better education and training and should be treated as a factor input like, physical labor and capital. A country with improved human capital maintains high level of exports of commodities, which are intensity of human capital, compared with other countries.

The skill intensity hypothesis is similar to the human capital hypothesis as both of them explain the capital embodied in human beings. An empirical study (1965, 1971) by Keasing computed the direct skill requirements for production of 1957 manufactured exports and imports for 9 countries and 15 manufacturing sectors. The study revealed that labor is homogenous factor and it is the differing quality of labor in term of skills that determines the pattern of international trade.

The scale of economies hypothesis explains that with rising output, unit cost decreases. The producer achieves internal economies of scale. A country with large production possesses an edge over the countries with regards to export.

Lastly, research and development (R&D) have a positive relationship with the competitive ability of manufacturing industries. A country with large expenditure on R&D possesses a comparative trade advantage. Kurgan and Obstefeld (1994) deal with the process innovation and the produced innovation. The process innovation hypothesis examines how different countries are ranked on the basis of technological level and how good are ranked by technological intensity. The higher ranked countries always maintain an absolute advantage over low ranked countries (Sharan, 2006).
2.6. Impact of Liberalization of Trade on Growth:

A liberal trade regime is an important factor in encouraging economic growth and efficient resource allocation. An open trade regime expands trade and investment options and allows countries to specialize in and exports those products in which they have comparative advantage. Trade barriers to import result in higher prices for imported commodities and cause inefficiency as consumers shift to higher cost domestic substitutes or forgo use or consumption of products they would otherwise prefer (Sharer et.al, 1998).

Trade operates in a diversify ways to sustain the economic development process. It enhances competition and the linked thrust to innovation and specialization, and it provides a significant channel for international technology transfer. Investment climate (both foreign and domestic) of international trade correlated positively with economic growth. When markets are open and are free from all barriers then private investors get better opportunity with reduced uncertainty because these barriers might have restricted their business. Private investment brings intellectual capital and technology, and can also push other aspects of social infrastructure in positive direction. In addition to that, the financial service sectors are also enhanced due to opening up of trade and this can mobilize resources for domestic and foreign investment (Mazumder, 2003). Moreover, trade liberalization increases the variety of goods.

Free trade leads to a more economically rational market structure and this resulted from scale economies and economic of scope that arises in wider markets. Moreover, markets in protected economies are narrow and lack of competitors from the rest of the world fosters oligopoly and inefficiency. Protectionism can
create market power for domestic firms, where under free trade there would be none (Dornbusch, 1992).

The relationship between openness and economic growth has been fully analyzed in many empirical studies. Primary attention has been given to the advantage of outward oriented strategy and to the role of exports in economic performance, it has been argued that exports are the main channel through which the liberalization process can affect the output level and eventually the rate of economic growth, that is, the export –led growth (ELG) hypothesis (Orts et al., 2004).

In addition, liberalization of trade and FDI leads to improvement of productivity by influencing supply side and demand side factors of production or producer behavior. At the impact of demand side factors, a competitive pressure introduced through liberalization can be identified. With liberalization of trade and FDI, imports as well as the number of foreign firms operating in the liberalizing country increases, leading to a greater competitive pressure on domestic firms. Consequently, domestic firms have to improve productivity to survive, and those which can not faced increases competition are forced to exit from the industry. In contrast, domestic firms operating in a protected environment lack competition which results in inefficient production. The supply side impact of liberalization of trade and FDI can be divided in two parts, one on trade liberalization and the other on FDI liberalization. Trade liberalization enables firms to use high quality parts, components, and machinery at lower prices resulting in improved productivity. By contrast protection of firms producing parts, components, and machinery forces them to use low-quality but high price products.
Liberalization of FDI contributes positively to the recipient countries; as multinational enterprises bring not only technologies and management know how but also financial resources which contribute to improvement in productivity and this lead to greater exports, as it tends to enhance competitiveness (Urata, 1994).

The success of trade reform depends on complementary macroeconomic policies. In particular, there are strong and mutually supporting links between trade reforms, an appropriate level for the real exchange rate and a liberal exchange system, because exchange and trade restrictions often acts as substitutes and the benefits of liberalizing one may not be fully realized without liberalizing the other. In one side, an open trade regime is needed so that international price promotes efficient resource allocation for a country with an appropriate exchange rate and a liberal exchange regime. In the other hand, an appropriate exchange rate and a liberal exchange regime are needed so that the tradable sector can exploit its comparative advantages and maintain the momentum of trade liberalization efforts and macroeconomic stabilization (Sharer et.al, 1998).

2.7. Foreign Direct Investment

2.7.1. Definition of Foreign Direct Investment:

There had been several definitions of Foreign Direct Investment in several official resources such as International Monetary Fund and United nations (UNCTAD). FDI is considered as the process whereby resident of one country (the source country) acquire ownership of assets for the purpose of controlling the production, distribution and other activities of a firm in another country (the host country).
The International Monetary Funds balance of payments defines FDI as an investment that is made to acquire a lasting interest in an enterprise operating in an economy other than that of the investor, the investor’s purpose being to have an effective voice in the management of the enterprise.

From the point of view of the United Nations World Investment Report (UNCTAD, 1999), FDI is an investment involving a long-term relationship and reflecting a lasting interest rate and control of a resident entity in one economy (Foreign Direct Investor or parent enterprise) in an enterprise resident in an economy other than that of foreign direct investor (FDI enterprise, affiliate enterprise or foreign affiliate).

The definition of the International Monetary Funds balance of payments will be adopted because all the foreign direct investments in the Sudan don’t affiliate to foreign enterprise.

2.7.2. Trends in Global FDI:

Interested researchers, countries, and international organizations have increasingly recognized the importance of foreign capital to growth. In our dynamic age of privatization, liberalization, and globalization, FDI has emerged as an important form of international capital flow. Recognizing the importance of investment with no borders, the World Bank has devoted its 2005 issue of "World Development Report" to the issue of trade and investment, discussing in detail the importance of foreign capital flow to the economies of the host countries. According to the World Bank, "few countries have grown without being open to trade".

Generally, there is a wide agreement on the importance of openness that leads to FDI flows. However, there is an ongoing debate about the merits of openness.
The debate has been motivated by the recent economic crises in a number of countries of Southeast Asia. Quick and massive movements of short-term portfolio investment that took place in these countries were largely blamed for the crises. Nonetheless, most observers agree to distinguish FDI from short-term portfolio investment because FDI is a long-run investment and therefore is difficult to reverse. Hence, recognizing the importance of openness to economic growth, an increasing number of countries have adopted more liberal policies towards the flow of foreign capital. As a result, FDI inflow to developing countries increased from 0.1 percent of global GDP in 1970 to 3 percent in 2001 (World Bank, 2005).

On the global level, after a period of declining trends, global FDI inflow reached $648 billion in 2004, increasing by 2% over its level in 2003, raising the stock of FDI in 2004 to an estimated level of $9 trillion. Furthermore, there was a large increase in the share of developing countries in FDI inflow. Inflows to developing countries surged by 40%, to $233 billion, while those to the group of developed countries declined by 14%. As a result, the share of developing countries in world FDI inflows has increased to 36% of global FDI, the highest level since 1997 (UNCTAD, 2005). The observed uptrend in FDI was not evenly distributed among different countries of the developing world. While FDI flow into Africa remained stable at $18 billion between 2003 and 2004, Asia and Oceania witnessed a significant upsurge during the same period. A similar significant uptrend in FDI inflow was recorded in Latin America and Southeast Europe.

Factors advanced to explain this increase in FDI flow into the developing countries include intense competitive pressures in many industries of the source countries, higher prices for many commodities, which stimulated FDI to countries that are rich in natural resources, and higher expectations for economic growth. UNCTAD (1996) identifies some of the most important factors leading so such a
surge in global FDI flows. They include the increasing trend in privatization and the resulting foreign firm's acquisition of domestic firms, production globalization, and global financial integration.

Among developing countries, Asia and Oceania region were the largest recipient as well as source of FDI. In 2004 FDI inflow to both regions amounted to $148 billion, $46 billion more than in 2003. This marked the largest increase ever to these regions, with China and India getting the lion share of the increase. China continued to be the largest developing country recipient with $61 billion in FDI inflows. Furthermore, a new destination of FDI has strongly emerged in West Asia with inflows rising from $6.5 billion to $9.8 billion between 2003 and 2004. Countries like Saudi Arabia, Syria and Turkey were identified as the major recipients in that region, receiving more than half of the total inflow to that region. In addition, Latin America and the Caribbean registered a significant upsurge of FDI inflows in 2004, reaching $68 billion – 44% more than its level in 2003. FDI inflows to South-East Europe and the CIS, a new group of economies under the United Nations reclassification, grew at an all-time high rate of more than 40% in 2004, reaching $35 billion.

According to the World Bank (2009), the increase in FDI to developing countries up until 2007 mirrored global trends in FDI flows, surging on the back of strong global macroeconomic performance, high corporate profits, financial liquidity and lower credit spreads, booming stock markets and, more recently, rising commodity prices.

Besides riding on global FDI trends, developing countries have also become more attractive investment destinations, given their growing weight on the global stage, investment opportunities, improved macroeconomic fundamentals, increased openness to foreign investment and improving overall business environment. Over
the 1990s, on average, the emerging world absorbed a quarter of global FDI flows (compared with 12 percent in the second half of the 1980s); that share increased to 29 percent during 2000 - 2009, and reached a record 45 percent in 2009 (figure 1.2). Other projections even expect that, for the first time, the emerging world will absorb more than half of global FDI in 2009.

The geographical distribution of FDI flows to the developing world, however, is uneven. Four countries—the BRICs—have together absorbed 46 percent of FDI flows into all emerging markets during 2000–2008, and 51 percent in 2008 alone. This concentration mirrors the economic weight of these countries in the developing world, and they are expected to remain the focus of foreign investment flows to emerging markets going forward.

By sector, the distribution of FDI to developing countries is also uneven, mirroring global trends. The service sector accounts for just over two thirds of the stock of FDI in emerging markets (mostly in financial services), while the manufacturing and primary sectors account for a quarter and 6 percent, respectively.

According to the World Bank (2009), the financial crisis has severely curtailed private capital flows to developing countries, reversing the upward trends observed over the past few years. Yet FDI flows to emerging markets are proving resilient, and rebounds are anticipated in 2010. FDI has been more resilient than other forms of private capital. However, despite the reduction in global FDI flows, foreign direct investment into the developing world continued to increase in 2008. An additional $63 billion of FDI flowed into emerging markets in that year, equivalent to 3.5 percent of their combined GDP. The largest increase was registered in South Asia (with FDI flows to India rising by more than 50 percent), followed by Latin America and Sub-Saharan Africa. Nearly all developing regions received record levels of FDI inflows in 2008. The high commodity prices that persisted through at
least the first half of that year continued to support investment in resource-rich developing countries, such as Brazil, Chile, Indonesia and Peru.

FDI flows to emerging markets started slowing during the second half of 2008. In the first quarter of 2009, cross-border M&A in the developing world (mostly by developed-country MNEs) declined to $16 billion, compared with more than $30 billion in the previous two years. (FDI through cross-border M&As typically accounts for about 30 percent of all FDI flows into developing countries). In 2009, tight credit conditions, weak global demand and low profitability owing to the recession are certain to limit the ability and willingness of MNEs to expand in the developing world. The World Bank projects FDI flows into developing countries to decline by 34 percent to $385 billion in 2009. Yet, FDI flows to developing countries remained more resilient than flows into industrialized countries in 2009 (where the World Bank estimates FDI inflows shrank by 50 percent).

FDI flows to developed countries grew robustly in 2011, reaching $748 billion, up 21 per cent from 2010. Nevertheless, the level of their inflows was still a quarter below the level of the pre-crisis three-year average. Despite this increase, developing and transition economies together continued to account for more than half of global FDI (45 per cent and 6 per cent, respectively) for the year as their combined inflows reached a new record high, rising 12 per cent to $777 billion (UNCTAD, 2012).

2.7.3. Types of Foreign Direct Investment:

FDI can be classified from the perspective of the investing country and from the perspective of host country, from the perspective of the investor; economists distinguish between horizontal FDI, vertical FDI and conglomerate FDI.
Horizontal FDI is undertaken for purpose of horizontal expansion to produce the same or similar kinds of goods abroad (in the host country) as in the home country. Hence product differentiation is the critical element of market structure for horizontal FDI. On other hand, vertical FDI is undertaken for the purpose of exploiting raw materials (backward vertical FDI) or to be near the consumers through the acquisition of distribution outlets (forward vertical FDI). The third type of FDI, conglomerate FDI involves both horizontal and vertical FDI.

From the perspective of the host country, FDI can be classified into import subsitution FDI and export increasing FDI involves the production of goods previously imported by host country, necessarily implying that imports by the host country and exports by the investing country will decline. This type of FDI is likely to be determined by the size of the host country’s market, transportation costs, and trade barriers. Exporting increasing FDI, on the other hand, is motivated by the desire to seek new sources of input, such as raw materials and intermediate goods.

Another classification to FDI into expansionary and defensive types. Expansionary FDI seeks to export firm-specific advantages in the host country. This type of additional benefits of contributing to sales growth of the investing firm at home abroad. On the other hand, defensive FDI seeks cheap labor in the host country with the objectives of reducing the cost of production (Mossa, 2002).

2.7.4. Determinants of Foreign Direct Investment:

Determinants of FDI vary according to economic development, human capital and absorptive capability. The higher the level of development, the higher FDI inflow will go to the host developing country. The World Investment Report (UNCTAD, 2003) mentioned that, about 75% of total FDI to developing countries
went to countries considered relatively more industrial such as Hong Kong, China, Brazil, Mexico and Singapore. However, other studies show that poorer countries can also attract FDI as long as they provide macroeconomic stability, a realistic exchange rate and industrial reforms.

Governments in developing countries sometimes apply contradictory policies. On one side, FDI flows were desirable, while on the other side, regulations and restrictions imposed by government represented a disincentive for foreign investors, such as minimum local content, equity requirements or explicit performance criteria.

Another determinant of FDI, in developing countries, is the existence of economic policies designed to promote exports and facilitate the establishment of foreign firms. Fiscal incentives such as tax rebates, exemption and financial facilities like loans with favorable interest rates to transnational companies can be applied by the governments of developing countries. Also, a monetary policy may guarantee accessibility to foreign exchange and free capital movements because FDI responds negatively to balance of payments constraints such as restrictions and access to foreign exchange (Galan, 2006).

Other determinants of FDI had been negotiated in the 8th Global Conference on Business and economic in Italy (2008), stated that the determinants of FDI are comprised to two factors, policy and non-policy factors. Non-policy factors include market size, distance, and factor proportion, political and economic stability. Policy factors include openness, product market regulation, labor market arrangements, corporate tax rates and infrastructure. Non-policy related factors relevant to FDI fall into a number of categories. Firstly, market size of the host country, usually measured by GDP, is considered an important determinant of
horizontal FDI, because the return from such investment depend on economies of scale at the firm level. Secondly, the effect of distance and transport costs on FDI is viewed as ambiguous. While they imply transaction costs for investors, FDI may also carry advantage over trade when dealing with distant countries.

Thirdly, differences in factor endowments between countries are often held to encourage vertical FDI because they make possible the exploitation of comparative advantage. Finally, political and economic instability are predict to deter FDI since they creates uncertainty which raises the risk premia on the returns to FDI.

Policy related factors determining FDI also fall in a number of categories. Firstly, openness of domestic economy is influenced by direct FDI restrictions as well as trade barriers. FDI restrictions clearly raise barriers to FDI and likely to influence the choice of multinational enterprises (MNEs) make with regards to the investment location. Two alternative views of the motives for FDI give contradictory predictions regarding the effect of trade liberalization on FDI. The view of FDI and trade being substitute sees “tariff-jumping” as a motive for FDI, and hence trade liberalization should negatively affect FDI. In a liberalized trade environment, exporting goods from the home country is relatively more attractive than FDI as a way to serve the regional market. The other alternative view sees the motive for FDI as MNEs having different affiliates specializing according to the locational advantages of the host country. This applies to vertical FDI where a liberal trade environment is a perquisite for the international division of labor of the firm level.

Secondly, countries discourage FDI by imposing unnecessary costs on business and create barriers to entry. Thirdly, labor market conditions that impose extra costs on investors will tend to curb the inward FDI position of a country. Fourthly,
the impact of tax rates that imposed on corporate. The higher tax rates applied to corporate profits lower FDI return, and this will discourage inward FDI. Finally the availability and quality of infrastructure such as transportation, communications and energy supply, may positively affected inward FDI, because good infrastructure lowers transaction costs thereby affecting comparative and absolute advantage.

2.7.5. Incentives of FDI:

There are certain general factors determine which countries attract the most FDI. These factors include growth size of the market, efficiency gains, political and social stability, macroeconomic stability, foreign investment legislation, cost and skilled manpower, quality and availability of raw materials, tax and other incentives, corruption and quality of bureaucracy, and free trade and regional trade (Capital Markets Consultative Group, 2003).

Most of developing countries think they must not only offer incentives to attract FDI, but also protect their local economies by restricting the way multinational operates. Incentives include tax breaks, import duty exemptions and subsidized land. Although developing countries give out incentives to attract foreign investment, they are often wary of multinational companies. Some studies found that, both incentives and restrictions placed on foreign capital are largely ineffective. They are frequently counterproductive, costing governments million of dollars annually, protecting inefficient player and lowering living and productivity standards (Farrel, 2004).

2.7.6. Theories of Foreign Direct Investment:

There are numbers of theories explaining FDI. Some of these theories based on imperfect market condition and a few of them are based on imperfect capital
market. The others take noneconomic factors into account. Others explain the emergence of MNCs exclusively among developing countries (sharan, 2006 & Paul, 2008).

2.7.6.1. MacDougall-Kemp Hypothesis:

One of the earliest theories was developed by G.D.A MacDougall (1958) and subsequent elaborated by M.C Kemp (1964). This model assumes two countries, one being the investing country and the other being the host country and the price of capital being equal to its marginal productivity. They explain that capital move freely from a capital abundant country to a capital scarce country and in this way the marginal productivity of capital tends to equalize between two countries. This leads to improvement in efficiency in the use of resources that leads ultimately to an increase in welfare. Although the output of investing country decreases in the wake of foreign investment outflow but national income will not fall because of receiving returns on capital times the amount of foreign investment. So long as, the income from foreign investment is greater than the loss of output, the investing country continues to invest abroad because it enjoy greater national income than prior to foreign investment. The host country witnesses increases in national income as a sequel to greater magnitude of investment, which is not possible in the absence of foreign direct inflow.

2.7.6.2. Industrial Organization Theory:

This theory based on an oligopolistic or imperfect market in which the investing firm operates. Market imperfection arises in many cases, such as product differentiation, marketing skills, proprietary technology, managerial skills, better access to capital, economies of scale, government imposed market distortion and so on. Such advantages confer on MNCs an edge over their competitor in foreign
location and thus help to compensate the additional cost of operating in an unfamiliar environment.

One of the earliest theories based on assumption of an imperfect market was presented by Stephen Hymer (1976). Hymer ushers, a multinational firm is a typical oligopolistic firm that possesses some sort of superiority and that looks for control in an imperfect market with a view of maximizing profits. To achieve this, international firm must have specific advantages. From Hymer point of view, specific advantages are mainly the technological advantages that help the firm to produce a new product different from the existing one. It is in fact related to the possesses of knowledge which help in developing special marketing skills, superior organizational and management set-up and improved processing.

2.7.6.3. Location-Specific Theory:

Hood and Young (1979) stress upon the location-specific advantages. They argued that since real wage cost varies among countries, firms with low cost technology move to low wage countries. Again, in some countries, Trade barriers are created to restrict import. MNCs invest in such countries in order to start manufacturing there and evade trade barriers. Sometimes it is availability of cheap and abundant raw material that encourages the MNCs to invest in the country with abundant raw materials.

2.7.6.4. Product Cycle Theory:

This theory was developed by Raymond Vernon in the end of 1960. Vernon developed a four stage model assuming that the exports effects of the product innovation are determined by the technical and lower cost abroad. The four cycles that included in the life cycle model are, the first cycle is that United States achieves export monopoly in a new product. The second cycle is that foreign
production of this product begins. The third stage, foreign production of this product becomes competitive in export markets and the fourth cycle is that United States becomes an importer of this no-longer- new product.

Vernon postulated that U.S producers will first produce a new product in United States, in this first stage U.S producers have a monopoly in export market and they proceed to build up sales with no concern for foreign competition. During the second stage, producers in other industrial countries start to manufacture the product whose design and production is now standardized. Consequently, the overall growth rate of U.S exports declines. During the third stage, foreign producers display U.S exports in the remaining export markets. Finally foreign producers achieve sufficient competitive strength arising from economies of scale and lower cost to export to U.S market.

2.7.6.5. Internalization Approach:

Bukely and Casson (1976) assume market imperfection, but imperfection in their point of view, is related to the transaction cost that is involved in the intra-firm transfer of intermediate products such as knowledge or expertise. In an international firm, technology developed at one unit is normally passed on to other units free of charge. This means that transaction cost in respect of intra-firm transfer of technology is almost zero, whereas such costs in respect of technology transfer to other firms are usually exorbitantly high putting those firms at disadvantage.

2.7.6.6. Eclectic Paradigm:

Dunnings eclectic paradigm is a combination of the major imperfect market based theories of FDI, that is, industrial organization theory, internalization theory and location theory. It postulated that, at any given time, the stock of foreign assets
owned by a multinational firm is determined by a combination of firm special or ownership advantage (O), the extent of the location bound endowments (L), and the extent to which these advantages are marketed within the various units of firm (I). Dunning is conscious that configuration of the O-L-I advantages varies from one country to the other and from one activity to the other. Foreign investment will be greater where the configuration is more pronounced.

2.7.6.7. Currency Based Approach:

This theory based on imperfect foreign exchange and capital market. One such theory has been developed by Aliber (1971). He postulated that internationalization of firms can be explained in terms of the relative strength of different countries. Firms from a strong currency country move out to a weak Currency country. In a weak currency country, the income stream is fraught with greater exchange risk. As a result, the income of a strong currency firm is capitalized at a higher rate. In other words, such a firm is able to acquire a large segment of income generation in the weak currency country corporate sector.

The Aliber’s hypothesis had been examined by empirical testing. FDI in the United States of America, Canada and the United Kingdom has been found to be consistent within the hypothesis. However the theory fails to explain why there is FDI in the same currency area.

2.7.6.8. Politico-economic Theories:

The politico-economic theories concentrate on political risk. Political stability in host countries leads to foreign investment there in. As the same time, political instability in the home country encourages investment in foreign countries.
2.7.7. The Impact of FDI on Growth:

Theoretically, it had been shown that FDI boost economic growth through technology transfer and diffusion, spillover effects, productivity gains, and introduction of new processes, managerial skills, and know-how to host countries (Batten et al., 2009). These factors are essential for developing countries to industrialize, develop, and create jobs attacking the poverty situation in their countries. As a result, most developing countries recognize the potential value of FDI and have liberalized their investment regimes and engaged in investment promotion activities to attract various countries (Athukorala, 2003). FDI enhances economic growth indirectly where the direct transfer of technology augments the stock of knowledge in the host country through labor training and skill acquisition, new management practices and organizational arrangements (DeMello, 1999). Also, attracting more FDI flows to a country should promote domestic economic development since such inflows supplement domestic capital stock, expand market access and help accumulate and improve human capital (Sarkar et al., 2009). Recent researchers turn their attention toward whether FDI promotes economic growth given certain social and economic conditions. These conditions are a sufficient level of human capital and a well-developed financial system. Well developed financial markets are crucial to facilitating investments by creating economies of scale for investors and allocating capital to its most productive use (Wang et al., 2008).

In addition, FDI is supposed to raise a country’s output and productivity by promoting the more efficient use of existing resources and by absorbing unemployed resources. The relationship between FDI and domestic investment had been examined and the results found that, FDI is expected to be complementary to domestic investment if it is oriented to high technology sectors, and to substitute
for domestic investment if it directly competes with local firms (Sekkat, 2004). FDI may produce a crowding out effect in domestic firms, if the foreign investment occurs in branch in which domestic firms are already active, the crowding out effect may appear for two reasons. The first reason is that harsher competition may discourage more domestic firms from entering the market or drive the less efficient ones out of the market and the other reason is that, interest rate is likely to rise if foreign firms call on to the local capital market. If FDI occurs in a new activity branch, the only relevant mechanism is the second one, which makes the crowding-out affect less likely (Cecchini, 2008).

Many recent studies focus on these negative impacts on domestic investments. According to the UNCTAD (1999), the crowding-out effect appears in some countries from Sub-Saharan Africa and Latin America. Another theoretical model had been formulated by Agosin and Mayer (2000) in which the impact of FDI on domestic investment are allowed to vary according to the country under consideration, according to domestic policies that pursued, according to the nature of FDI flows (i.e. in existing activities or in new activates) and according to the sector depending on the technology, if the FDI take place in a high technical industry, it is expected to be complementary to domestic investment whereas if the FDI generates direct competition for existing local firms, substitution is expected. The study uses a panel of 32 DCs over the period 1970-1996 to test the model. They detect a positive impact of FDI on domestic investment in Asia (crowding-in effect) and a negative impact in Latin America (crowding-out effect) and a neutral effect for Africa.

Nevertheless, empirical evidence on the growth consequences of FDI inflows in developing countries is ambiguous and mixed at best. The results vary depending on many factors including the particular host country studied, the time
period examined, the data used among others. Some researchers also cast some theoretical doubt on the growth promoting effects of FDI inflow. They argue that FDI inflows may not serve the development needs of many developing countries and could perhaps hamper growth due to crowding out domestic savings, creating enclave economies, and adverse affecting the social and cultural fabrics of the host countries (Sarkar et al., 2009). Another negative impact of FDI on host economy that FDI may harm the host country, for instance when foreign investors claim scarce resources or reduce investment opportunities for local investors. There is also some concern that no positive knowledge spillover may finally occur within developing countries, because multinationals will prove able to protect their firm specific knowledge, or because they may buy their inputs from foreign rather than local suppliers (Herzer et al., 2006).

2.7.8. Trade policy and FDI:

The effect of liberalization on FDI had been shown by Blomstrom and Kokko (1997), they showed that trade liberalization and a reduction in investment restrictions have different effects on FDI, depending on the host country’s motives for wanting to engage in FDI. There is the tariff-jumping argument, in which trade and factor mobility are viewed as substitutes. The other view is that the motive for FDI is the exploitation of intangible assests in the host country. Trade liberalization is likely to decrease intra-regional FDI flows if the tariff jumping argument is valid, because exporting from the home country becomes more attractive than FDI as away of saving the regional markets. But, if the motivation behind FDI is the exploitation of intangible assests, then a reduction in trade barriers can enable multinationals to operate more efficiently across international borders. This is specially the case for vertical FDI. The net impact of liberalization is therefore
determined by the structure and motives for pre-existing investment (Sekkat et al., 2004).

Cecchini (2008) stated that FDI flows are just like trade flows, an integral part of the process of opening up a country's economy. Both trade and FDI are considered to boost economic activity. International trade allows the various countries to increase productivity because it allows them to specialize according to their comparative advantages. FDI flows increase the capital stock and therefore, contribute to productivity improvements. Second, recent advances in endogenous growth theory put the stress on the crucial importance of research and development and human capital for growth. According to this view international trade and FDI flows are considered as vectors allowing the diffusion of technical progress.

The growth enhancing effect of FDI is not automatic but depends on various country specific factors. One of the important factors is the nature of trading policy regime in host countries. This view had been explained by Bhagwati in 1978, he argued that FDI contributes to growth by enhancing economic efficiency and that this effect is larger in economies that promote outward oriented trade policies (export promotion) relative to those that pursue inward oriented strategies (import substitution). A number of studies have tested the "Bhagwati hypothesis" empirically and have found support of it (Nourzad, 2007). The explanation of Bhagwati hypothesis is that, in an import substitution regime, FDI (as well as domestic investment) mostly take place in sectors (mostly characterized by high capital intensity in production) where the host developing country does not have comparative advantage. Moreover, FDI becomes an avenue for foreign companies to maintain their market share and to reap the extra profits, the economic rent, created by the highly protected domestic market. On the other hand, the export promotion regime, which aims to achieve neutrality in incentives, is superior to the
(IS) regime in reaping gains from FDI. Under the (EP) regime the main incentives for FDI in a given host country are the relatively low labor cost and the availability of raw materials. This allows foreign investors to operate in an environment that is relatively free from distortions. This also leads to the output expansion in internationally competitive and export-oriented product lines. Moreover, the production of firms in an (EP) regime is not limited by the size of domestic market and has the potential to reap economies of scale through international market penetration (Kohpaiboon, 2002).

2.8. Conclusion:

The chapter gives an overview of the theoretical framework of the study including the theories of economic growth focusing in neoclassical endogenous growth theory and its evolution through time. It also explains the policies of economic development such as inward and outward strategies. Moreover, this chapter deals with the principles of international trade theories that explain why countries trade, the gain from trade and the effect of trade liberalization on growth. In addition, the chapter explores the foreign direct investment. Its definition, types, determinants, incentives, investment theories and its impact on economic growth. Furthermore, it examines the relationship between trade policies and flows of FDI.

The main findings of this chapter are that, trade liberalization can sustain economic development. Many empirical studies discussed the advantage of outward-oriented strategy and the role of exports in economic performance that export is the main channel through which the liberalization process can affect the output level and eventually the rate of economic growth. Also, imports leading to a greater competitive pressure on domestic economy, consequently domestic firms
have to improve their productivity to survive, and those which can not faced increase competition are forced to exit from industry.

The other main finding is that, most of studies argued that FDI investment boost economic growth through technology transfer, productivity gains, introduction of new managerial skills, know how to the host economy and creating jobs. Also, attracting more FDI to a country should promote domestic economic development. While some of recent studies focuses on the negative impacts of FDI on domestic investment especially the crowding out effect that appeared in some countries. Some theoretical model argued that the impact of FDI on domestic investment is allowed to vary according to the country under consideration.

The next chapter will explains the Sudan economy focusing on the trade liberalization and foreign direct investment flows during the study period.
CHAPTER THREE

THE SUDAN ECONOMY: WITH SPECIAL REFERENCE TO TRADE LIBERALIZATION AND FOREIGN DIRECT INVESTMENT

3.1. Introduction:

The Sudan is considered one of the richest countries in the central region in Africa – a fact which makes it a focus for many nations of the world. These natural and human resources have not been fully exploited due to the lack of available possibilities – a fact that slows down its growth and development. This has enforced the government situation to different ways which could help in utilizing these resources. One of these means adopted by the government is the policy of economic liberalization especially the liberalization of foreign trade. It has also encouraged to draw in more and more foreign investment through providing facilities and guarantees and the adoption of the necessary policies to make these means fruitful.

The present chapter is divided into seventh sections. Sections (3.2), (3.3) and (3.4) examine some features of the Sudan economy and the objectives of development plans that had been taken by the Sudanese government. It also explains real growth rate of GDP during the study period respectively. Section (3.5) explains the trade liberalization policy in the Sudan and the procedures that Sudan had been taken to join the WTO. It also examined the foreign trade performance in the Sudan and trade openness during the study period. Section (3.6) deals with the foreign direct investment in Sudan discussing the investment climate, the various investment laws and both positive and negative effects of the
investment in the Sudan. Also it tackled a descriptive analysis of foreign direct investment and the sectoral distribution during the period 1970-2010. Section (3.7) is the conclusion.

3.2. Overview of Sudan Economy:

Sudan has to be the largest country in Africa with total land area estimated to be (2.5 Million square kilometers) before the separation of southern Sudan. Now, after the separation its total land area became 1882000 kilometers with population number of 33,419625 million . With its vast geographic area and varied natural resources, Sudan holds great economic potential. These natural resources include water resources, different climate conditions, petrol and minerals, various crops, large number of live stock and human resources.

The agricultural sector in Sudan is the main sector of the economy. It contributes a major part of the country’s Gross Domestic Product and provides a living for a large group of population by providing almost all the domestic needs of stable food (Abdel Karim & Kirschke, 2003). Its contribution to the GDP of Sudan is 45% on average. In addition to that this sector absorbs about 80% of labor force (Ali, 1985) and 90% of the country’s exchange earning comes from it up to 1999 when the development of oil export industry had led to substantial shift in the economic structure. The importance of agricultural sector in Sudan was clearly seen from the independence period in 1956, the structure of the Sudan economy at that period was dual in nature with a vast traditional sector and small modern sector. This table summarized the sectoral composition of the GDP during the period 1955/56:
Table no (1). Sudan: 1955/1956 GDP Compositions (At Current Prices)

<table>
<thead>
<tr>
<th>Sector</th>
<th>GDP (Millions Ls)</th>
<th>GDP Share%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>172.6</td>
<td>60.7</td>
</tr>
<tr>
<td>Industry</td>
<td>3.0</td>
<td>1.1</td>
</tr>
<tr>
<td>Construction</td>
<td>16.2</td>
<td>5.7</td>
</tr>
<tr>
<td>Transportation</td>
<td>37.6</td>
<td>13.2</td>
</tr>
<tr>
<td>Public Utilities</td>
<td>1.0</td>
<td>0.4</td>
</tr>
<tr>
<td>Governments</td>
<td>17.2</td>
<td>6.0</td>
</tr>
<tr>
<td>Rental state</td>
<td>8.2</td>
<td>2.9</td>
</tr>
<tr>
<td>Others</td>
<td>28.4</td>
<td>10.0</td>
</tr>
<tr>
<td>Total</td>
<td>284.2</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Central statistical Bureau.

From this table, it appears that the Sudanese economy was dominated by agricultural which contribute about 61% of GDP. The contribution of industry sector is very weak, 1.1% of GDP, with the services sector contribution by 37.9% of GDP. However, the development of oil export industry has led to shift in the economic structure.

With all these resources, Sudan is classified as one of the developing but least developing countries. Sudan witnessed continuous economic deterioration and in some years recorded negative growth rates with high rate of population growth.
resulting in deterioration in the real income. In the 1950s, the economy of Sudan grew at an increasing rate though at a low level, inflation was unknown; the exchange rate of the Sudanese pound was fixed at about one Sudanese pound to 3.53 United States dollars. And both the balance of payments and government budgets were in general good shape. In the 1960s, the economy continued in its growth path, but at a much reduced rate. Similarly, as in the preceding period, inflation and exchange rate regimes were stable and though the balance of payments and government budgets recorded some deficits (Bior, 2000).

In the 1970s, Sudan economy suffered from economic recession and inflationary pressures. Foreign exchange rate was stable until 1978 where it starts to fluctuate. The Sudanese government implemented the devaluation of Sudanese currency. The reason of these fluctuations can be attributed to the continuous deficits in the balance of payments and government budget. Also, the resurface of some inflationary tendencies is another reason. Consequently, the economy had been facing some major crisis like sluggish economic growth (Mahran, 1996).

In 1980s the economy was on the descent. GDP growth averaged 0.5% against population growth rate of 3.1%, the inflation rate was very high, and both the balance of payments and government budgets were in deficits. In addition to this, the accumulated external debt of the country was estimated to be US $ 15 million (Bior, 2000). During this whole period, deficits of balance of payments and government budget became the main characteristic feature. Bior (2000) explained many internal and external factors responsible of this steady deterioration of the economy. The internal factors are unstable economic polices, ill-conceived plans, poorly executed and managed projects, irrational resource allocation, neglect of maintenance of capital stock, inadequate and inconsistent implementation of economic polices and negative national savings. Over and above of these,
numerous political, social and natural problems accentuated the economic situation. The war in South Sudan had continued to drain scarce resources and health development efforts. In addition, the drought which happened at the early 1980s together with the war had led to large-scale population movements, which have seriously disrupted traditional production. The external factors affected Sudanese economy include the steady deterioration in terms of trade, the high protectionist barriers imposed by the industrialized countries, sharp increase in prices of capital goods and other imports and the sluggish demand for primary products by the industrialized countries because of the recession these countries were facing in the 1980s.

During the period 1990s Sudan economy witnessed several reforms by the government of Sudan without any intervention from international institutions, and the economy has responded positively to these reforms. One of these reforms is a medium term economic salvation program (1990-1993), which advocating national self-reliance, was formulated to reactive program, and then merged with National Economic Salvation program NES (1992-2002) which contained a comprehensive economic policy packages to liberalize the economy and promoting the free enterprises system with the ultimate objectives of promoting production and growth, economic and price stability, full employment and eliminating budget trade deficit.

The performance of Sudanese economy in 1990s was growing at an annual average rate estimated to be 6.6%. While, annual growth of total population is about 3.1%, where the total population number is about 35.300 million (the 2003 estimates). Therefore, GDP per capita had been growing at an average rate of 0.2% for the period 1960-1999 (Ali and Elbadwi, 2002). The inflation rate declined from 130% n 1996 to 16.2% in 1999, and the trade balance deficit decreased to 634$
million in 1999 compared to 1328$ million in 1998 as a result of oil export. The balance of payments situation improved and registered surplus; the exchange rate was unified and started to sustain stability (shawir, 2010).

The second half of 1990s and first years of 2000s witnessed an improvement in all macroeconomic indicators growth, as a result of economic reforms that accompanied with favorable weather conditions that led to improvement in agricultural sector, in addition to investment in oil and oil-related industries and services. The inflation rate declined; the balance of payments situation improve due to oil exports and foreign currency inflows that contributed to imports finance, which positively reflected on capital and financial account, different exchange rate was unified i.e., black market, parallel market, custom and exports. The economic stability had led to confidence from the external part that enhanced the relations and economic cooperation with the regional and international financial institutions. So, the GDP growth rate average registered 7.2% and reached 9.3%, 10.5%, and 6.2% in 2006, 2007, 2008 respectively. The decline in GDP growth rate was attributed to the fall in industrial sector from 23.2% to 0.8% (shawir, 2010).

The next section, discusses the development plans which had been followed by the state and their objectives since the 1970s period until now, as a trail to reflect the reforms which had been carried out and their effectiveness in improving the economic status.

3.3. Objectives of Development Plans:

This section deals with the objectives of development plans that were implemented by the government since 1970. By taking in account that agriculture is the leading sector of Sudanese economy, and that development of this sector require the development of the other sectors.
Five-Year Plan 1970/1971-1974/75:

The five-year plan aimed at an annual growth rate of 7.6% GDP during the plan period, and the improvement of people well being via an increase of 6.2% per annum in per capita income, and improvement of social services such as education, health and security. The plan included other objectives like realization of a surplus in balance of payments via an expansion in exports (Mahran, 2002).

Six-Year Plan 1977/78-1982/83:

The six-year plan was the first phase of a prospective plan extending over eighteen years (1977/78-1994/1995), which was to be implemented in three phases of six years, the primary objectives of six year plan were (Mahran, 2002):

- The achievement of annual real growth rate of 7.5% with agricultural continuing to be the leading sector of the economy that development in other sectors would be interlinked with expansion in agriculture.
- The realization of substantial increase in real per capita income through the development of both the modern and the traditional agricultural sub-sector.
- The development and modernization of the traditional agricultural sub-sector with the conversation of natural resources.
- Developing industry as a complementary sector to agriculture, giving priority to agro-industries and import substitution.
- Attaining self sufficiency in selected food and other agricultural commodities as well as agricultural inputs.
- The achievement of real growth of just over 11% per annum in exports, with an expansion in production of oilseeds and grains to reduce Sudan’s vulnerable dependence on cotton exports, and
- The consolation and expansion of basic infrastructure particularly in the field of transport and communications, power resources, marketing and storage facilities.

**First public investment program 1978/79-1980/81:**

Short-term strategy was designed along the lines of Economic Recovery and Stabilization program agreed upon with the World Bank and the IMF in June 1978.

The main objectives of this strategy were (Mahran, 2002):

- Completion of projects already under implementation.
- Rehabilitation of already completed projects, the productivity of which was declining, with emphasis on export oriented projects.
- Expansion of the national infrastructure, especially power and transport, and
- An annual real growth rate of 64% in GDP.

**Third Three-Year program 1982/83-1984/85:**

The government continued its efforts to consolidate the process of economic stabilization and recovery. Thus, major investment allocations during the three years of the third public investment program were directed to correct the imbalances in the economy and to reinforce economic measures to the full realization of the program objectives, these are (Mahran, 2002):

- An average growth rate in GDP of 4% Per annum over the programs period.
- Completion of the economically viable on going projects.
- Rehabilitation of the productive capacity of the economy, especially in the agriculture and industrial sectors.
- Maximizing exports and speeding up efficient import substitution with a view to achieving a balance in Sudan’s foreign trade.
- Provision of necessary infrastructure and efficient operation of the productive sectors.
- Encouraging greater participation by private sector in investment and economic development, and
- Speeding up the exploitation of natural resources, specially oil and minerals.

**Four-Year Salvation, Recovery and Development Program 1988/89-19991/92:**

Since the mid 70s, the Sudanese economy has experienced a steady deterioration as manifested in the declining real per capita income and welfare, substantially low and decreasing level of investment, intense inflationary pressures, severe balance of payments difficulties, and mounting external debt and debt servicing obligations.

The economy faced these serious problems, so in recognition of this, the Four-Year Salvation Recovery and Development Program was initiated with a view to effectively address these problems in an a comprehensive and systematic framework, its basic objectives were (Mahran, 2002):

- Inspiration and stimulation of the patriotic spirit and the security of work.
- A GDP average real growth rate of at least 5% per annum.
- Provision of basic human needs such as food, water, clothing, shelter, health, education, security and transport.
- Food security for rural and urban population.
- Social justice through reduction of disparities in income and wealth, as well as balanced regional development with emphasis on the least developed regions.
Three-Year National Economic Salvation Program 1990/91-1992/93:

This program had been chosen as a medium-term framework in order to stop the deterioration in the economy and to lay the foundation for a sound recovery that would take the economy back onto a path of sustained growth and financial stability. The general objectives of the program are (Mahran, 2002):

- Revitalization of the Sudanese economy through reallocation of resources towards production.
- Enhancement of the role of private sector, whether rational or foreign, to play a more active role in achieving the objectives of the program and to reorient financial, economic and industrial structures with a view to creating an environment more conducive to private sector participation, and
- Maintenance of social balance by protecting the poor during the adjustment period.

Despite all these programs, the Sudanese economy witnessed a steady decline which manifested itself in the deterioration in per capita income, a substantially low and declining level of actual investment, and intensive inflationary pressure; severe balance of payments problems and a mounting external debt and debt servicing obligations. This poor performance of the economy may be referring to a multitude of local and international factors which we have mentioned above. The government of Sudan tried to reform these situations by introducing a new strategy for development which is the National Comprehensive Strategy, extended from 1992 to 2002. This strategy was put to achieve many macroeconomic targets that help to promote balanced development and application of economy liberalization policies. The most
important guidelines with respect to foreign investment could be summarized in the following (Alsyed, 2002):

- Attracting loans and foreign aid for investment in all sectors, especially in the agricultural sector and the energy sector.

- Openness to the world in order to restore the confidence of foreign investors and to activate participation in the investment guarantees agencies, global and regional specialized organizations.

The plans of development had been failed in attaining most of its goals and this can be attributed to some reasons. These reasons are, the lack of efficient administrative system in Sudan, lack of scientific researches and studies in the field of economic planning, lack of local funding, lack of attractive climate for foreign investments, lack of effective supervision on the budget which has great impact on the creation of development process and also the volatility of political systems in Sudan and the inability of these systems to implement continual planning process.

3.4. The Real Gross Domestic Product growth Rate:

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

During the 1970s it had 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 could be related to the deterioration in the agricultural sector during these
years as a result of the wave of drought and desertification which hit the country (Alsayed, 2002), while RGDP growth rates registered in other year’s 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, where it registered negative value (- 5.5%). This period had been characterized by a somewhat stability in the RGDP growth rates. This situation had been attributed to the increase in the volume amount of the FDI in Sudan and consequently to its increase in its contribution to the GDP. Moreover, as well as 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.

During the period (2000-2010), the RGDP growth rate was positive due to the contribution of the oil sector where the average growth rate had grown to (7.1%). In this period the RGDP growth rate had been better than the previous periods. 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 researcher depending on Real GDP data by million Sudanese pounds.

3.5. 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 subsides, restructuring of taxes and privatization (Ministry of Finance and Economic Planning, 1990). Sudan’s trade regime had opened up considerably since the reform of the 1990s, when the government reduced tariffs, abolished most export monopolies and eliminated exchange rate controls. Further liberalization is expected since the country has been in accession negotiations with the WTO.
following its application for membership in October 1994 (World Trade Indicators, 2009).

In the next part we shall discuss the steps the Sudan had adopted to join the world trade organization (WTO) which is considered as a very crucial step where the Sudan can benefit from in its trade liberalization and also to enrich its theoretical literature for joining the organization.

3.5.1. Sudan Procedures to Join WTO:

Responded to the developments and events experienced by the world economy in that time, especially with the continuation of the Uruguay Round, the Council of Ministries issued a resolution in October 1994 decision to Sudan accession of the World Trade Organization, the resolution stated that the Ministry of Foreign Trade is the fulcrum.

Therefore, the ministry had submitted a request to the secretariat of the organization requesting accession, and the organization had accepted the request of Sudan as a member of observers and Sudan asked according to the article “12” from the protocol of accession to prepare a memorandum on foreign trade regime.

According to that, the ministry of foreign trade coordinated with others related institute to prepare memorandum presented to the council of ministries and approved by resolution 490 in its No.25 dated August 16, 1998, and the government constructed a ministerial committee to review the final draft and submit it to the secretariat of the WTO at the end of December 1998, it distributed to member states in January 26, 1999 the figure given (0269-99). It includes :(WTO, 2008 & Mohamed, 2008)
1- Memorandum on foreign trade regime (WT\ACC\SDN\3). Symbol of this document in accordance with the classification of the organization secretariat. It is considered as one of important documents of accession in the first stage because it reflects the detailed description of the current statues of the foreign trade regime in the Sudan and economic polices and applicable laws and regulations.

2- It represents the first phase of accession and set of questions amounted 582 inquiry.

3- The answers to the first set of questions that had been received from Japan, Canada, Australia and the European Union symbol of this document is (WT\ACC\SDN\4). That is a set of questions amounted to 112 questions received from the governments of Canada, Japan, Australia and European Union, which included questions on the foreign trade regime that has been mentioned in the first memorandum.

4- A group of Sudanese law (38) Act after translated to English language.

5- The understanding of the foreign trade regime requires from the Sudan to inform WTO members about the existing laws of the Sudan which are directly linked to WTO trade. The request of the secretariat of organization of Sudan has been translated into approximately 38 legislations to the English languish, which is one of the three official languages of the World Trade Organization.

6- The document answers to the second set of questions. A symbol of this document (WT\ACC\SDN\6) representing 142 questions received from the work team and included detailed questions about Sudan’s foreign trade regime it include more than 30 questions on the trade related and intellectual property rights. After two and a half year Sudan answered these questions
and handed over to the secretaries of the organization, which had distributed to member states on January 23, 2003.

7- Action plan for the application of the argument on sanitary and phytosanitary (SPS). A symbol of this document (WT\ACC\SDN\6) given figure (2772-03) which shows Sudan action plans for the implementation of convention SPS which relating to the protection of human health, animal and plant, this document submitted to the secretary and it distributed to the member states 23 May 2004.

8- An illustrative list (Requirements of the application), a symbol of this document (WT\ACC\SDN) – (given figure (03-2771)) is an illustrative list of requirements for the implementation of the sanitary and phytosanitary for the protection of human health, animal and plant and, this document illustrates legislation and local regulations and developments achieved and compliance and compatibility done by the Sudan for the implementation of the convention. And then distributed to the members of the organization on 23 May 2004.

9- Action plan for the application of the agreement on technical barriers to trade. This document shows action plans for the application of the convention Sudan technical barriers to trade.

10- An illustrative list (requirement of the application). An illustrative list of requirements for the implementation of the technical barriers to trade on standards and technical specification, and this document explain legislation and local regulations and development achieved compliance and compatibility done by the Sudan for the implementation of the convention. Been distrusted to the members of the organization on 23 May 2004, Sudan prepared more than 20 memorandums and documented by the end of 2006.
Sudan joining to WTO has its effects on the economy either positive or negative one. Here we will explain these two effects (Gamil, 2002):

3.5.1.1. Possible Positive Impacts of Joining WTO:

- Increasing the Sudan exports due to lowering of custom duties of the member countries.

- Removing subsidy in the industrial countries give incentives to the food producers in Sudan by making their products competitive.

- Lowering custom duties will lower costs of living through obtaining good and cheap goods.

- Making use of the technical assistance given by WTO and other international organizations.

- By joining the international and regional economic and commercial groupings in the era of globalization, Sudan will not isolate itself.

- Liberalizing trade in agriculture leads to lowering taxes on exports crops resulting in increasing the producer’s income which gives him incentives to increase production.

- Removing subsides from industrial countries production and export of wheat, horticultural, and animal products will increase their prices, and this will encourage local producers to increase their production for local consumption and exportation.
3.5.1.2. Negative Impacts of Joining to WTO:

- Trade liberalization and door openness may lead to unfair competition between countries that are different in stages of growth, and differ in economic abilities.

- Market dumping (of high quality and low price goods) harms developing countries national industry. In fact these imported goods are subsidized directly or indirectly.

- Removing the subsidy of some sectors will has a negative impact on producers and consumes (e.g. electricity and water).

- Increasing cost of development as a result of applying TRIPS will raise the cost of importing technology tools, and expenditures connected with using trade marks.

  Until now Sudan has not joined to the world trade organization, as joining this organization requires serious by the government. Moreover, requires existence of good external relations between Sudan and foreign world.

3.5.2. Foreign Trade Performance in the Sudan:

The Sudan depends on traditional agricultural crops for exports (irrigated, rain-fed traditional and livestock sub sectors), with a small contribution from manufacturing and mining. Agricultural exports include cotton, sesame, gum Arabic, oil seeds, sorghum and livestock products (live animals, meat, hide and skins), while manufacturing and mining exports include sugar, molasses and gold. With the discovery of oil in 2000, Sudanese export composition and value changed drastically. Non oil products became insignificant in value and as a percentage of
total exports. Oil exports have become predominant (relative to non oil exports), amounting to 74.8% of all Sudan exports (Ahmed, 2010).

With regard to imports, the main categories (crude petroleum and its derivatives, wheat, flour and beverage and machinery and vehicles) continued to dominate until to 1999. While the petroleum and its derivatives declined, especially after 1995 and even more so after 1999, that of main foodstuff items (wheat, flour and beverages) remained robust. A rise in the shares of iron and steel reflects the invested activity in the construction sector until 1998. Imports competitive to local products (such as plastic materials, fertilizers, tires and tubes, textiles, jute and sacks, paper, board printed matter) altogether accounted for between 9 and 14 percent of total imports during 1990 and 1998 (UNDP, 2006).

External sector of Sudan has been facing different problems over the period of the study as shown in the next table:

**Table no (2). Exports, Imports of Goods and Trade Balance of Sudan During the period 1970-2010.**

<table>
<thead>
<tr>
<th>Years</th>
<th>Exports of Goods</th>
<th>Imports of Goods</th>
<th>Trade Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>281.0</td>
<td>286.1</td>
<td>-5.1</td>
</tr>
<tr>
<td>1971</td>
<td>314.5</td>
<td>329.8</td>
<td>-15.3</td>
</tr>
<tr>
<td>1972</td>
<td>342.4</td>
<td>336.9</td>
<td>5.5</td>
</tr>
<tr>
<td>1973</td>
<td>419.2</td>
<td>433.8</td>
<td>-14.6</td>
</tr>
<tr>
<td>1974</td>
<td>330.7</td>
<td>707.4</td>
<td>-376.8</td>
</tr>
<tr>
<td>1975</td>
<td>411.2</td>
<td>1028.9</td>
<td>-617.7</td>
</tr>
<tr>
<td>1976</td>
<td>526.9</td>
<td>975.4</td>
<td>-448.5</td>
</tr>
<tr>
<td>1977</td>
<td>633.3</td>
<td>1075.7</td>
<td>-442.4</td>
</tr>
<tr>
<td>1978</td>
<td>558.8</td>
<td>1123.7</td>
<td>-564.9</td>
</tr>
<tr>
<td>1979</td>
<td>625.3</td>
<td>954.6</td>
<td>-329.4</td>
</tr>
<tr>
<td>1980</td>
<td>514.6</td>
<td>1576.4</td>
<td>-1061.7</td>
</tr>
<tr>
<td>1981</td>
<td>494.1</td>
<td>963.0</td>
<td>-468.9</td>
</tr>
</tbody>
</table>

83
<table>
<thead>
<tr>
<th>Years</th>
<th>Exports of Goods</th>
<th>Imports of Goods</th>
<th>Trade Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1982</td>
<td>425.6</td>
<td>933.7</td>
<td>-508.1</td>
</tr>
<tr>
<td>1983</td>
<td>437.1</td>
<td>1354.5</td>
<td>-917.5</td>
</tr>
<tr>
<td>1984</td>
<td>377.8</td>
<td>1146.7</td>
<td>-769.0</td>
</tr>
<tr>
<td>1985</td>
<td>193.3</td>
<td>680.5</td>
<td>-487.3</td>
</tr>
<tr>
<td>1986</td>
<td>181.7</td>
<td>960.3</td>
<td>-778.6</td>
</tr>
<tr>
<td>1987</td>
<td>335.3</td>
<td>580.6</td>
<td>-245.4</td>
</tr>
<tr>
<td>1988</td>
<td>482.5</td>
<td>1060.7</td>
<td>-578.2</td>
</tr>
<tr>
<td>1989</td>
<td>260.0</td>
<td>1336.4</td>
<td>-1076.4</td>
</tr>
<tr>
<td>1990</td>
<td>356.3</td>
<td>618.5</td>
<td>-262.2</td>
</tr>
<tr>
<td>1991</td>
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<td>-608.8</td>
</tr>
<tr>
<td>1992</td>
<td>319.3</td>
<td>820.9</td>
<td>-501.6</td>
</tr>
<tr>
<td>1993</td>
<td>417.3</td>
<td>944.9</td>
<td>-527.7</td>
</tr>
<tr>
<td>1994</td>
<td>523.9</td>
<td>1161.5</td>
<td>-637.6</td>
</tr>
<tr>
<td>1995</td>
<td>555.7</td>
<td>1184.5</td>
<td>-628.8</td>
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<td>1996</td>
<td>620.2</td>
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<td>1997</td>
<td>594.2</td>
<td>1421.9</td>
<td>-827.7</td>
</tr>
<tr>
<td>1998</td>
<td>595.7</td>
<td>1732.2</td>
<td>-1136.5</td>
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<tr>
<td>1999</td>
<td>780.1</td>
<td>1256.2</td>
<td>-476.1</td>
</tr>
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<td>2000</td>
<td>1806.7</td>
<td>1366.4</td>
<td>440.3</td>
</tr>
<tr>
<td>2001</td>
<td>1698.7</td>
<td>2024.8</td>
<td>-326.1</td>
</tr>
<tr>
<td>2002</td>
<td>1949.1</td>
<td>2152.8</td>
<td>-203.7</td>
</tr>
<tr>
<td>2003</td>
<td>2542.2</td>
<td>2536.1</td>
<td>6.1</td>
</tr>
<tr>
<td>2004</td>
<td>3777.8</td>
<td>3586.2</td>
<td>191.6</td>
</tr>
<tr>
<td>2005</td>
<td>4824.3</td>
<td>5945.9</td>
<td>-1121.6</td>
</tr>
<tr>
<td>2006</td>
<td>5656.6</td>
<td>7104.7</td>
<td>-1448.1</td>
</tr>
<tr>
<td>2007</td>
<td>8879.3</td>
<td>7722.4</td>
<td>1156.9</td>
</tr>
<tr>
<td>2008</td>
<td>11670.5</td>
<td>8229.4</td>
<td>3441.1</td>
</tr>
<tr>
<td>2009</td>
<td>8257.1</td>
<td>8528</td>
<td>-270.9</td>
</tr>
<tr>
<td>2010</td>
<td>11404.3</td>
<td>8839.4</td>
<td>2564.9</td>
</tr>
</tbody>
</table>

Source: Bank of Sudan, annual reports.

Since 1960s and 1970s, Sudanese economy suffers from a persistent deficit in the balance of trade and then the balance of payments. Number of factors causes this deterioration such as the loss of competitiveness by Sudanese exports and dependence on a few export items, general decline in production for export due to a shift in incentives in favour of non-tradable, general decline in terms of trade, the inability to attract remittances from Sudanese nationals working abroad through
official channels and the loss of traditional markets such as China and India at these periods (Bior, 2000).

In the 1980s period, the year 1989 had witnessed the highest deficit in trade balance which amounted to (1076.4) million dollars. Also, the year 1980 had also seen a remarkable deficit that amounted t (1061, 7) million dollars. It is natural to expect such a deficit especially when we take into consideration the excursion of the stages of the work programme since 1973 that aimed at the enlargement of the economic base and investment in the different sectors according to priorities of economic development and what it needs as far as equipment, raw materials, transportation means and other capital goods. This in addition to the continuous increase in the industrial products prices which had resulted from the economic stagnation in the leading industrial of the world and the increase in the values of oil since 1973 (Ministry of finance, 1980).

In general, we can say that during the period 1970 and 1980s, the exports witnessed rigidity because of the low production growth rates. The Sudanese exports had not been developed and not increased in its volume despite the vast possibilities the Sudan enjoys in the fields of agriculture and an industrial basis. The returns from exports fluctuate between (400-600) million dollars annually during these periods (Alsayed, 2002). As far the imports their values had surmounted the exports values, and hence, the deficit had accompanied the trade balance.

In 1990s the situation had not continued to be the same, where the trade balance had suffered from deficit because of the shooting up of the imports values than those of the exports. Many trade reforms had been introduced in the early 1990s as a part of overall programme of economic reforms in order to remedy the decline. In
the external sector, the immediate aim was to reduce the balance of payments gap to a reasonable level. This will lead to growth in long run through achieving external balance.

The reforms of external sector which had been sets in National Economic Salvation programme 1990-1993 were (Ministry of Finance and Economic Planning, 1990):

- Strengthening of steps taken to increase exports, especially export of cattle and sheep and non-traditional and new exports like corn.
- To export processed and semi-processed goods in which Sudan has a comparative advantages, such as cotton yarn, textiles and edible oils, after agreeing with the owners of these industries on rehabilitation programme with government assistance and equitable vision of the proceeds of the programme.
- Liberalization of export prices and use of export price levels for indication only. Cotton and gum arabic had been exempted from the policy in 1990/91.
- Abolition of export licence system and limiting the procedure to a simple recording system for statistical purposes and the monitoring of repatriation of proceeds.
- Abolition of market monopolies for all agricultural commodities, starting with oil seeds at the beginning of new season.
- Introduction of retention system whereby exporters (other than cotton and gum arabic) will be allowed to retain 40% for traditional exports and 100% for new or marginal commodities to be used by them according to the following guidelines:
• To finance import of production inputs for priority industries including textile, edible oil, food industries, chemical industries and packing industries.
• All agricultural inputs and equipment.
• Inputs for transportation industry.
• Building materials.

- To maintain the restriction of barter trade, self-financing system and nil-value.
- Sale of land in different cities to Sudanese nationals working abroad, to be paid for in foreign currencies.
- To establish Mudharaba funds in foreign exchange to be managed by authorized banks only.
- To expand the duty free shops corporation operation to cover main commodities.
- To strength the existing procedures for smuggling control and organize border trade.

The Comprehensive National Strategy 1992-2002 reaffirmed and elaborated these policies as follows (Center of Strategic Studies, 1992):

- Liberalization of internal trade and allied activities.
- Abolition or reduction of export duties.
- Giving priority in allocating credit to export financing and creation of export fund.
- Increasing value-added by encouraging agro-industries and processing of agricultural produce.
- Simplifying export producers by reducing the number of agencies dealing with different aspects of exportation and by creating more awareness of laws and regulations on export.
- Opening new markets abroad by intensifying trade promotion activities, making maximum use of international and regional organizations, and by establishing more honorary consulates and economic attaches.
- Satisfying the requirements of packing and quality control.
- Involving the private sector in the formulation of trade laws and policies and in delegation travelling abroad.
- Establishing a livestock export chamber.
- Intensifying oil and mineral exploration for oil and mineral.
- Granting facilities and privileges for the production and export of gum arabic in accordance with the Encouragement of Investment Act.
- Expediting the establishment of National Export Council.
- Continuing with the on-going policy of promoting the cultivation of cotton in the rainfed sector.
- Creating an export stabilization fund.
- Replacing the experiences gained in spinning and tannery and in other areas, with the aim of increasing value-added.

We note that the majority of these policies are designed to improve the performance of exports and thus processing chronic deficit in the trade balance. However, it is clear that these policies have not given the desired results because that the deficit in the trade balance continues except for some years, which had witnessed the Sudanese oil exportation. So these policies did not lead to improved performance of agricultural exports, which is considered the main channel for foreign trade.
3.5.3. Trade Openness:

The indicator of relative importance of foreign trade, the aggregate of exports and imports of goods in relation to GDP, express the degree of openness of the Sudanese economy to the world and this is can be mathematically expressed as:

Degree of Trade Openness = (Exports + Imports) of goods / Gross domestic Product

Table no(1) in the appendix indicate that the Sudanese economy has been opened to the world in a limited way during the years 1970s, 1980s and 1990s despite the increase in its openness during 2000 to 2010 as its degree of trade openness has not been lowered than 30% since the year 2005.

During the 1970s, the highest contribution for the gross foreign trade of goods in the GDP has amounted to 30% in the year 1975 when the foreign trade ministry had started the provision of the economic development with the three year plan during the period, and the average contribution rate for the 1970s period was (25.5%).

During the 1980s, the year 1980 has indicated the highest contribution rate in the gross foreign trade for goods in relation to the GDP where it had reached 80%, whereas the year 1989 had recorded the lowest percentage (4.4%) and the average contribution for the period was (13.3%). We can also notice that degrading of the ratios was due to the period of heavy drought that had struck the area leading to the decrease in exports values as most of the exports were of agricultural nature depends on the average rainfall efficiency which had a negative impact on the degree of trade openness.

During the 1990s, the contribution of foreign trade of goods in relation to GDP had started to improve when the highest percentage was 20.7% in the year 1992.
and the least percentage was 7.9% in 1990. The average contribution for this period was (15.6%).

During the period from 2000 to 2010, the trade openness had witnessed a noticeable increase where the highest percentage reached (39.3%) in the year 2005 and the least percentage was (25.7%) in the year 2000. The average rate for this period was (31.9%). Hence, this improvement in the trade openness degree could be attributed to petroleum exploitation and exportation a fact which had largely contributed to increase in exports.

3.6. Foreign Direct Investment in the Sudan:

3.6.1. The investment climate in Sudan:

Many factors had been tried to create a favorite and attractive climate for investment in the Sudan. On top of these factors the government attitude to develop the environment of investment and to attract foreigners for this purposes. Here we will try to discuss some of the factors attracting investors into Sudan (Ministry of investment, 2005):

A-The strategic location of the country:

Sudan lies in the heart of Africa. It is surrounded by seven African states which consider it a gate way for most of them. In its eastern boundaries is the red sea- a fact that gives the Sudan a central position of the world markets in the middle as well as the Far East in Asia and Europe and U.S.A. It receives cargo ships that pass through the Suez channel into the Red Sea. The country has also air routes with some of its adjacent states and connected with each other through river and sea transport.
B- The Natural Resources:

The Sudan has great natural resources and possibilities such as extensive agricultural lands, waters from many resources like river, rain and underground water. This is in addition to forests and ranching vast areas, animal wealth, minerals the most important of which is gold and other rare ones, and petroleum. Furthermore, the country has human resources with varied technical and trained experiences and cheaper costs of labor compared to other countries..

C- The Economic Policies:

This includes:

- Liberalization of economy.
- Structural economy (privatization of public utilities and cancelling of state monopoly of some productive and services sectors).
- Revision of laws and acts of investment encouragement.
- The setting of a new and flexible investment law that guarantee facilities that encourage investors. These include:
  a- Full exemption from customs duties for capital infrastructure.
  b- Free mobilization of capital.
  c- Free transformation of capital from projects.
  d- Simplification of investments procedure via one-stop shop.
  e- Exemption from business profit tax which ranges between five to ten years for investment projects.
  f- Full exemption of custom duties on capital facilities of strategic and nonstrategic projects.
D- Free Areas and Markets:

To encourage foreign investment, the government has established free areas in Sudan like Swakin and Aljaili. The law of free areas and markets (1994) has specified the following exemption and privileges:

- The right of full ownership for foreign investors.
- Free transference of profits and capital.
- There are relatively no restrictions in foreign currency exchange.
- The investors are exempted from income tax payment.
- Full exemption from taxes for the companies for 15 years liable for renewal.
- Free hand concerning recruitment of local and foreign labor.
- No restrictions in issuing entry and residence visas for investors.
- Availability of raw material and other materials crucial for production.
- Making use of the preferential markets which is an outcome of the COMESA agreement.

E- The Market Size:

The number of consumers is expected to be about 33 million consumers. This number is liable to increase to about 400 million consumers after agreements with other neighboring countries.

F- International and Regional Agreements:

- The Sudanese government has approved international and regional agreements for encouraging investment and increase the volume of trade exchange with these countries.
- The government has also made agreements with some countries in the fields of trade exchange and commercial protocols.
- Sudan has become a member of the COMESA organization.
- Sudan has tried to be included as a member in the World Trade Organization.
- Sudan is trying to join Arab Free Trade Organization.
- Sudan has worked towards strengthening relationships with regional and international organizations concerned with investment.

G-The Private Sector:

After the implementation of the economic liberalization policy in 1992, the private sector has enjoyed due respect and concern of the government – a fact that facilitates freedom for the different sectors in economic activities. This sector has been modified and improved to take an effective role to participate in developments projects. The sector has its own managerial bodies that contribute to the economic, social development the Sudan has witnessed.

Trade and Industrial chamber whose main work collection of information, laws and procedures a fact that enable investors to know areas of investment chances.

3.6.2. Evolution of Sudan’s Investment laws:

FDI projects started in Sudan since 1925 by the establishment of Aljazeera project as the first strategic investment project, after that investments came in succession and a set of legislations governing it were prepared. Since the independence of Sudan in 1956 the government tended to encourage local and foreign investments in order to develop the national economy and to establish strong production base to finance the national income.
Granting Facilities Act was laid down in 1956 for the approved enterprises as a first regulation which showed the desire of the country to encourage investments.

Application of this law prevailed for ten years, accompanied by various industrial activities. Those industries concentrated on substitutions of import like food manufacturing, chemicals, textiles, tobacco and shoes industries (Ministry of Industry and Mining, 1956).

After the establishment of the ministry of industry in 1966, Industrial Investment Act was issued in 1967. This act provided more concessions and facilities than 1956 act, in particular exemptions from business profit tax and custom duties on equipments, machines, spare parts and raw materials. Also, the act provided protection for local industrial production and permitted transfer of profits abroad. This Act represented an important transnational stage for industrial activities and laid down the bases and regulations to encourage investment in this sector (Ministry of Energy and Mining, 1967).

The nationalization and confiscation of many economical enterprises, which took place in 1970, had an inexplicit negative impact on the investment climate on many foreign firms. In order to return the confidence of the investors and to eliminate the distinct hesitation of the Foreign Capital, Act was issued (The Development and encouragement of Industrial Investment Act in 1971) instead of 1967 Act. This act provided that there should be no sequestration or confiscation of invested capital except by a court order. Moreover, enterprises should not nationalize, except for national interest. But in all cases the investor must be paid a fair compensation.
Furthermore, the law stipulated that no discrimination should be applied between national and foreign firms, public or private sector in the manner of granting facilities and concessions.

After privilege provided by 1972 Act for the investment projects to develop the industrial sector, appeared ineffective in attracting foreign capital during implementation period of the law (Ministry of Industry and Mining, 1972). As a result, a new act was issued in 1974 according to which, more concession were offered. The private sector witnessed expansion in many sectors like textile, agricultural, oil, chemicals, and tyres industries, in addition to enlargement of the public sectors in sugar, textile and leather industry. The country attempted to encourage investment in all economic activities specially the agriculture and services sectors which differ in their structure and needs from the industrial sector. So, the government used special laws for these activities and provided various privileges to encourage investment in these sectors.

The organization and encouragement of investment in economic services act 1973 was issued to deal with the economic services activities. The activities covered by this act included tourism, transportation, wear housing, and the agricultural production, in addition to all other activities which help to serve and promote the national economy (Investment Act, 1973). On the other hand, investment enterprises in the field of agriculture were governed by the Development and Promotion of Agricultural Investment Act 1976.

Once an enterprise, establishment or project is approved, it will be granted the various incentives offered by the investment laws. These concessions include the usual tax incentives such as business profit tax holidays and custom exemption on raw materials and machinery imports. In addition to the approved investment
projects which enjoy preferential land price, and reduced electricity and transportation rates.

The existence of three acts 1972 industrial investment act, 1973 services investment act and 1976 agricultural investment act at the same period may discourage investment. Moreover, the existence of more than one authority responsible of investment process results in delay in performing the investment procedures and creates obstacles for local and foreign investors in executing their projects.

In order to avoid multi specialization and to direct the economical resources to the optimum utilization, all the investment laws were unified in one law (Act 1980) and established only one authority (the investment public corporation) to supervise execution of the laws.

The 1980 investment act was replaced by the (1990 investment act) which provided more concession and guarantees for local and foreign investor, but this last until 1996; it was followed by the 1996 investment act, which includes most of the articles of 1990 act.


3.6.2.1. Objectives of the Investment Acts:

The investment act of 1980, 1990 and 1996 were issued to organize the economic activities of the national and foreign investments enterprises. These laws aim to encourage the projects which help to achieve the objectives of the country’s development plans.
The investment act of 1980 aimed to encourage certain economical fields like agriculture, mining, industry, transportation, tourism, storing, livestock and housing. The act concentrated on enterprises which have the following measures (Ministry of Finance and Economic Planning, 1980):

- Projects which contribute in developing the national economy and enlargement of the economical base.
- Projects which assist in the elimination of the obstacles that hinder the development process.
- Enterprises which provide necessary services to subsidize the economy and social development.
- Enterprises which depend on local raw materials.
- Projects which help in achieving self-sufficiency and create surplus production for exportation.
- Schemes which assist in the improvement of the balance of payments.
- Projects which provide employment opportunities.
- Projects which have defensive or strategic importance.
- Projects which achieve the objectives of economic corporation and integration with the Arab and African countries.

On the other hand, the 1990 investment act was issued to replace the 1980 act. The 1990 act provided more concessions and guarantees for both local and foreign investors. This act represented the legal base for the investment; it gave a strong push for liberalization and simplification of procedures. The 1990 act encouraged investment in enterprises which help raise the national income and the enlargement of the national economic base, in addition to enterprises which help achieve economic and social development objectives of the country. The act concentrated on projects which use local materials in production and those which use modern
energy sources. Furthermore, the act offered incentives for the schemes that help achieve the co-operation and integration between the Islamic African, Arab and other friendly countries (Sudan investors guide, 1990).

The 1990 act encouraged investment in numerous economic fields such as agriculture, livestock, industry, mining, transportation, storing, housing, construction and basic services. The law did not discriminate between local or foreign investors and encouraged both the public and private sector.

The 1996 act has similar objectives to those of 1990 act encourages all local and foreign projects which help to achieve the development of the economy and the law adds a new objective which is related to the promotion of small scale industries.

It is clear that the three investment acts 1980, 1990, 1996 permit the foreign capital to contribute and invest in all the national economic sectors and this represent large opportunity for the foreign investors to exploit.

3.6.2.2. Concession and Facilities:

The numerous privileges granted by the investment laws for the investors represent an important feature of the investment acts of Sudan. The target behind previous provision concessions is to encourage the local and foreign capital to engage in the investment process in Sudan. However these laws offer similar incentives concessions and facilities for the national and foreign investors.

All the acts concentrated on the tax-exemption in particular business profit tax and custom duties exemption on imported machines and other inputs of production, necessary for investment projects. Moreover, land, electricity, transportation and energy were provided for the investor with low prices. The laws
also, offered protection for the projects production from other competitive and substitutes imported commodities.

No significant distinctions exist between the concessions and facilities provided by the recent investment acts of 1980, 1990 and 1996. But each law contains more privileges than the previous one in order to improve investment climate and increase the inflow of capital to Sudan.

The concession and facilities provided by 1980 act include (Investment act, 1980):

- Total or partial exemption from business profits tax for a period of maximum five years starting after the first year of production, and the period of the exemption is determined according to the importance of the project for the national economy and the size of the capital invested. The Act permits extension of the exemption period for another five years (maximum) for projects with hudge capital. Moreover the acts consider any loss during the exemption period as a loss acquired the last year of the exemption period.
- Total or partial exemption from customs duties on imported equipments, machines and spare parts for the project which are not available locally, also exemption from production fess and other taxes imposed on the enterprise.
- Allocations of land for the project with low prices or allow the investor to pay its value on installments.
- Reduction of the energy price and transportation fees of the production and inputs of the project.
- Increase custom-duties for competitive and substitutes commodities to protect the production of the investment enterprises.
- Offer sufficient information about the approved schemes and more concessions for schemes in the less developed regions in the Sudan.

All concessions and facilities offered by the 1980 act are also offered by 1990 act. In addition the following facilities and concessions are offered by the 1990 act (Sudan Investor Guide, 1990):

- Grant of additional credit to finance the enterprises.
- Transfer of profits generated by the projects and the financial cost of the foreign capital by the imported currency after payment of all the legal liabilities of the project.
- No restrictions are implemented on exports and imports of raw materials.
- Allowing the transfer of employee savings according to the prevailing law and free movements of employees.

The investment act of 1996 was issued after adoption of the federal system in Sudan. The country was divided into 26 states; each state has minister responsible for investment and has the right to grant concessions and facilities for the investment project. Any project must be licensed from the federal government and no distinction is existing in providing the concessions, whether the scheme is national, joint venture or foreign investment scheme.

There are many facilities and concession offered by 1996 Act which includes (Investment Act, 1996):

- Total and partial exemption from taxes and fees imposed on the project by the federal law during the first five years.
- Business profit tax holiday for the first five years starting the year of the commercial production. The law pushes any loss during the exemption period to the last year of the exemption period. But projects might not be granted business tax holidays except if its revenue returns to the national economy and not for other country’s advantage. The ministers can extent the exemption period if the projects need that.

- Exemptions from consumption tax, custom duties, and other fees should not exceed 70% for the following imports:
  a- Machines and equipments.
  b- Constructed buildings, generators and transportation methods.
  c- Spare parts, medium and primary inputs.

- Reconstructing of taxes and fees of the manufactured and semi-manufactured commodities for exportation must not exceed 70% during the period of exemption (five years).

- Allocation of land at preferential prices for the establishment of the scheme (Investment Act, 1996)

The concessions mentioned above show to what extent the investment acts offer similar treatments for both the national and foreign investors in order to attract them to invest in the Sudan.

The five year exemption period is sufficient to recover the costs of the project and to achieve profits and the laws permit extension of this period according to the need of the project. All facilities granted to the foreign investor represent an incentive factor to attract the inflow of the capital to the Sudan.
3.6.2.3. Guarantees:

In its effort to improve the investment climate, the Sudan offers foreign investors various guarantees against non-commercial risks, the most important of which are the legal guarantees against nationalization, expropriation, confiscation, sequestration. If any of the above measures should occur, the foreign investor is granted fair compensation. For investment purposes, the foreign investor is treated as if he is a national, and as such he is entitled to all rights conferred and the obligations incurred by Sudanese nationals. As to the other resolving of investment disputes, the foreign investor is entitled to appoint his own representative who has the right to select the umpire.

The guarantees offered by the 1980 investment act are similar to those provided by the 1972 and 1974 investment acts. These guarantees are represented by the following (Investment Act, 1980):

1- No guarding or confiscation of the invested capital in Sudan should take place except by a judicial order.

2- Invested capital should not be nationalized except for the national interest purposes and in such cases the following measures are taken:
   - The investor must be granted fair compensation based on an objective evaluation of his properties at the time of nationalization, and this should take place within six months after nationalization.
   - Compensation can be transferred abroad. The transfer could be on annual installments for five years, and the installments are determined by both the foreign investors and the local government.
   - In case that a dispute arose about the value of the compensation, the investor has the right to submit the dispute to a committee formed of three
members. The first member represents the investor, the second represent the government and the third member heads the committee but the judgment must be in Sudan. Moreover, the act permits the repatriation of capital and profits to abroad.

On the other hand, the 1990 investment act added more guarantees for the foreign and local investor, the most important of these guarantees were (Investment Act, 1990):

- No confiscation or nationalization should take place.
- No restraint, blocking, freezing or reservation on the investment enterprises should be applied except by a court order.
- The estate of the investment projects should not be expropriated except for the public interest. Fair compensation must be paid based on the market price of the estate.
- The Act permits the transfer of the invested capital if the project is not executed or it is dissuaded totally or party. The transfer could be in the currency by which the capital was imported, constrained by paying all the legal liabilities of the project such as taxes, custom duties and other production fees.

Other guarantees are provided through the association of Sudan in international and regional organizations specialized in investment process and disputes. These organizations are:

- The unified agreement to economic, commercial and technical co-operation between members of Islamic Conference Organization.
- The agreement of settling investment disputes between the countries and inhabitants of other countries (1965).
- The unified agreement for Arab Capital Investment in the Arab countries (1980).

Sudan also is a member in the Arab Corporation for Investment Guarantees and member in the International Agency for Investment Guarantees. All the guarantees provided by 1990 international act are included in 1996 investment act.

The Sudanese government offers all such guarantees in order to return the confidence of the foreign investors and to eliminate the negative impact caused by the nationalization and confiscation measures of 1971 which led to flight of the foreign capital from Sudan.

3.6.2.4. Restrictions:

The most important restrictions imposed on foreign investor by the various investment acts in Sudan, is to get a license for the establishment of any investment project. The investor has to present technical and economic feasibility studies in order to be granted the license. Other restrictions including the establishment of the scheme within a fixed period of time, submission of the project accounts annually and other obligations included in most of the investment acts of Sudan.

Restrictions imposed by 1980 investment act are (investment Act, 1980):

- The enterprises should be established within the decided period of the license.
- No dissolution of the project should take place during the first five years of production.
- Any amendment on the size, location or purpose of the approved project, must not be done except by a permission from the responsible authority.
- The equipments, machines, spare parts and land should not be used for other purposes other than the licensed one, except by permission.

- The manager of the investment project has to submit yearly the accounts of the project for the responsible authority of investment activities.

The 1990 Investment Act included the following restrictions (Sudan’s Investors Guide, 1990):

- No enterprises could be established without a license.
- Technical and economic feasibility studies must be submitted in order to be given a license for establishment of the project.
- The investors have to execute their enterprise within 12 months after the license, but this period could be extended by permission from the responsible authority.
- The investor must submit periodic reports during the concessions period.

According to 1990 investment Act the investor should receive the land for the establishment of the project within a period of 3 months, but this period was reduced to 2 months only by articles of 1996 investment act.

The act of investment in the Sudan of 1999 (revised 2007) had been issued in order to avoid some of the drawbacks of the previous laws, which include (Al-Hassan & others, 2011):

- It has referred to abolishing discrimination among industries whether they are Sudanese, foreigners or Arabs. It has also abolished discrimination between projects- private, public, mixed or co-operative for giving privileges and guarantees.
- The law has granted an exemption from business profit taxis for ten years liable to increase in duration. It will be effectively applied at the
commencement of the project in strategic projects. It has also granted the main strategic projects an exemption from this tax for a period of five year liable to increase.

- Both strategic and non-strategic projects enjoy full exemption from custom duties. These include capital facilities, production inputs, means of transportation and technical machinery.

- The law provides the strategic projects a freely piece of land and provides nonstrategic projects land with encouraging price in order to encouraging investment.

- In order to simplify procedures, the issuing authority for approvals has been unified the investment projects under the ministry of investment. All related ministries have been given the following authorities:
  1- Determination of the priority schemes and the setting of the investment policies for their ministries.
  2- Preparation of investment maps for the different sectors.
  3- Initial approval for the implementation of the project on the grounds of the studies including technical and economic utilities passed from the Ministry for Investment.
  4- The follow up of the implementation of projects accompanied with rotational reports.

The law has also given the State Ministries the right to exempt taxes and fees that are imposed locally.

- The laws of investment have secured that no nationalization or confiscation or ownership deprivation wholly or partly for public utility except by law and fair compensation. In addition the law has prohibited detention of the project finance or confiscation except by a legal order.
- If the project could not be implemented the invested money can be restored, liquidated the wholesome or partly after the payment of all debts and financial obligation. The law has also approved the restoration of the equipment, machinery, means of transport and other needs. The law has also guaranteed transfer of profits and capital costs by the sort of currency introduced by the investor or the settlement of the loan at due date.

- Adoption of a broader understanding of the invested capital to involve foreign and local currencies and equipment and the settlement mortgage, loan guarantees stocks and bonds and non tangible rights like trade marks, publishing of intellectual property rights.

- Giving special treatment for projects that are built on special agreements with Sudan government.

- To guarantee and protect privileges given to the project, the law has warned any managerial unit to refrain from the implementation of these privileges.

- In the case of the settlement of conflicts concerning investment except those conflicts that arise and have been stated in the agreement especially with the Sudanese government – all conflicts should be subjected to legal authorities.

- Regarding the requirements for implementing a project, the investor should provide a list of the requirements where they can be studied and approved with a copy to the customs duty. These requirements can be imported as a whole or installments according to scheduled programme.

- The foreign capital must be registered at the bank of the Sudan after the provision of the necessary documents. The project can also open an
account at any commercial bank recognized by the bank of the Sudan. It is called open investment.
- The investor can employ foreign or local labor according to the law of labor.
- No discrimination among the presented projects when giving guarantees and privileges.

3.6.2.4 The Investment Act (2013):

The new investment law removed most of obstacles hindering investors. The new law, exempts capitalist commodities from value added tax (VAT), offers a 10-year grace period for strategic projects, and combines all procedures in one outlet. The new act dealt seriously with the previous futile bureaucracy that defeated most of the serious initiatives, as according to the new act the investor can have the initial approval for his project within only one week. The new investment encouragement act stressed on the necessity of providing better environment free of any legal or administrative crippling formalities.

The law provide for (Investment Act, 2013):

- No discrimination shall be made between the investors as being Sudanese, or non-Sudanese, or as being public, private sector, co-operative or joint sector.
- No discrimination shall be made between similar projects in similar areas in respect of granting concessions and guarantees.
- One Stop gate system shall be established at the Authority, with the membership of the commissioners of the ministries having relations with the investment.
A- Exemption and Concessions:

- The Council of Ministers may, upon recommendation of the Minister, grant exemption of business profit tax to strategic investment project.
- Projects capital expenditures shall be exempted from value added tax.

B- Exemption of Customs Duty:

- The Authority may grant the project exemption of:
  
  a. Customs duty on capital expenditures which are not enrolled in custom tariff, in coordination with the concerned ministry, provided that exemption for state investment project shall be made upon recommendation of the state minister to the Chairman of the Authority.

  b. Customs duty of transport conveyances, excluding administrative vehicles “Saloons with capacity in excess of 1000 CC, double cab pickup and station wagon”.

- Production inputs of investment projects, not enrolled in customs duty tariff shall be subject to the same rate imposed on production inputs provided for in customs duty tariff as determined by the regulations.

C- Survey and Demarcation of Lands allotted for National Projects:

- Not with standing the provisions of any other Law, the Authority may allot the land required for establishing national or strategic investment project at encouraging rate in coordination with the states’ authorities.

- The Authority, in coordination with states’ authorities, may renew the term of the leasehold of the land where the project established thereon.

- The concerned authorities at states shall register lands for industrial and services projects; and shall carry out the detailed technical planning as well as preparation of the required maps and deposit them with the Authority for allotment.
- The concerned authorities at the states shall register agricultural lands, carry out technical survey, and detailed planning and deposit the same with the Authority for allotment.
- According to the investment law of 2013, the land allotted for the project shall be handed over within maximum period of one month from the date of project registration, and shall be registered forthwith project completion.

**D- Granting License:**
- The Authority upon receipt of license application for any project, shall within maximum period of one week, grant initial approval for the establishment of the project, if the project satisfied all prescribed conditions.
- The Authority shall grant the license within a period not exceeding one week of the date of receiving the business name.
- If the application for license is rejected, such rejection should be reasoned.

**E- Guarantees and Facilities of the Investment:**

(1) The project existing according to the provisions of this Act shall enjoy the following facilities:

a. The Assets and properties of the project shall not be subject to nationalization, seizure, confiscation or appropriation either wholly or partially, except for public interest against fair and immediate compensation.

b. The Funds of the project shall not be subject to seizure, confiscation, appropriation, freezing, attachment or receivership, except with judicial decree or order from the competent Prosecution.

c. Re-transmission of invested capital in case of non-execution, liquidation or disposition of the project by any manner of disposition with the approval of the Authority, provided that all legally due obligations are met.
d. Re-export, sale or assigning machines, equipments, goods, apparatus, transport conveyances or other ancillaries imported on the account of the project in case of non-execution of the project wholly or partially whenever all legally due obligations are met.

e. Transfer of profits and financing cost of foreign capital or loans in the currency by which Central Bank of Sudan deals or the loan on maturity date, after payment of all legally due obligations of the project.

f. Importing raw materials which the project and its products need.

(2) For the purpose of item (1), the invested capital in foreign currency shall be determined and elements of capital in kind shall be evaluated by the Authority in co-ordination with the concerned authorities.

(3) The investor shall enjoy the following:

a. Recruitment of licensed Labor according to the terms and conditions stipulated by the relevant laws and regulations thereto.

b. Foreign investor shall obtain work permits and residence license for himself and his family throughout the term of execution and operation of the project according to the relevant laws.

(4) Wages and allowances of non-Sudanese labours of the project shall not be subject to social insurance.

**F- Obligations of the Investor:**

The investor should:

a. Perform the project by construction of the building and the required facilities as per drawings approved by the competent authorities within a maximum period of one year of the date of signing the contract, unless such period has been
extended pursuant to a decision issued by the Authority, for any period it deems suitable.

b. The full utilization of the land granted for the project according to the licensed object and approved drawings.

C. Submission of quarterly reports to the Authority and the concerned ministries throughout the validity period of the concessions in respect of the project execution operation progress.

d. Keeping regular books and maintaining records wherein the projects assets and imported materials exempted from the customs duty are registered.

e. To provide annually, the Authority and the concerned ministry throughout the validity period of the concession, with copies of the projects annual accounts certified by chartered auditor, and the Authority shall deposit a copy of these accounts with Chamber of Tax.

f. To notify the Authority and the concerned ministry in case the project finally cease to work and operate, within a maximum period of three months from the date of cessation.

Despite the large number of issued and adjusted investment laws, but the reality shows that investment laws were not able to attract productive foreign direct investments, as we know the most investments in the Sudan are in the services sector that has quick returns. This indicates that removing of the obstacles which faced investors by the law of investment is not enough; the practices hindering investment must be removed through direct supervision by the government.
3.6.3. The Positive Effects for Investment in the Sudan:

There are certain positive effects that attract flow of investment on the various sectors in the Sudan and this accelerated the economic development process (Al-Hassan, 2011):

A- The Legal Procedure and Acts:

This had been negotiated above which include the investment laws until the last one (1999 act revised 2007). These acts had been worked to attract the investors by giving guarantees and facilities that enable them to implement their projects without risks.

B- The Effects of Economic Polices on Investment:

Structuring of Sudanese economy that had been started since 1990 to 1993 through a Comprehensive Economic Reform Programme depend on:

- Minimization of government role in the economic activities via privatization policy in order to increase the chances of investment for the private sector.

- Liberalization of foreign trade, encouragement of exports, liberalization of prices and the stoppage of subsidization of goods and services.

- Revision of the taxation system through the implementation of the added value on the system of taxes and reduction of taxes prices, revision of tariff customs via exemption and reduction of customs fees.

- The inclusion of Sudan to preferential trade organization COMESA in 1990, which was changed to common market free of custom tariff. The Sudan has gained the membership of Arab Trade Organization in 2000.

- Dependence on the policy of economic liberalization.
- Allowance of the inclusion of some foreign banks which enjoy huge financial and high technical experiences in the banking and development sector.

- The initiation of the Exchange Market of Khartoum.

- The following of technical investment in the sectors of mining and prospective areas of oil via the importation of modern technical and sophisticated machinery.

- Foreign investment in the petroleum has contributed to employment of huge number of labor on different aspects of specialization.

**C- The Effect of Infra-structure and Natural Resources on Investment:**

As we mentioned in previous section, Sudan has great natural resources and possibilities and this help it to attract foreign direct investment in various sectors of economy.

**3.6.4. The Negative Effects of Investment in Sudan:**

There are certain negative effects that retard flow of investment on the different sectors in the Sudan, which account for the hindrance of the economic development processes (Al-Hassen, 2011):

**A- The Political Non Stability influences:**

- Failure in the attainment of national agreement that leads to stability for overall regional development.

- Difficulties in obtaining agreeable resolutions for unsolved problems with the state of Southern Sudan before the separation of it.

- Failure of attainment of radical settlements of regional conflicts (Dar Fur states- Southern Kordfan- the Blue Nile state and Abyi).

- Foreign continuous sanctions against Sudan.
- Lack of financial flow provision of investment due to economic boycott.

**B- Legal and Judiciary Influences:**

These are summarized in the following:

- Despite the fact that the investment law has stated its superiority in application over other laws as to the elimination of any contradiction, but still there are some laws e.g. the act confiscation of land ownership contradict with it.

- The law has not specified land ownership to the authorities of investment which has led to retard implementation of many projects.

- The negligence or lack of coordination of the related government bodies such as representatives of custom duty, central bank of Sudan and taxies department, department of land and taxes department, when the act has been prepared and resolved.

- The contradiction between the federal and central authorities in offering exemptions and privileges.

- Investors have been haunted by the state taxies that are imposed by local and state laws.

- Absence of proper investment maps, which contains information and the required statistical data for the wealth and resources, in the central ministry of investment for the attractive projects.

- Law of investment encouragement has ignored preferential privileges for the less development areas. The investor in the mixed projects such as agro-industrial has to contact several units and pass through different laws and regulations.
C- Economic Influences:

This includes:

- Obscurity involving financial and monetary policies due to its instability such as the central polices which are supposed to be carried out by the commercial banks especially those related to transaction in importation which have been liable to continuous alteration changes for unknown reasons so that crate perplexity for them.

- The consequent diminishing revenue from oil and its effect on the general revenue and the balance of payments has decreased the financial ability of the government to support investment.

- Financial instability of the local private sector.

- The financial instability of the local banking sector and the decline of the quality of the services offered.

- The hyper increase in foreign debts which affected the execution of the government obligations.

- The fact that lesser attention has been given to scientific research and technical evolvement, absence of encouraging modern studies.

- Absence of human resources - a fact that has led to failure of development programmes to achieve their goal.

- Dependence on quick returns investment which does not contribute by a substantial increase in the economic field – thus the absence of social benefits.

- The international financial crisis has led to difficulties in obtaining raw material and financial resources for the private sector.
- The increase in electricity services prices, fuel, water and fees of road which has increased the production costs and finally led to diminishing investments.
- The spread of administrative corruption and absence of supervision.
- The application of double taxation procedure between Sudan and other countries.
- The increase in illiteracy rates among citizens and poverty rates which have led to decrease saving abilities.
- Emigration of the highly qualified citizens and dependence on foreign cheaper labor forces.

3.6.5. 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, NGOs, 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 1970-2010.
Table (3). Foreign Direct Investment, FDI growth and FDI contribution in Gross Domestic Product during the period 1970-2010.

(Million current US$)

<table>
<thead>
<tr>
<th>Year</th>
<th>FDI</th>
<th>FDI growth %</th>
<th>GDP</th>
<th>FDI/GDP %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>1.66</td>
<td>....</td>
<td>2,100.23</td>
<td>0.08</td>
</tr>
<tr>
<td>1971</td>
<td>1.01</td>
<td>-39.16</td>
<td>2,276.43</td>
<td>....</td>
</tr>
<tr>
<td>1972</td>
<td>0.61</td>
<td>-39.60</td>
<td>2,470.29</td>
<td>0.02</td>
</tr>
<tr>
<td>1973</td>
<td>0.26</td>
<td>-57.38</td>
<td>3,061.43</td>
<td>0.01</td>
</tr>
<tr>
<td>1974</td>
<td>-1.16</td>
<td>-546.15</td>
<td>3,938.57</td>
<td>-0.03</td>
</tr>
<tr>
<td>1975</td>
<td>1.3</td>
<td>-212.07</td>
<td>4,798.29</td>
<td>0.03</td>
</tr>
<tr>
<td>1976</td>
<td>5.84</td>
<td>349.23</td>
<td>5,982.29</td>
<td>0.10</td>
</tr>
<tr>
<td>1977</td>
<td>8.27</td>
<td>41.61</td>
<td>7,460.43</td>
<td>0.11</td>
</tr>
<tr>
<td>1978</td>
<td>5.99</td>
<td>-27.57</td>
<td>8,074.21</td>
<td>0.07</td>
</tr>
<tr>
<td>1979</td>
<td>-2.66</td>
<td>-144.41</td>
<td>8,401.98</td>
<td>-0.03</td>
</tr>
<tr>
<td>1980</td>
<td>8.85</td>
<td>-432.71</td>
<td>7,617.17</td>
<td>0.12</td>
</tr>
<tr>
<td>1981</td>
<td>19.33</td>
<td>118.42</td>
<td>9,538.01</td>
<td>0.20</td>
</tr>
<tr>
<td>1982</td>
<td>16.79</td>
<td>-13.14</td>
<td>9,254.39</td>
<td>0.18</td>
</tr>
<tr>
<td>1983</td>
<td>6.32</td>
<td>-62.36</td>
<td>8,465.26</td>
<td>0.07</td>
</tr>
<tr>
<td>1984</td>
<td>9.08</td>
<td>43.67</td>
<td>10,044.30</td>
<td>0.09</td>
</tr>
<tr>
<td>1985</td>
<td>-3.04</td>
<td>-133.48</td>
<td>12,459.35</td>
<td>-0.02</td>
</tr>
<tr>
<td>1986</td>
<td>-8.17</td>
<td>168.75</td>
<td>15,966.65</td>
<td>-0.05</td>
</tr>
<tr>
<td>1987</td>
<td>11.65</td>
<td>-242.59</td>
<td>20,631.19</td>
<td>0.06</td>
</tr>
<tr>
<td>1988</td>
<td>2.02</td>
<td>-82.66</td>
<td>15,510.32</td>
<td>0.01</td>
</tr>
<tr>
<td>1989</td>
<td>3.49</td>
<td>72.77</td>
<td>15,295.63</td>
<td>0.02</td>
</tr>
<tr>
<td>1990</td>
<td>-31.13</td>
<td>-991.98</td>
<td>12,408.65</td>
<td>-0.25</td>
</tr>
<tr>
<td>1991</td>
<td>-0.62</td>
<td>-98.01</td>
<td>11,379.22</td>
<td>-0.01</td>
</tr>
<tr>
<td>1992</td>
<td>0.09</td>
<td>-114.52</td>
<td>7,031.93</td>
<td>0.00</td>
</tr>
<tr>
<td>1993</td>
<td>-0.16</td>
<td>-277.78</td>
<td>8,881.00</td>
<td>0.00</td>
</tr>
<tr>
<td>1994</td>
<td>99.18</td>
<td>-62087.50</td>
<td>12,793.80</td>
<td>0.78</td>
</tr>
<tr>
<td>1995</td>
<td>12</td>
<td>-87.90</td>
<td>13,830.46</td>
<td>0.09</td>
</tr>
<tr>
<td>1996</td>
<td>0.4</td>
<td>-96.67</td>
<td>9,018.32</td>
<td>0.00</td>
</tr>
<tr>
<td>1997</td>
<td>97.9</td>
<td>24375.00</td>
<td>11,681.20</td>
<td>0.84</td>
</tr>
<tr>
<td>1998</td>
<td>370.7</td>
<td>278.65</td>
<td>11,250.22</td>
<td>3.30</td>
</tr>
<tr>
<td>1999</td>
<td>370.8</td>
<td>0.03</td>
<td>10,682.05</td>
<td>3.47</td>
</tr>
<tr>
<td>2000</td>
<td>392.2</td>
<td>5.77</td>
<td>12,366.14</td>
<td>3.17</td>
</tr>
<tr>
<td>2001</td>
<td>574</td>
<td>46.35</td>
<td>13,362.33</td>
<td>4.30</td>
</tr>
<tr>
<td>2002</td>
<td>713.18</td>
<td>24.25</td>
<td>14,975.63</td>
<td>4.76</td>
</tr>
<tr>
<td>2003</td>
<td>1,349.19</td>
<td>89.18</td>
<td>17,780.30</td>
<td>7.59</td>
</tr>
<tr>
<td>Year</td>
<td>FDI</td>
<td>FDI growth%</td>
<td>GDP</td>
<td>FDI/GDP%</td>
</tr>
<tr>
<td>------</td>
<td>------</td>
<td>-------------</td>
<td>-------</td>
<td>----------</td>
</tr>
<tr>
<td>2004</td>
<td>1,511.07</td>
<td>12.00</td>
<td>21,684.76</td>
<td>6.97</td>
</tr>
<tr>
<td>2005</td>
<td>2,304.64</td>
<td>52.52</td>
<td>27,386.70</td>
<td>8.42</td>
</tr>
<tr>
<td>2006</td>
<td>3,534.08</td>
<td>53.35</td>
<td>36,393.19</td>
<td>9.71</td>
</tr>
<tr>
<td>2007</td>
<td>2,425.59</td>
<td>-31.37</td>
<td>46,533.23</td>
<td>5.21</td>
</tr>
<tr>
<td>2008</td>
<td>2,600.50</td>
<td>7.21</td>
<td>58,032.06</td>
<td>4.48</td>
</tr>
<tr>
<td>2009</td>
<td>1,816.18</td>
<td>-30.16</td>
<td>54,633.36</td>
<td>3.32</td>
</tr>
<tr>
<td>2010</td>
<td>2,063.73</td>
<td>13.63</td>
<td>62,045.78</td>
<td>3.33</td>
</tr>
</tbody>
</table>

*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 World Bank (WB) and Central Bank of Sudan (CBoS) data, we find that during the period 1970-1979 the average rate of foreign direct investment growth had been negative (-75.0). Its average contribution to the GDP (0.04) and can deduce that its contribution rate is very weak which proves the weakness of the flow of FDI to the Sudan. We can also notice that during 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 – where it had reached (-56.3) while its average contribution to the GDP (0.07). Hence the situation had not changed a lot than that in the seventies period. The most important reasons which contributed to make the flow of the FDI weak are as economic instability which 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 when 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 begging 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 where 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 optimism about a peaceful solution to the civil war in the south. 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 above 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 where it amounted 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.

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 in 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.

3.6. The Sectoral Distribution of the FDI during the period 1990-2011:

Table no.4 shows the flow of the FDI according to sectors during the period 1990-2006 in million dollars.

**Table (4). The Sectoral Distribution of the FDI during the period (1990-2006)**

(Million Dollars)

<table>
<thead>
<tr>
<th>Sector</th>
<th>Total FDI</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy and mining</td>
<td>11099.0</td>
<td>56%</td>
</tr>
<tr>
<td>industrial</td>
<td>4301.0</td>
<td>22%</td>
</tr>
<tr>
<td>Services</td>
<td>3886.0</td>
<td>20%</td>
</tr>
<tr>
<td>Agricultural</td>
<td>483.0</td>
<td>2%</td>
</tr>
<tr>
<td>Total</td>
<td>19769.0</td>
<td>100%</td>
</tr>
</tbody>
</table>

*Source: during 1990-95 the Public Investment Agency, the period 1996-1999 Ministry of Industry & Ministry of Energy & Ministry of Investments- the figures of investment in the Mining and Energy sectors according to agreements between Sudan government and the Foreign Executing Companies.*

Considering the above table, we notice that most of the flow of the investment into the Sudan has been directed to the mining and energy sector and thus due to the availability of natural resources the Sudan enjoys such as oil and gold where the total investment has amounted to 10.36 billion dollars with a rate of contribution of 54.4% out of the total flow of investment during the determined period. This investment has been exemplified in oil exploitation and exportation
and the construction of the oil pipe line for exportation (1610 kilometers). As for gold, it exploited by Chinese, Malaysian, French and Arabian countries. This is, therefore, signifies that most of these investments during this specified period were considered natural resources seeking FDI.

The investment in the services sector is considered to be of less risks and quick economic returns. Moreover, the deterioration of railways sector has led to an increase in demand for other means of transportation.

The agricultural sector (Agricultural and Animal Wealth) which contributes by 45% and includes about 80% of the total labor force employee has only been assigned 2% of the total foreign investment during the years 1990-2006. This is mainly due to the risks that are associated with the investment in the agricultural sector such as rarity of rainfall and unavailability of agricultural infrastructure financing and marketing problems. Besides the unclear prospects for the foreign investors about Sudan agricultural possibilities and its natural resources and insufficient knowledge of Sudan’s possibilities and powers that are found in this sector.

**Table (5). Number and Volume of Sectoral Distribution of Foreign investment in the period 2000-2011.**

<table>
<thead>
<tr>
<th>Year</th>
<th>Industrial Sector</th>
<th>Services Sector</th>
<th>Agricultural Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NO</td>
<td>Volume</td>
<td>NO</td>
</tr>
<tr>
<td>2000</td>
<td>32</td>
<td>69</td>
<td>42</td>
</tr>
<tr>
<td>2001</td>
<td>47</td>
<td>5618</td>
<td>50</td>
</tr>
<tr>
<td>2002</td>
<td>49</td>
<td>1942</td>
<td>31</td>
</tr>
<tr>
<td>2003</td>
<td>92</td>
<td>351</td>
<td>71</td>
</tr>
<tr>
<td>2004</td>
<td>115</td>
<td>357</td>
<td>85</td>
</tr>
<tr>
<td>2005</td>
<td>132</td>
<td>908</td>
<td>193</td>
</tr>
<tr>
<td>2006</td>
<td>183</td>
<td>1669</td>
<td>147</td>
</tr>
<tr>
<td>Year</td>
<td>Industrial Sector</td>
<td>Services Sector</td>
<td>Agricultural Sector</td>
</tr>
<tr>
<td>------</td>
<td>------------------</td>
<td>-----------------</td>
<td>---------------------</td>
</tr>
<tr>
<td></td>
<td>NO</td>
<td>Volume</td>
<td>NO</td>
</tr>
<tr>
<td>2007</td>
<td>139</td>
<td>3037</td>
<td>113</td>
</tr>
<tr>
<td>2008</td>
<td>85</td>
<td>1025</td>
<td>75</td>
</tr>
<tr>
<td>2009</td>
<td>96</td>
<td>845</td>
<td>57</td>
</tr>
<tr>
<td>2010</td>
<td>106</td>
<td>737</td>
<td>104</td>
</tr>
<tr>
<td>2011</td>
<td>16</td>
<td>2306</td>
<td>23</td>
</tr>
<tr>
<td>Total</td>
<td>1092</td>
<td>18864</td>
<td>991</td>
</tr>
</tbody>
</table>

*Note: This table doesn’t include petroleum and mining investment. Source: Ministry of Investment.*

**Figure (3). Volume of Sectoral Distribution of Foreign investment in Sudan during 2000-2011**

![Graph showing sectoral distribution of foreign investment](image)

Source: doing by researcher from table (3)

Considering the above table and the accompanying graph we notice that the industrial sector has been allotted considerable flow of foreign investment greater than the other two sectors in the years 2001, 2002, 2006 and 2007 where the value of it had reached 5618, 1942, 3037 and 1699 million dollars respectively. While the services sector had been given greater flows of the FDI in the rest of the years except the year 2003 when the sector of agriculture had received foreign
investments amounting to 373 million dollars – thus exceeding the other two sectors. As we have mentioned before the FDI directed to the agricultural sector has been the lowest during the period.

Hence, we can say that the services sector is the most favoured from the FDI during the period 2000-2011 where it amounted to 20055 million dollars due to foregoing reasons such as minor risks and quick returns. The industrial come next with an amount of 18864 million dollars and lastly the agricultural sector which has been allotted 2073 million dollars for the whole period.

3.7. Conclusion:

To conclude, we have so far given an overview of the Sudan economy including the real gross domestic product growth rate and the objectives of the development plans during the specified phases. We have also considered the trade liberalization in the Sudan discussing the Sudan trial to join the WTO. In addition to this, we have also touched the performance of the Sudan foreign trade during the periods 1970 to 2010.

Then the researcher has covered the FDI in the Sudan discussing the investment climate, the evolution of Sudan’s investment laws and the effects for investment in the Sudan. The researcher has tackled the flow of FDI in the Sudan during the period 1970-2010 in a descriptive analysis using the available statistical that has been obtained from the World Bank and the central bank of Sudan.

The main findings of this chapter are that, foreign trade performance in Sudan expressed that the balance suffers from a persistent deficit and then the balance of payment all the study period except some years that witnessed oil exportation. There are many factors responsible of this deterioration in the Sudanese economy
such as decline in production of exports goods like desertification and drought that taken place in eighties, decrease of world prices for some of important agricultural exports, insufficiency of government subsides, customs and duties put on exports and imports. So that these problems had affected the return of exports which had been reflected on economic growth rates.

The other main finding of this chapter that FDI concentrated on services sector with quicker returns that will not lead to a substantial improvement in the economic performance. This sector surpassed the other sectors with regarding to attraction of foreign investors. The agricultural sector has been largely overlooked as the FDI channeled to it. The fewer amounts of FDI flows to the Sudan has a lot of reasons such as, political instability, economic instability and the lack of supervision in implementation of the investment law.

In the following chapter, the researcher will tackle the impact of trade liberalization and the flow of foreign direct investment on the economic growth during the study period via an econometric analysis.
Chapter Four

Analytical Framework

4.1. Introduction:

Growth is a measure of the sustained in output or gross domestic product (GDP). It, therefore, helps to provide an indication of potential improvements in living standards and equity of life in the future. It is also considered as a main source for the development process in the countries. There have been additional new factors that can affect the economic growth in addition to the old factors. They had been tested in many empirical researches. Among these new factors are the foreign direct investment and trade liberalization.

The relationship between foreign direct investment (FDI) and economic growth is a well-studied subject in the development economics literature, both theoretically and empirically. Recently, renewed interest in growth determinants and the considerable research on externality-led growth, with the advent of endogenous growth theories (Barro, 1991; Barro and Sala-i-Martin, 1995), made it more plausible to include FDI as one of the determinants of long run economic growth. The interest in the subject has also grown out of the substantial increase in FDI flow that started in the late 1990's, and led to a wave of research regarding its determinants.

Also, the connection or relationship between trade liberalization and economic performance is one of the oldest topics in the field of international trade and development and it has invariably been polarized into two major schools of thought, those who favor free trade such as neoclassical on the one hand, and those who favor state intervention on the other. A lot of researches have studied the trade liberalization as a source of economic growth such as the study of Ana Cuadros

The aim of this study is to investigate the role of foreign direct investment and trade liberalization on the economic growth in the Sudan during the period 1972-2010 by using the new method of contigation and the ordinary least square method in analyzing the data. An econometric model has been presented which is composed of four functions; the first function expresses the growth function of the Sudan. The second one explains the factors affecting the foreign direct investment in the Sudan. The third one expresses the factors affecting the demand of Sudanese exports and the fourth one explain the factors that affecting Sudanese imports for the same period. The last two functions deal with the trade liberalization.

4.2. Econometric Model:

4.2.1. 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 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:

\[ Y_t = AFDI^\alpha \ OP^\beta \ DI^\gamma \ LR^\mu \ DU^\varphi \]  

(4-1)

Where:

- \( Y_t \) is the flow of output, real gross domestic product.
- \( FDI \) represented foreign direct investment.
- \( OP \) is the trade openness.
- \( DI \) 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 (4-1) with respect to the time we obtain:

\[ \log Y_t = \log (A FDI^\alpha OP^\beta DI^\gamma LR^\mu DU^\varphi) \]  

(4-2)

\[ \log Y_t = \log A + \log FDI^\alpha + \log OP^\beta + \log DI^\gamma + \log LR^\mu + \log DU^\varphi \]  

(4-3)

\[ \log Y_t = \log A + \alpha \log FDI + \beta \log OP + \gamma \log DI + \mu \log LR + \varphi \log DU + U_t \]  

(4-4)

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 knowledge 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 can not 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 domestic investment relationship with the 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).
Where the relationship between literacy rate and economic growth is expected to be positive as 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 because the revenues of petroleum exports can promote the different economic activities and then the economic growth.

4.2.2. The Foreign Direct Investment Function:

The following equation aims to explain the determinants of foreign direct investment in the Sudan by providing an econometric analysis of the factors affecting the FDI over the years 1972-2010. These factors are trade openness, number of population, literacy rate, inflation rate and exchange rate. This function has been set on the economic theory of Aliber (1971), the study of Seim (2009), the study of Akin et al. (2011), the study of Kiat (2008) and the study of 8th Global Conference on Business and Economics (2008).

\[ FDI_t = f(\text{OP}, \text{POP}, \text{LR}, \text{INF}, \text{EX}) \]  \hspace{1cm} (4-5)

Where:

\( FDI_t \): is the foreign direct investment.

\( \text{OP} \): is the trade openness.

\( \text{POP} \): is the number of population.

\( \text{LR} \): is the Adult literacy Rate.

\( \text{INF} \): is the inflation rate.

\( \text{EX} \): is the exchange rate.
It is possible to transfer the previous function to a mathematical equation taking the equilibrium state or the long run where the mathematical formula will be:

\[ FDI_t = C_0 (OP)^{C_1} (POP)^{C_2} (LR)^{C_3} (INF)^{C_4} (EX)^{C_5} e^{ut} \]  \hspace{1cm} (4-6) 

To measure the trade openness elasticity, population elasticity, literacy rate elasticity, inflation rate elasticity and exchange rate elasticity we use the logarithm in both sides of the equation to get the following one:

\[ \log FDI_t = \log C_0 + C_1 \log OP + C_2 \log POP + C_3 \log LR + C_4 \log INF + C_5 \log EX + U_t \]  \hspace{1cm} (4-7) 

Where \( U_t \) is the stochastic error.

According to the economic theory, trade openness is expected to present a positive relationship to foreign direct investment flow, since greater openness of the economy provides greater incentives for foreign direct investment. Openness is found to be positively and significantly related to FDI inflows in different empirical studies such as Sing and Jun (1995), Lucas (1993), Harms and Ursprung (2002) and Jensen (2003) (Seim, 2009). Trade openness is an important factor to investors who usually prefer countries with relatively liberal trade regimes. Also when markets are open and are free from barriers then private investors get better opportunity with reduced uncertainty because these barriers might have restricted their business. Culem (1988) states that a high level of imports into the host area may indicate a high level of penetration by foreign companies that begin exporting to the host countries and switch later to FDI (Akin et al., 2011).

As for the relationship between the number of population and foreign direct investment, it is expected to be positively related to FDI, the larger the consumer demand (represented by population), the greater the incentive for investment.
While the relationship between literacy rate and foreign direct investment is expected to be positive, since the higher the literacy rates in a country, the higher the flow of FDI in it and vice versa. A number of empirical studies such as the study of Borensztein, De Gregorio and Lee (1998) find that the net positive impact of FDI on growth is larger when the host country labor force is highly educated.

As for the relationship between inflation and foreign direct investment, it is expected to be negative, since the higher the rates of inflation, the lower the level of foreign investment. Akinboade, Siebrits and Roussot (2006) state that “low inflation taken to be a sign of internal economic stability in the host country. High inflation indicates the inability of the government to balance its budget and the failure of central bank to conduct appropriate monetary policy.” i.e., inflation can be used as an indicator of the economic condition of the host country, but the differences between high inflation and low inflation is not distinct (Ahn, Adji and Willet, 1998). Lipsey and Chrystal (2006) offer a definition for hyper inflation. They stated it as “inflation is so rapid that money ceases to be useful as a medium of exchange and store of value.” But they also concede that countries with inflation rate higher than 50%, to some 200% plus, have proven to be manageable as the population adjusts in real term. These literature have highlighted that inflation reduced the value of the currency. The impact on growth is negative, and in turn, a negative impact on FDI. Also, a study done by Glaister and Atanasova (1998) mention the effect of high inflation had on employment in Bulgaria. Although they did not draw direct reference to the relationship between FDI and inflation, they seem to suggest that high inflation can cause various problems within the country to reduce its attractiveness to foreign investors. Coskun (2001) suggested that lower inflation and interest rate coupled with other factors such as “full membership with EU” and high economic growth can attract foreign investors and increase the FDI inflow to Turkey. A study by Wint and Williams (2002) show that
a stable economy attracts more FDI, thus a low inflation environment is desired in countries that promote FDI as a source of capital inflow.

While the relationship between exchange rate (Ex) and the foreign direct investment is positive according to our definition for the exchange rate which is defined as a number of units of Sudanese pound per one dollar. A decrease in the value of the Sudanese pound that means a decrease in the Sudanese prices - a fact that leads foreigner investors to increase their demand of local requirements that they need for their investments and consequently an increase in the quantities of those requirements. Blonigen (1997) states that, when a country’s currency devalues, it is viewed as an opportunity for foreign investors to purchase assets at a reduced cost. This is especially true when foreign firms have identified specific assets in their targeted markets. Ahn et al. (1998) noted that mixed sentiment toward increasing FDI competitiveness by devaluing currency. However, they find that empirical research generally shows a positive impact.

The export and import functions were set on the economic theory of Branson (1989), the study of Phillips and Hanson (1990) and the study of Stephen (2002).

4.2.3. The Demand Function of Exports:

The most important factors of exports are the relative prices, the gross domestic product with constant prices for the most important trade partners and the exchange rate. This can be expressed in the following mathematical formula:

\[ Q_x = x \left( \frac{P_x}{P_w}, Y_w, E_x \right) \]  

(4-8)
Where:

**Qx:** stands for the quantities of Sudanese exports with the constant prices with the year (t).

**Px:** represents the index number of unit price for export.

**Pw:** the index number of world prices.

**Yw:** The Gross Domestic Product to the most important five trade partners for Sudan with constant prices.

**Ex:** the exchange rate of Sudanese Pound (number of units of Sudanese pound per one dollar).

The increase in relative prices of exports $RP_x$ (the percentage of the index number for one unit of export to the index number of the world price) means that the domestic prices are higher than the world prices. This leads to a decrease in amount of national exports, that is to say the relationship between them is negative.

While the relationship between real gross domestic product of the trade partners of Sudan and the quantity of exports is positive because the increase of RGDPP in these countries leads to the increase in their purchase of goods among which the imported goods from Sudan.

As to the relationship between exchange rate (Ex) and the Sudanese exports, it is positive according to our definition for the exchange rate. A decrease in the value of Sudanese pound that means a decrease in the Sudanese export prices in the world markets- a fact that leads foreigner consumers to increase their demand of Sudanese exports and consequently an increase in the quantities of Sudanese goods exports.
It is possible to transfer the previous function to mathematical equation taking
the equilibrium state or the long run where the mathematical formula will be:

\[ Q_{xt} = \alpha_0(P_x/P_w) \alpha_1 (Y_w) \alpha_2 (E_x) \alpha_3 e^{ut} \]  \hspace{1cm} (4-9)

To measure the price elasticity, income elasticity and exchange rate elasticity
we use the logarithm in both sides of the equation to get the following one:

\[ \log Q_{xt} = \log \alpha_0 + \alpha_1 \log P_x + \alpha_2 \log Y_w + \alpha_3 \log E_x + U_t \]  \hspace{1cm} (4-10)

Where \( U_t \) is the stochastic error.

4.2.4. The Demand for Import Function:

The demand for imports depends on the relative prices, real gross domestic
product of the country and the exchange rate. This demand of imports function for
the Sudan can be expressed via a mathematical formula as follows:

\[ Q_{mt} = m(P_m/P_d, Y, E_x) \]  \hspace{1cm} (4-11)

Where:

**Qm**: the quantity of the Sudanese imports with constant prices per anum (t).

**Pm**: denote the index number of unit price of Sudanese imports.

**Pd**: the consumer price index for Sudan.

**Y**: the GDP with constant prices in Sudan.

**Ex**: the exchange rate of the Sudanese pound.

According to the economic theory an increase in relative prices of imports
\( RP_m \) (The percentage of the index numbers of unit price of imports to the domestic
price) leads to a decrease in the quantity of Sudanese imports – that is to say the relationship between them is negative.

While the relationship between the Sudanese real gross domestic product and the quantity of imports is positive because an increase in RGDP leads to increase in purchased goods in Sudan including the imported goods.

As for the exchange rate, the relationship between it and the demand of imports is negative according to the pervious definition of exchange rate, an increase in exchange rate means a decrease in the domestic value of currency that is an increase in the prices of goods in the world market which leads consumers to increase their demand on domestic goods, and thus the volume of imports would decrease.

It is possible to transfer the previous function to a mathematical equation taking the equilibrium state or the long run where the mathematical formula will be:

\[ Q_{mt} = \beta_0 \left( \frac{P_m}{P_d} \right) \beta_1 (Y) \beta_2 (E_x) \beta_3 e^{ut} \] (4-12)

To measure the price elasticity, income elasticity and exchange rate elasticity we use the logarithm in both sides of the equation to get the following one:

\[ \log Q_{mt} = \log \beta_0 + \beta_1 \log R P_m + \beta_2 \log Y + \beta_3 \log E_x + U_t \] (4-13)

Where \( U_t \) is the stochastic error.
4.3. Data and variables:

The data has been taken on the basis of per annum for the periods 1972-2010. The value of variables is in million Sudanese pounds. This data has been taken from the following sources:

- Central bank of Sudan.
- International Monetary Fund (IMF) and International Financial Statistics (IFS).
- The Ministry of Finance and National Economy.
- Central statistical Bureau.
- Human Development Reports (HDR).
- World Bank.

**Economic Growth Rate:**

Is the growth rate of real GDP (annual %).

**Foreign Direct Investment:**

Is the bilateral flow of foreign direct investment (FDI) from country (x) to the Sudan. The data of FDI had been obtained from the balance of payment data of the Sudan during the period of the study.

**Trade Openness:**

A variable representing the level of exports plus imports of goods of Sudan as a percentage of its gross domestic product (GDP). This measure is most commonly used in empirical studies. It is clearly defined, well measured and also available for most countries; therefore we apply this ratio of trade openness in this study as an indicator of the trade liberalization.
Domestic Investment:

These are the assets and investment that are constructed by government and private investors since they are residents within the state boundaries (Sudan) during the study period.

Adult literacy rate:

It is the proportion of the adult population aged 15 year and over. Literacy rate (annual %) is used as the proxy of human capital stock (education). Literacy has traditionally been described as the ability to read and write. It is a concept claimed and defined by a range of different theoretical fields. The United Nation Educational, Scientific and Cultural Organization (UNESCO) define literacy as “ability to identify, understand, interpret, create, communicate, compute and used printed and written materials associated with varying context. Literacy involves a continuum of learning in enabling individuals to achieve their goals, to develop their knowledge and potential, and to participate fully in their community and wider society.

Exports of Petrol (Dummy Variable):

It shows to the exportation of Sudanese petroleum where the period that witnessed exportation of petrol takes the value (1). The other period takes the value (0) where there is no exportation during it.

Number of Population:

The potential demand of local consumers represented by the population of Sudan over the study period (1972-2010).
**Inflation:**

Inflation is a continuous rise in the general level of prices of goods and services in an economy over a period of time (usually a year). When the general price level rises, each unit of currency buys fewer goods and services. Consequently, inflation reflects an erosion in the purchasing power of money – a loss of real value in the internal medium of exchange and unit of account in the economy. A chief measure of price inflation is the inflation rate (annual %).

**Official Exchange Rate:**

It is the number of units of the Sudanese pound per one unit of foreign currency, e.g. American dollar.

**Real Gross Domestic product:**

The total added values for all productive units of the different productive parts-computed with constant prices on the base year 1982.

**The Real Gross Domestic Product of the World:**

It has been computed on the basis of the average arithmetical weight for the real gross domestic product for the five biggest trade partners for Sudan - namely European Union Countries, Saudi Arabia, China, Egypt and Japan. Those countries have been selected on the basis of their trade volume with the Sudan during the phase 2003-2010, as their trade volume with Sudan is greater than 80%. Then the value of RGDPP has been converted from million dollars into million Sudanese pounds on the basis of the prevailing exchange rate.
Quantity of Exports:

This has been obtained on the basis of the value of export goods divided by the
index number of unit price of exports. It represent the value of purchased goods by
the residents of the domestic country to the foreigners on the basis of the prevailing
prices in the market, which involves the cost of transport and export fees that has
been taken on the basis of the prices of 1982.

Quantity of Imports:

This had been obtained on the basis of the value of import goods divided by the
index number of unit price of the Sudanese imports. It represents the value of
purchased goods from the foreigners to the residents in the domestic country on the
basis of the value (CIF) which is comprised of cost of goods, insurance fees and
transportation costs. This has been taken on the basis of the prices of the year 1982.

Index Number of Export Unit Prices:

It measures the general level of the prices of exported goods of Sudan.

Index Number of Import Unit Prices:

It measures the general level of the prices of imported goods to Sudan.

Consumer price Index (The Cost of living):

It measures the general level of prices for a basket of goods and services that a
family consumes in the Sudan including the imported goods and services.

Index Number of the World Price:

It is preferable an index number for consumer prices for all the countries of the
world. The data has been taken from IMF data base.
4.4. Econometric Method:

4.4.1. Unit Root Tests:

Before turning to the test for co-integration, one must determine the order of integration of the variables. Using the Augmented Dickey-Fuller (ADF) test, the unit-root hypothesis is tested in the level of variables in terms of the overall and sectoral level, testing for unit-root test with constant and linear trend as well as in their difference. The lag length in the ADF regression is selected striking a balance between the lag length chosen by the Akaike Information Criterion (AIC) and the t-test of the lags. (ADF) is the Augmented Dickey-Fuller test which is used for time series properties. Because, any empirical work based on time-series data should first be tested for stationary before running any estimation to avoid the problem of spurious regression and misleading. Therefore, analysis of time-series properties of variables used in macroeconomic research is particularly important when examining the relationship between variables that exhibit a common trend [Engle and Granger (1969), Johnson (1990)]. A number of tests of stationarity are available such as the above Dickey-Fuller test and Phillips-Peron test.

The researchers had suggested several procedures to test for the order of integration. The most popular ones are Augmented Dickey-Fuller test (ADF) due to Dickey and Fuller (DF).The (ADF) test relies on rejecting a null hypothesis of unit-root( testing for unit root with constant and linear trend) in favor of the alternative hypothesis of stationary; that is to say, (ADF) is consisting of two parts:

(I) Testing Unit-roots (ADF test with constant) as follows:

\[ \Delta y = \mu + (\beta - 1)y_{t-1} + \sum_{i} \lambda \Delta y_{t-1} + \epsilon_{t} \]

(4-14)
Where:

\[ Y: \text{Indicates the variable under study,} \]

\[ \Delta: \text{Is the first difference operator; and} \]

\[ \mu: \text{Is an error term, or indicates stationarity random error,} \]

\[ \mu_t \sim iid \left(0, \sigma^2 \right), \text{And } \varepsilon_t: \text{ is a white noise disturbance.} \]

\[ t: \text{Is time period, and;} \]

\[ s: \text{is number of lags for the dependent variable which is chosen to ensure that the residuals are white-noise. The t-statistic of } (\beta-1) \text{ is used to test the null hypothesis that this coefficient is equal to zero (i.e. that } \beta = 1). \text{ To determine the proper lags for each variable, the lag length are chosen by Akaike Information Criterion and t-test of lag.} \]

(2) Testing for Unit-roots (ADF with linear trend) as shown in equation (4-15) below:

\[ \Delta y = \mu + \alpha T + (\beta - 1)y_{t-1} + \sum \lambda \Delta y_{t-1} + \varepsilon_t, \]

Where:

\[ \lambda: \text{indicates trace statistics.} \]

In light of the above, while there is more than one method of conducting co-integration tests, the empirical testing in this study uses the multivariate co-integration method developed by Johansen and Johansen and Jueslius (1990, 1992). This approach is preferred to the Engle-Granger (1969) method for several reasons. Engle-Granger procedure depends upon the normalization of the variables
and may be sensitive to the choice of dependent and independent variables in the co-integrating equation. Accordingly, it is possible that the arbitrary choice of one variable as the dependent variable and the other as independent variable may lead to the conclusion that the variables are co-integrated, whereas reversing the choice of dependent and independent variables may indicate no co-integration. Furthermore, because the Engle-Granger procedure relies on a two-step estimator, in which the first step is to generate the residuals from the co-integration regression and the second step is to use the residual generated from step one to test for unit roots, any errors introduced in the first step also affects the second step.

On the other hand, the Johansen-Jueslius approach provides a very flexible format for investigating the properties of the estimator under various assumptions about the underlying data generating process. Another advantage is that, unlike the Engle-Granger co-integration method, Johansen Jueslius procedure is capable of determining the number of co-integration vectors in the relationship. In the case of more than two variables, Banerjee et.al (1993) has shown that the Johansen-Jueslius procedure is preferred, and Phillips has also indicated that this procedure has optimal properties in terms of symmetry unbiasedness, and efficiency. In light of this, econometricians compared the performance of the Co-integration tests using a Monte Carlo study, and found that the Johansen-Jueslius procedure is the most powerful even for the bivariate system. They showed that it has consistent estimates, even if the errors are non Gaussian and the dynamics are not known.

The Johansen-Jueslius method applies the maximum likelihood procedure to determine the presence of co-integrating vectors in non-stationary time series. Furthermore, this method provides two different tests, the trace test and the maximum eigenvalue test, to determine the number of co-integrating vectors (Tsay, R.2002). The presence of significant co-integrating vectors indicates a
stable relationship between the relevant variables. Johansen (1991) has shown that both tests will have non-standard distribution under the null hypothesis, even in large samples. Accordingly, Johansen and Juselius (1988, 1992) approach to testing for co-integration, considers a p-dimensional vector auto-regression (VAR) Model. This can be analyzed by utilizing (OLS) procedure, after running data prosperities and stationarity for equations of the study. In this study, the use of this econometric analysis is motivated, on one hand, by interest in estimating relationship between economic growth, FDI, trade openness, literacy rate, domestic investment and petroleum exportation and the relationship between variables in the other equations related to our study such as the equations of FDI, quantity demand of exports and quantity demand of imports, and, on the other hand, by statistical properties of considered time series.

4.4.2. 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) and Phillips perron (PP) on the basis of level and the first difference by applying eviews 5 programme. The results of this test have been presented in table (1) below:
Table (1): Results of Unit Root Test for All the Logarithmic Data by Using Augmented Dickey Fuller.

<table>
<thead>
<tr>
<th>Variables</th>
<th>ADF (without trend)</th>
<th>ADF (with trend)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Level 1(0)</td>
<td>First difference 1(1)</td>
</tr>
<tr>
<td>LNY</td>
<td>1.454866</td>
<td>2.590685</td>
</tr>
<tr>
<td>LNFDI</td>
<td>0.311982</td>
<td>7.144522**,** ***</td>
</tr>
<tr>
<td>LNOP</td>
<td>2.337246</td>
<td>6.545522**,** ***</td>
</tr>
<tr>
<td>LNDI</td>
<td>0.962516</td>
<td>5.946568**,** ***</td>
</tr>
<tr>
<td>LNLRI</td>
<td>0.099889</td>
<td>5.563874**,**</td>
</tr>
<tr>
<td>LNINF</td>
<td>2.300698</td>
<td>8.104126**,** ***</td>
</tr>
<tr>
<td>LNPOP</td>
<td>0.332654</td>
<td>6.422121**,** ***</td>
</tr>
<tr>
<td>LNEX</td>
<td>0.815123</td>
<td>3.699714**,** ***</td>
</tr>
<tr>
<td>LNREGDP</td>
<td>1.914209</td>
<td>2.681899***</td>
</tr>
<tr>
<td>LNQx</td>
<td>1.156471</td>
<td>6.663951**,** ***</td>
</tr>
<tr>
<td>LNYw</td>
<td>0.593931</td>
<td>3.296702**,** ***</td>
</tr>
<tr>
<td>LNRp</td>
<td>0.080786</td>
<td>4.281578**,** ***</td>
</tr>
<tr>
<td>LNQm</td>
<td>1.654476</td>
<td>6.715594**,** ***</td>
</tr>
<tr>
<td>lnRPm</td>
<td>2.342334</td>
<td>6.605652**,** ***</td>
</tr>
</tbody>
</table>

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

Source: from the tables of eviws (5) programme.
- Critical values of ADF test (without trend) according to Mackinnon as following:
  - for level: 3.615588 at significance level 1%, 2.941145 at significance level 5%, 2.609066 at significance level 10%.
  - for first difference: 3.621023 at significance level 1%, 2.943427 at significance level 5%, 2.610263 at significance level 10%.
  - for second difference: 3.626784 at significance level 1%, 2.945842 at significance level 5%, 2.611531 at significance level 10%.
- Critical values of ADF test (with trend) according to Mackinnon as following:
  - for level: 4.219126 at significance level 1%, 3.533083 at significance level 5%, 3.198312 at significance level 10%.
  - for first difference: 40226815 at significance level 1%, 3.536601 at significance level 5%, 3.200320 at significance level 10%.
  - for second difference: 4.234972 at significance level 1%, 3.540328 at significance level 5%, 3.202445 at significance level 10%.
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 can not reject the null hypothesis that states the time series has a unit root a fact that means it is nonstationary on the level.

The stationary of time series can be explained as follows:

4.4.2.1. Firstly: According to the Augmented Dickey Fuller Test:

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 trade partners of the Sudan (RGDPP), 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 where the time series are stationary at first difference except the real gross domestic product of trade partners of the Sudan (RGDPP) which is stationary at the second difference and literacy rate (LR) which is stationary at the level at significant level 5%.
### Table (2): Results of Unit Root Test for All the Logarithmatic Data by Using Phillips Perron Test.

<table>
<thead>
<tr>
<th>Variables</th>
<th>PP(without trend)</th>
<th></th>
<th></th>
<th>PP (with trend)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Level 1(0)</td>
<td>First difference 1(1)</td>
<td>Second difference 1(2)</td>
<td>Level 1(0)</td>
<td>First difference 1(1)</td>
<td>Second difference 1(2)</td>
</tr>
<tr>
<td>LNY</td>
<td>1.456123</td>
<td>2.230894</td>
<td>3.519***</td>
<td>2.312787</td>
<td>2.204068</td>
<td>3.697***</td>
</tr>
<tr>
<td>LNFDI</td>
<td>0.481192</td>
<td>7.908920***</td>
<td>-</td>
<td>2.811557</td>
<td>7.744353***</td>
<td>-</td>
</tr>
<tr>
<td>LNOP</td>
<td>2.292491</td>
<td>7.143605***</td>
<td>-</td>
<td>2.391841</td>
<td>12.14042***</td>
<td>-</td>
</tr>
<tr>
<td>LNDI</td>
<td>0.962516</td>
<td>5.946568***</td>
<td>-</td>
<td>0.98354</td>
<td>5.907475***</td>
<td>-</td>
</tr>
<tr>
<td>LNLRI</td>
<td>0.076785</td>
<td>5.547314***</td>
<td>-</td>
<td>3.039467</td>
<td>5.424218***</td>
<td>-</td>
</tr>
<tr>
<td>LNINF</td>
<td>2.179532</td>
<td>8.167433***</td>
<td>-</td>
<td>0.4235</td>
<td>8.266293***</td>
<td>-</td>
</tr>
<tr>
<td>LNPOP</td>
<td>0.333673</td>
<td>6.411901***</td>
<td>-</td>
<td>1.810955</td>
<td>6.329871***</td>
<td>-</td>
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<td>3.699714***</td>
<td>-</td>
<td>1.455043</td>
<td>3.663510***</td>
<td>-</td>
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<tr>
<td>LNRGDPb</td>
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<td>2.313741</td>
<td>3.7205078***</td>
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<tr>
<td>LNQx</td>
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<td>-</td>
<td>1.855984</td>
<td>4.261074***</td>
<td>-</td>
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<tr>
<td>LNYw</td>
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<td>LNQm</td>
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<td>-</td>
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<td>10.23154***</td>
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<td>lnRPm</td>
<td>2.509645</td>
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<td>-</td>
<td>2.510950</td>
<td>6.513367***</td>
<td>-</td>
</tr>
</tbody>
</table>

* ** *** indicates the stationary of variables at significance level of 1%, 5%, 10% consequently. Source: from the tables of eviws (5) programe.

- Critical values of PP test (without trend) according to Mackinnon as following:

- for level: 3.615588 at significance level 1%, 2.941145 at significance level 5%, 2.609066 at significance level 10%.

- for first difference: 3.621023 at significance level 1%, 2.943427 at significance level 5%, 2.610263 at significance level 10%.

- for second difference: 3.626784 at significance level 1%, 2.945842 at significance level 5%, 2.611531 at significance level 10%.

- Critical values of PP test (with trend) according to Mackinnon as following:

- for level: 4.219126 at significance level 1%, 3.533083 at significance level 5%, 3.198312 at significance level 10%.

- for first difference: 4.0226815 at significance level 1%, 3.536601 at significance level 5%, 3.200320 at significance level 10%.

- for second difference: 4.234972 at significance level 1%, 3.540328 at significance level 5%, 3.202445 at significance level 10%.

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4.4.2.2. Secondly: According to the Phillips perron Test:

According to Phillips perron test which includes the intercept and without trend, the time series are nonstationary at the level. After taking the first difference of time series, the latter becomes stationary at the first difference except the real gross domestic product (RGDP) of the Sudan which is stationary at the second difference at significant level 5%.

When the test had been applied by intercept and trend, the same results had been obtained where the time series became stationary at the first difference except the real gross domestic product of trade partners of the Sudan (RGDPP) which is stationary at the second difference at significant level 5%.

It is obvious from the table (2) that the null hypothesis will not be rejected which states that the study variables have a unit root at the level where 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 contigration, the study applied the Johanson and Juselus method (1990) for testing contigration. The Johanson and Juselus method (J-J) examines the number of the relationships of contigration in the system of (VAR) and this method involving the number of lags for elimination of auto regression.

4.4.3. Johanson and Juselus Test for Contigration:

According to the economic growth function it was clear from the tests of trace and maximum eigenvalue the rejection of null hypothesis that states the absence of contigration between variables at the significance level 5%. It is obvious that the trace test indicates one contigration egn 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).

As for the foreign direct investment function (FDI), it was clear from the trace test that the null hypothesis which states no contigiration between the variables at 5% level has been rejected. It has been clear from the trace test there was one contigiration egn where the calculated value for trace statistic that amounts (125.5) is greater than the critical value which amounted to (95.8). As for the maximum eigenvalue test, it was clear that there is one contigiration egn among the variables where the calculated value (58.3) is greater than the critical value that amount (40.1). These results indicate the existence of an equilibrium long run relationship among the FDI and each of the trade openness (OP), the total number of population, Literacy rate (LR), inflation (INF) and exchange rate (EX).

As for the demand of export function, the results of trace test that there is one contigrating egn(s) whereas the calculated values for trade statistics which amounts to (50.2) is greater than the critical value (47.9). As for the maximum eigenvalue test, the null hypothesis has been accepted since there is no contigiration among the variables at 5% level. Despite of these results, the trace test result is enough to
prove the existence of an equilibrium long run relationship among the demand of export and each of relative prices, real gross domestic product of trade partners of Sudan (RGDPP) and exchange rate (EX).

As for the demand import function, showed the existence of one contigraion egn where the calculated value of trade statistics was (48.1) greater than the critical value (47.9). The maximum eigenvalue test indicates no contigraion at 5% level. Even though the result of trace test is sufficient to prove the existence of an equilibrium long run relationship among the variables (see appendix). Consequently, the equations of the study can be evaluated by using the ordinary least square method (OLS) using the eviews programme.

4.4.4. Results of the Economic Growth Function Analysis:

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

\[ LNY = 10.12 + 0.028 \, \text{LNFDI} - 0.30 \, \text{LNOP} + 0.07 \, \text{LNDI} - 0.29 \, \text{LNLR} + 0.18 \, DU \]

\[ T = (5.147) \, (1.689) \, (-30368) \, (2.558) \, (-0.5161) \, (1.500) \]

\[ P = (0.000) \, (0.1001) \, (0.002) \, (0.015) \, (0.609) \, (0.143) \]

\[ R^2 = 0.93 \, \quad R^2 \hat{=} 0.91 \, \quad DW = 1.41 \, \quad F = 68.2 \]

\[ P (F) = (0.000) \]
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 (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 indicated that that the model is statistically homogenous.

The regression results showed 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 by 1% leads to an increase in the economic growth by 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 a remarkable improvement in the economic growth of the Sudan during the study period.

It has been indicated from the analysis of FDI in the Sudan in chapter three; 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 were directed towards small industries, while the agricultural sector has been largely overlooked as indicated by smaller amount of the foreign direct investment channeled to it. Moreover, the period of 1972 -1990 witnessed a decline in the
volume of FDI due to political instability caused by the civil 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 attributed to the fact that Sudan imports surpass the exports during almost of the study period where the trade balance suffered from permanent deficit during the period 1972 until 2010 with the exception of some years in the 3rd phase that witnessed the export of petrol. In addition to the fact that most of Sudan exports are agricultural products. These agricultural exports had been exposed to problems in production during the eighties due to desertification which hit the country leading to a great decrease in production of crops that depend on rain water (except cotton), which contribute to a large extent in the total revenue of exports such as gum Arabic, sorghum, sesame and groundnuts. In addition to a decrease in the number of the exported animals especially those which feed on fodder, a fact that led to a decrease in its contribution to the total revenue of exports that consequently resulted in a negative effect on the economic growth.

As for the nineties, the period witnessed a decrease in the agricultural exports contribution due to decrease in the world prices for some important agricultural exports such as cotton, sesame, sorghum and groundnuts, a fact that leads to a decrease in their revenues. Furthermore, it is found that the agricultural sectors is characterized by the weakness of productivity due to application of traditional agricultural procedures and the usage of local seeds and the decrease of the agricultural inputs.
Among the most, important problems that face the agricultural sector and affecting revenues from exports, its dependence on foreign markets in order to acquire machinery, means of transportation and other agricultural equipments and fuel.

On the other hand, the prices of the industrial goods had risen enormously whereas the prices of the agricultural goods have not witnessed a big increase but minor one. Consequently, the importation of these industrial goods has led to an increase in costs of agricultural products. Hence, this has a direct negative effect on the exports revenues, and consequently on the economic growth. In addition to the problems facing the agricultural sector the weakness of the infrastructure that facilitates exports transportation including construction of highways, ports and grainaries.

Furthermore, the agricultural sector suffers from the insufficiency of government support which leads to decrease in production and productivity. Adding to this, the high rate of custom duties put on exports and imports has affected the revenues from exports. Also, the fluctuations in the world prices and competition are one of the problems that face the agricultural exports.

As for the domestic investment, it has a positive effect on the economic growth. The increase in the domestic investment at the rate 1% leads to an increase in the economic growth rate by (0.07%). 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. Moreover, 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 conflicts in many projects areas 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 expressed by 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 impact of education on the economic growth.

Despite of the expansion in higher education the Sudan has witnessed, which resulted in huge numbers of graduates- most of whom- have remained unemployed - a fact leads to an increase in unemployment rates – a consequence which the study has shown.

As for the petroleum exportation variable, it has been clear from the results analysis that it is insignificant. This can be attributed to the fact that the petroleum revenues had not been included in the budget until after 2007. Hence, it has been clear in the analysis as insignificant. Generally speaking, this can not ignore the important role of petroleum revenues in the countries development. Also, 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, we may advocate that the period was not enough for giving a convincing judgment about the extent of the effect of petroleum exports on the economic growth. This is despite of the
improvement that the trade balance witnessed due to petroleum revenues that was reflected in a tangible decrease in the deficit.

Also the insignificant result of petroleum exportation can be expressed 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).

4.4.5. The Results of the Foreign Direct Investment Analysis:

After the estimation of the foreign direct investment function no (4-7) through the usage of ordinary least square (OLS) method, we have obtained the following results:

$$\ln FDI = -95.98 + 0.035 \ln OP + 4.74 \ln POP + 6.32 \ln LR - 1.39 \ln INF + 0.73 \ln EX$$

$T = (-1.37)$ $(0.04)$ $(0.86)$ $(0.911)$ $(-4.91)$ $(3.13)$

$P = (0.18)$ $(0.97)$ $(0.39)$ $(0.37)$ $(0.00)$ $(0.00)$

$R^2 = 0.95$ $R^2_\text{adj} = 0.95$ $DW = 1.79$ $F = 153.03$ $P(F) = 0.000$

It is obvious from the analysis results the significance of inflation and exchange rate variable at 5% level. It is also clear the insignificant of the rest of the model variables such as trade openness, population numbers and literacy rate. As value of $R^2=0.95$, it denotes that 95% is among the factors which affects the FDI, is included in the model and the 5%, the reminder, is embodied in the random variable. From Durbin-Watson value, it has been clear that the model never suffers from autoregression. As for the value of F test, it has reached $153.05$ a significance of 5% which means that the model is statistically homogeneous.

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It has also been clear from the estimation that the trade openness is insignificant. This can be attributed to the nature of Sudan exports that depends on agricultural products. It is known that FDI in the agricultural sector is the weakest among the other sectors and this may be considered as a reason for insignificance of trade openness taking into consideration the problems and obstacles that has been facing the agricultural sector. Hence, this may be considered as a major repelling for investors in this sector. Moreover, the main Sudan imports consist of equipments, machinery and means of transportation necessary for development processes. This has also been disattractive for foreign investment as we have notice that the biggest portion of investment goes to services of quicker returns. This result is similar to the results of some empirical studies such as the studies of Busse and Hefker (2007) and Globerman and Shapiro (2000) which conclude that openness is statistically insignificant and does not affect FDI inflows.

For the population number variable, the results have illustrated its insignificance. This is because most of FDI in Sudan is confined to a limited sector such as the financial institutions which serve certain strata like expatriates and high income earners. In addition, the FDI in Sudan is confined to certain geographical areas such as the Red Sea area and Khartoum which provide their services to the middle class strata that represent a small percentage of the population.

As for the literacy rate variable, the results have shown that it is insignificant to the foreign direct investment. This can be attributed to the fact that most of the FDI projects need unskilled labor especially in the building and constructions sectors, restaurants and the distribution of food substances and refreshments. Most of these investments have employed foreign labor while the Sudanese labor comes next as in the first case the investors bring their own labor force needed from their own countries such as China and Turkey. This result is similar to the result of the
study that had been done by Cheng and Kwan (2000), who estimated the effect of the determinants of FDI in 29 Chinese regions from 1985 to 1995, this study found that the effect of education was positive but not statistically significant. As well as the study of Hanson (1996) finds that the adult literacy rate was not significant determinant to FDI (Akin et al., 2011).

As for the inflation, it is significance at level 5% and it had a negative effect on the FDI. This means an increase in inflation per 1% leads to a drop of 1.39% in foreign direct investment. This result agrees with the economic theory and complies with the Sudan’s situation as being suffered from high rates of inflation especially in recent years.

As for the exchange rate is a significance of 5%. It has a positive effect on foreign direct investment, a fact that complies with the economic theory. This means a devaluation of exchange rate by 1% leads to an increase in the FDI by 0.73%.

4.4.6. The Results of the Demand for Exports Function Analysis:

After the analysis of the export demand function no (4-10) via the method of ordinary least square (OLS), we are faced with autocorrelation problem and it has been rectified. Hence, we have come to the following results:

\[ \ln Q_x = 0.14 \ln NRP_x + 0.37 \ln Y_w - 0.43 \ln EX \]

\[
\begin{align*}
T & = (1.02) \quad (10.8) \quad (-3.6) \\
P & = (0.32) \quad (0.000) \quad (0.001) \\
R^2 & = 0.58 \quad R^2 \backslash & = 0.54 \quad DW = 1.68
\end{align*}
\]
The results achieved have shown that the parameters of the variables of the model are significant at 5% level – except the parameter of export relative prices variable which is insignificant. As for the value of $R^2=0.58$ that shows the factors affecting the quantity demand of exports is the variable included in the model. The remaining 42% is found in the random variable.

As for the relative prices variable for exports, the analysis has shown that it is insignificant. This can be explained that the Sudan exports are inelastic and the country is obliged to export for acquiring hard currencies and thereby accepts lower prices for the export goods.

Considering the real gross domestic product for trade partners for Sudan, it has been found that it has a positive impact on the export demand. An increase of trade partners income by 1% leads to an increase of export demand at a rate of (0.37%). We notice the decrease of trade partners RGDP elasticity a fact that can be interpreted the believe that the export goods of Sudan are of low quality. This means if their income has increased, they would move to other goods of higher quality.

For the exchange rate, its sign disagrees with the economic theory as it has been defined whereas an appreciation of the exchange rate which means a depreciation of currency value and consequently this would be an incentive for increasing export quantities. Alternatively, what we have found that the increase in exchange rate by 1% leads to a decrease in quantity demand of export by (0.42%). This result agrees with different studies that have been applied on the Sudanese economy. These studies had proved the failure in the devaluation of the Sudanese pounds policy in encouragement of exports. Such studies like the study of Ali A/Gadir Ali (1983) whose study has found that the devaluation of the exchange
rate of the Sudanese pound has not led to an increase in the competitiveness of export of goods. In addition to this, the Sudanese exports can be said to be so inelastic that the devaluation of currency have not led to an increase in the volume of exports.

Another study by Mohamed Nour Eldin Hussein (1984) carried out that the devaluation of exchange rate by 1% would lead to a decrease in the foreign currency at a rate of 1.02%, and consequently he concluded the inefficiency of the exchange rate devaluation policy in encouraging the Sudanese exports. It is worth mentioning that the reason of this result, that the sign of exchange rate elasticity disagrees with the economic theory, can be contributed to the inhomogeneous of exchange rate data during the period of the study and to the changes which accompanied with during this period. During the period (1970-1977) the fixed exchange policy has been used. Then the devaluation of exchange rate policy had been applied in 1978. In the years 1979- 1989 the adjusted exchange rate policy had been used. Then another devaluation policy had been applied during the period 1985- 1987. In the year 1992 the exchange rate had been unified and liberalized according to economic liberalization policy that was adopted. In the year 1997 up to 2001, the creeping exchange rate has been used as a result of the betterment of the relations between Sudan and international monetary fund (IMF). The country used this policy to devaluate its currency value in small rates that daily or weakly fluctuates. During the remaining period of the study, the policies and regulations concentrated on achieving permanent stability and adopted managed exchange rate. From the explanatory survey, it is noticed that there are different polices that had been applied in the determination of the exchange rate. Therefore, it has been possible to relate this sign of exchange rate to the changes and evolution that the exchange rate has witnessed.
4.4.7. The Results of the Import Demand Function Analysis:

The import demand function no (4-13) has estimated according to the ordinary least square method. The model suffers from autocorrelation and has been rectified by Cochran- Orcutt method. The following results have been acquired:

\[
\text{LNQ}_m = -0.88 \text{LNRP}_m + 0.23 \text{LNY} + 0.09 \text{LNEx}
\]

\[
\begin{align*}
T & = (-4.52) \quad (16.12) \quad (3.54) \\
P & = (0.000) \quad (0.000) \quad (0.001)
\end{align*}
\]

\[
R^2 = 0.75 \quad R^2\text{adj} = 0.73 \quad DW = 1.41
\]

It is found that all the parameters are statistically acceptable at significant level 5%. These results have been found in harmony with the economic theory except the exchange rate.

These estimation results have shown that the quantity demand of imports have been characterized by its low elasticity to the relative prices as it has amounted to 0.88%. This means the increase of the relative prices by 1% leads to a decrease of the quantity demand of imports at a rate of 0.88%. When the relative prices increase, the imports of the Sudanese individuals decreases simultaneously accompanied with their needs of goods to satisfy the decrease in the local production until these imports are substituted by the local products.

As for the relationship between the quantity demand of imports and the real gross domestic product, the results have shown that they are correlated positively. This means an increase in the RGDP leads to an increase in imports demand by 0.23%, which coincides with the economic theory that states that an increase in income, would lead to an increase in the quantity demand of goods whether they
are internally and externally. It is also noticed that the elasticity of the RGDP is very low as it has been less than one (0.23%). This situation means that any change that happens in the quantity demand of import would be less than the change that would happen in the income. This situation can be attributed to the fact that most of the Sudanese development plans appreciate a decrease in imports and recommend the application of the import substitution policy. So that the deficit in trade balance of payments can be rectified. This situation can also be referred to the civil wars that the Sudanese has been suffering for a long period of time such as the war in the South which has been consuming a great deal of the Sudanese resources, otherwise could have been diverted to the import of necessities. Another important reason is that the Sudanese exports have been from agriculture which is liable to fluctuations in the normal environment such as desertification that hit the country in the eighties. This situation leads to a decrease in the export revenues thereby affecting the GDP and then the ability of the country importation.

As for the exchange rate, the results have shown a positive relationship between exchange rate and quantity demand of imports which does not agree with the economic theory. This fact means an increase in the exchange rate by 1% leads to an increase in imports by 0.09%. This result can be explained by fact that although the exchange rate has been devaluated, the import of goods has been flowing in. The demand of goods is inelastic, that is to say it is a demand for essential goods as they are agricultural and industrial requirements and other basic good such as wheat, rice, etc.
Chapter Five

Conclusion, Results and Recommendations

5.1 Introduction:

This chapter summarizes the arguments that have been advanced throughout the thesis, as well as the main findings. In addition, it offers some recommendations, which if adopted, might overcome the shortcomings resulting from the analysis of the research problem.

This study investigates the impact of foreign direct investment and trade liberalization on economic growth of Sudan during the period 1972-2010. The methodology used in this study is the analytical method by using cointegration technique and ordinary least squares (OLS).

The results and recommendations of the study will be discussed in the following sections.

5.2. The Results:

- The foreign direct investment has a weak positive effect on the economic growth where 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 in economic growth.

- The study has shown that the petroleum exports variable is insignificant since the petroleum export revenues had been divided between foreign companies, Southern Sudan government and Sudan government. Also, this period is not enough to reflect the impact of these revenues on the economic growth.

- The study has indicated the insignificance of trade openness which means that it can not be considered as an important determiner of FDI.

- The variable of the population number is insignificant for the foreign direct investment, since the concentration of the foreign direct investment is on a limited number of the population.

- The results have shown that there is a negative effect relationship between inflation and FDI, as an increase in inflation by 1% leads to a decrease in FDI by 1.39%.

- The results have shown that the literacy rate factor is insignificant. Accordingly it has not any effect on the FDI.
• Considering the exchange rate, it has a positive effect on the FDI as a devaluation of exchange rate by 1% leads to an increase in the FDI at a rate of 0.37%.

• The study has shown that the export relative prices are insignificant which means it is not an important factor for the quantity demand for export.

• As for the real gross domestic product for trade partners of Sudan, the study has shown that there is a positive impact on the quantity demand of exports. An increase in the trade partners income by 1% leads to an increase in the quantity of exports by 0.37%.

• The sign of exchange rate elasticity disagrees with the economic theory since an increase in the exchange rate by 1% would lead to a decrease in quantity of export by 0.42%. This means that the devaluation of currency policy does not lead to an encouragement of exports.

• The study have shown that the relative prices of import has a negative effect on the import quantity, as an increase in relative prices by 1% leads to a decrease in the quantity demand of imports by 0.88%.

• With regards to the real gross domestic product, the study has shown that it is an important variable in determining the quantity demand of imports except that its elasticity is less than one where it has reached (0.33%), which means an increase in the RGDP by 1% leads to an increase in the quantity demand of imports by 0.33%.

• The sign of the exchange rate elasticity disagrees with the economic theory, as an increase in the exchange rate by 1% leads to an increase in imports by 0.09%.
5.3. 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 as regards the FDI, the following:

• The government should do its best to attract productive foreign direct investments through maintaining security, political and economic stability all over the Sudan.

• The government should follow the implementation of the exemption and guarantees given to investors which have already been stated in the investment act, 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 of highways, as well as eradicating the problem of high tariffs for electricity.

• Emphasis on the role of the Sudan embassies abroad to activate dissemination of information 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 following recommendations in order to encourage exports and imports:

• Design polices that aimed at improving of the quantity of Sudanese exports so that they can compete with other foreign products in the world markets.
• 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, especially initiation and construction of paved roads.

• Encouragement of researches in agricultural and animal wealth, besides giving them priority in finance from the specialized banks.

• A substantial reduction of taxes and duties of the agricultural sector.

• Political and economic openness and collaboration with the world and the emancipation from the incessant sanctions so that the Sudan may be an attractive and stabilized country.

• As the devaluation of the exchange rate policy has not led to an improvement in exports and imports, the study recommends the revision of this policy and finding suitable solutions to it. The study suggests implementation of fixed exchange rate.

➢ Encouragement of the domestic investors to invest in the productive and bulk 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 decrease 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, avoiding past mistakes and directing its revenues for the rehabilitation of the agricultural
sector as petroleum is an unrenewable resource and the fact that Sudan is an agricultural country.

➢ The government should work towards decreasing the inflation rates and its preservation in lower levels for the sake of the attraction of more foreign direct investment. This can be attained by implementation of suitable monetary policies through the central bank of Sudan.
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Appendix (1) : Real Gross Domestic Product, Foreign Direct Investment, Trade Openness, Domestic Investment, Literacy Rate, Exports of petrol for Sudan (1972-2010) in million Sudanese pounds.

<table>
<thead>
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Source: Central statistical bureau, Central Bank of Sudan, International Monetary Fund and Human Development Reports.
## Appendix (2): Foreign Direct Investment, Trade Openness, Literacy Rate, Population, Inflation and Exchange Rate of Sudan (1972-2010)

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Source: Central statistical bureau, Central Bank of Sudan, International Monetary Fund and Human Development Reports.
Appendix (3): Quantity Demand of Exports, Real gross domestic product for trade partners of Sudan, Relative Prices of Exports and Exchange Rate of Sudan (1972-2010)

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Source: Central statistical bureau, Central Bank of Sudan, International Monetary Fund and World Bank.
Appendix (4): Quantity Demand of Imports, Real gross domestic product, Relative Prices of Imports and Exchange Rate of Sudan (1972-2010)

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Source: Central statistical bureau and Central Bank of Sudan.
Appendix (5)
Results of Economic Growth Function Analysis

Method: Least Squares
Date: 11/16/12  Time: 20:14
Sample: 1972 2010
Included observations: 39
Convergence achieved after 217 iterations
Backcast: 1971

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R-squared | 0.927492 | Mean dependent var | 9.143203
Adjusted R-squared | 0.913896 | S.D. dependent var | 0.480832
S.E. of regression | 0.141093 | Akaike info criterion | -0.917650
Sum squared resid | 0.637029 | Schwarz criterion | -0.619062
Log likelihood | 24.89417 | F-statistic | 68.22134
Durbin-Watson stat | 1.409615 | Prob(F-statistic) | 0.000000

Inverted MA Roots | -.91

185
Appendix (6)
Results of Foreign Direct Investment Function Analysis

Dependent Variable: LNFDI
Method: Least Squares
Date: 11/23/12   Time: 16:30
Sample: 1972 2010
Included observations: 39

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R-squared   0.958655   Mean dependent var   6.885803
Adjusted R-squared 0.952390   S.D. dependent var   6.419960
S.E. of regression   1.400811   Akaike info criterion   3.652617
Sum squared resid    64.75492   Schwarz criterion   3.908550
Log likelihood    -65.22604   F-statistic   153.0318
Durbin-Watson stat  1.787665   Prob(F-statistic)   0.00000
Appendix (7)
Results of Demand of Export Function Analysis

Dependent Variable: LNQX
Method: Least Squares
Date: 11/23/12  Time: 15:52
Sample: 1972 2010
Included observations: 39
Convergence achieved after 9 iterations
Backcast: 1971

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R-squared 0.576445  Mean dependent var 1.854908
Adjusted R-squared 0.540141  S.D. dependent var 0.539663
S.E. of regression 0.365961  Akaike info criterion 0.924335
Sum squared resid 4.687463  Schwarz criterion 1.094957
Log likelihood -14.02454  Durbin-Watson stat 1.680854

Inverted MA Roots -.84
Appendix (8)
Results of Demand of Import Function Analysis

Dependent Variable: LNQM
Method: Least Squares
Date: 11/23/12  Time: 16:15
Sample: 1972 2010
Included observations: 39
Convergence achieved after 11 iterations
Backcast: 1971

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R-squared 0.753691 Mean dependent var 2.398719
Adjusted R-squared 0.732579 S.D. dependent var 0.640162
S.E. of regression 0.331046 Akaike info criterion 0.723793
Sum squared resid 3.835690 Schwarz criterion 0.894415
Log likelihood -10.11396 Durbin-Watson stat 1.412261

Inverted MA Roots -.67
Appendix (9)
Results of Johansen Juselius test for Economic Growth Function

Date: 08/03/13  Time: 16:11
Sample (adjusted): 1974 2010
Included observations: 37 after adjustments
Trend assumption: Linear deterministic trend
Series: LNY LNOP LNFDI LNDI LNLR
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

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<th>Hypothesized No. of CE(s)</th>
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<th>0.05 Critical Value</th>
<th>Prob.**</th>
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Trace test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

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Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values
Appendix (10)
Results of Johansen Juseluis test for Foreign Direct Investment Function

Date: 08/03/13  Time: 16:18
Sample (adjusted): 1974 2010
Included observations: 37 after adjustments
Trend assumption: Linear deterministic trend
Series: LNFDI LNPOP LNLR LNINF LNEX
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

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<td>0.4743</td>
</tr>
<tr>
<td>At most 4</td>
<td>0.174257</td>
<td>7.683387</td>
<td>15.49471</td>
<td>0.4999</td>
</tr>
<tr>
<td>At most 5</td>
<td>0.016057</td>
<td>0.598940</td>
<td>3.841466</td>
<td>0.4390</td>
</tr>
</tbody>
</table>

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

<table>
<thead>
<tr>
<th>Hypothesized No. of CE(s)</th>
<th>Eigenvalue</th>
<th>Max-Eigen Statistic</th>
<th>0.05 Critical Value</th>
<th>Prob.**</th>
</tr>
</thead>
<tbody>
<tr>
<td>None *</td>
<td>0.793021</td>
<td>58.28018</td>
<td>40.07757</td>
<td>0.0002</td>
</tr>
<tr>
<td>At most 1</td>
<td>0.529595</td>
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<td>At most 2</td>
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<td>0.3400</td>
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<tr>
<td>At most 3</td>
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<td>7.084447</td>
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<td>0.4792</td>
</tr>
<tr>
<td>At most 5</td>
<td>0.016057</td>
<td>0.598940</td>
<td>3.841466</td>
<td>0.4390</td>
</tr>
</tbody>
</table>

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

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Appendix (11)
Results of Johansen Juseluis test for Export Demand Function

Date: 12/11/12  Time: 15:37
Sample (adjusted): 1974 2010
Included observations: 37 after adjustments
Trend assumption: Linear deterministic trend
Series: LNQX LNYW LNRPX LNEX
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

<table>
<thead>
<tr>
<th>Hypothesized No. of CE(s)</th>
<th>Trace Eigenvalue</th>
<th>Trace Statistic</th>
<th>0.05 Critical Value</th>
<th>Prob.**</th>
</tr>
</thead>
<tbody>
<tr>
<td>None *</td>
<td>0.474251</td>
<td>50.19819</td>
<td>47.85613</td>
<td>0.0296</td>
</tr>
<tr>
<td>At most 1</td>
<td>0.353981</td>
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<td>29.79707</td>
<td>0.1169</td>
</tr>
<tr>
<td>At most 2</td>
<td>0.214820</td>
<td>10.24340</td>
<td>15.49471</td>
<td>0.2625</td>
</tr>
<tr>
<td>At most 3</td>
<td>0.034401</td>
<td>1.295243</td>
<td>3.841466</td>
<td>0.2551</td>
</tr>
</tbody>
</table>

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

<table>
<thead>
<tr>
<th>Hypothesized No. of CE(s)</th>
<th>Max-Eigen Eigenvalue</th>
<th>Max-Eigen Statistic</th>
<th>0.05 Critical Value</th>
<th>Prob.**</th>
</tr>
</thead>
<tbody>
<tr>
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<td>23.78850</td>
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</tr>
<tr>
<td>At most 3</td>
<td>0.034401</td>
<td>1.295243</td>
<td>3.841466</td>
<td>0.2551</td>
</tr>
</tbody>
</table>

Max-eigenvalue test indicates no cointegration at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values
**Appendix (12)**

**Results of Johansen Juseluis test for Import Demand Function**

Date: 12/11/12  Time: 17:16  
Sample (adjusted): 1974 2010  
Included observations: 37 after adjustments  
Trend assumption: Linear deterministic trend  
Series: LNQM LNRPN LNY LNEX  
Lags interval (in first differences): 1 to 1

### Unrestricted Cointegration Rank Test (Trace)

<table>
<thead>
<tr>
<th>Hypothesized</th>
<th>No. of CE(s)</th>
<th>0.05</th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Trace Statistic</td>
<td>Critical Value</td>
<td>Prob.**</td>
</tr>
<tr>
<td>None</td>
<td>None</td>
<td>0.493985</td>
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<td>47.85613</td>
</tr>
<tr>
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<td>At most 1</td>
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<tr>
<td>At most 2</td>
<td>At most 2</td>
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<td>10.01656</td>
<td>15.49471</td>
</tr>
<tr>
<td>At most 3</td>
<td>At most 3</td>
<td>0.034128</td>
<td>1.284795</td>
<td>3.841466</td>
</tr>
</tbody>
</table>

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level  
* denotes rejection of the hypothesis at the 0.05 level  
**MacKinnon-Haug-Michellis (1999) p-values

### Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

<table>
<thead>
<tr>
<th>Hypothesized</th>
<th>No. of CE(s)</th>
<th>0.05</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Max-Eigen Statistic</td>
<td>Critical Value</td>
<td>Prob.**</td>
</tr>
<tr>
<td>None</td>
<td>None</td>
<td>0.493985</td>
<td>25.20398</td>
<td>27.58434</td>
</tr>
<tr>
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<td>At most 1</td>
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<td>21.13162</td>
</tr>
<tr>
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<td>At most 2</td>
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<td>8.731763</td>
<td>14.26460</td>
</tr>
<tr>
<td>At most 3</td>
<td>At most 3</td>
<td>0.034128</td>
<td>1.284795</td>
<td>3.841466</td>
</tr>
</tbody>
</table>

Max-eigenvalue test indicates no cointegration at the 0.05 level  
* denotes rejection of the hypothesis at the 0.05 level  
**MacKinnon-Haug-Michellis (1999) p-values