AFRICAN STUDIES REVIEW

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Determinants of Economic Activity in Sudan: An Empirical Investigation (1992-2012)

By

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Abstract

Economic activity is one the macroeconomic indicators that can be used to measure economic situation. This research examined from an empirical point of view the determinants of economic Activity in Sudan (Government Expenditure, Export and Exchange Rate). The importance of this research stems from the vital role that could be played by these determinants in the economic performance. The analysis covered the period (1992-2012), where the data are obtained from the official sources, namely the Central Bank of Sudan and the Central Bureau of Statistics. Ordinary least squares (OLS) method was applied. The results revealed that Export and Exchange Rate policy show more potency and effectiveness than government expenditure on economic activity. The research recommends that the decision- makers should encourage export through the adoption exports promotion strategies, which require diversification of production and markets as well as improving economic infrastructure, and the policy that lead to stabilize exchange rate is needed. Furthermore, a rational government spending that raises the rate of economic growth should be adopted.

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1- INTRODUCTION

1.1 General Introduction:

For well over decades ago, there has been a controversy over the relative impact of monetary and fiscal policies on economic performance as measured by Gross National Product (GNP) or Gross Domestic Product (GDP). So far, since the sixties and seventies, there has been considerable debate with respect to such issues. The monetarists took the position that monetary policy was more important than fiscal policy in some economies while Keynesians hold the view that fiscal policy was more effective and essential. Dynamic gains from openness may be much larger; but identifying and measuring them obviously requires an alternative theoretical approach.

The renewed interest in growth theory, mainly initiated by the seminal work of Romer (1986), seems to provide such an approach. Endogenous growth models allow for direct and persistent link between openness and growth rate, which is missing in the traditional neoclassical growth model (Solow, 1956).

It is widely recognized that public expenditure on infrastructure, such as roads, ports, or communication

systems, public research spending and the provision of basic education and medical services, raises the economic potential of an economy. At least since the influential studies of Schafer (1989) and De Haan and Romp (2007) they argued that a rise in productive government activity increases output. Easterly and Rebelo (1993) and, more recently, Canning and Perini (2004) found evidence for long-run growth effects associated with public investment in infrastructure. In addition, many case studies highlight the growth-enhancing potential associated with such investments (OECD, 2007).

The significant macroeconomic imbalance, increasing unemployment, and mounting poverty led in early 1990s to the adoption of adjustment than what the IMF would dreamt, while real GDP has registered an impressive growth rate of 10.22percent during (1990-2002), and the economy has shown some signs of recovery, poverty indicators have continued their upward trend. Mounting political pressure on the government both from internal and external- forces, together with the escalation of civil war in the south have all led to a reduction in foreign aid and to significant increase in the resources devoted for the war. These developments have

frustrated the concerted efforts that were beginning made to move the economy into a sustained growth path.

Nonetheless, the advent of oil in the 1990s has contributed to a large extent to the relative economic stability that the Sudan has witnessed since then (Mahran, 2005).

Sudan is one of the third world countries, so like the rest of the same category countries the accumulation of foreign debt syndrome does not stop. The direct cause of this accumulation is the increase of federal budget deficit and the increase of the new external arrears accumulation, in addition to increase of domestic borrowing and permanent deterioration of macroeconomic fundamentals, especially after the separation of South Sudan in July 2011 which formed "as it mentioned before" a shock that strongly has affected the macroeconomic outlook in Sudan, and significantly reduced the debt-servicing ability, especially after the exit of oil revenues from the balance of exports due to separation. From a historical perspective it is clear to note that the GDP per capita has grown from 46 percent in the sixties, and up to the 170 percent in the seventies, but later has been proved that this growth was

unsustainable, thus fell again to 34 percent in the eighties. Finally, it fell to 26 percent in the nineties By 1993, Sudan had the world's largest debtor to the WB and the IMF and its relationship with the international financial institutions have been strained, where the IMF suspended voting rights for Sudan and the World Bank suspended Sudan's right to make withdrawals for loans and credits,   Also European Union suspended agricultural credit funds in Sudan, which amounts to more than one billion Euros, and   the government failed to comply with the IMF program (Almosharaf and Tain, 2014).

1.2. The Problem of the Research:

In Sudan, stability of economic performance has been no sustained resulting from weakness performance of macroeconomic policies, which led to fluctuation in key sectors (agriculture, industry, and services) contribution in the economy, in addition to that continuous exchange rate and exports deterioration were noticed as a result of weakness in economic performance, as well as lower public spending.

This research tries to answer the question: whether government expenditure (G), exports (X) and exchange rate

(EX) can affected economic activity in Sudan during the period (1992-2012).

1.3 The Importance of the Research:

The importance of this research stems from the fact that growth and structural transformation of economies are ultimately driven by government expenditure, exchange rate and exports. Furthermore, these variables are of paramount importance for countries to realize stable economic growth and sustainable development at different stage.

1.4 The objective of the research:

The main purpose of this research is to determine from an empirical point of view the determinants of economic Activity in Sudan. The second objective is to measure they effect of these determinants on economic performance in Sudan over the period (1992-2012).

1.5 The Methodology of the Research:

The research methodology that will be used in the analysis, firstly provide the empirical model while incorporated four variables namely, real gross domestic product, government expenditure, exports and exchange

rate. Second, Ordinary Least Squares (OLS) technique is applied to estimate the model, which is a linear regression model in logarithm form, to describe the determinants of economic performance in Sudan.

1.6 The Hypotheses of the Research:

This research hypothesized that the government expenditure (G), exports (X) and exchange rate (EX) have positive effects on economic activity.

1.7 The organization of the Research:

This research is organized as follows: Chapter (I) includes Introduction, the Problem of the research, the Importance of the Research, the objectives of the research, the Methodology of the research, the hypotheses of the research, and the organization of the research. Chapter (2) reviews relevant literature, Chapter (3) was devoted to Economic Performance of Sudan, while Chapter (4) outlines the research methodology and empirical results. Finally, chapter (5) includes conclusion and recommendations.

2-LITERATURE REVIEW:

In this chapter we briefly- review some of the relevant literature related to the effect of exports, exchange rate and government expenditure on the economic growth.

Exchange rate is an important economic variable that influences the national economy and the regulations of international trade as it converts foreign prices of exports and imports into the domestic currency of the particular country. These prices determine which goods are traded and where they are shipped or sourced. Being able to convert one currency into another at the prevailing exchange rate is crucial to international business and decision making. The difference in relative prices determines the flow of products and the patterns of trade. Currency devaluation and appreciation are used as tools to correct external imbalances of countries, and mostly they are short term in nature, as their effects occur during the first several months after the exchange rate change (Thirwall, 1992).

The choice of exchange rate regime and its impact on economic performance is among the most controversial issues in macroeconomic policy. The empirical 'works on

the economic growth, the effect of exchange rate volatility conclude either on exchange rate neutrality, or on a different effect in industrial and developing countries. Some recent studies suggested that the failure of the empirical literature at bringing a stable, clear-cut effect of exchange volatility to the fore may be due to nonlinear effects: Razin and Rubinstein (2006) allowed the exchange rate regime to have both direct effect on short-term growth, and an indirect one that is channeled through the crisis probability, while A ghion et al. (2009) argued that the choice of exchange rate regime should depend on financial development. Using a sample of 83 countries spanning the years (1960-2000), they showed that real exchange rate volatility can have a significant impact on the long-term rate of productivity growth, but the effect depends critically on the countries' level of financial development.

Exploring the relation between economic activity and government expenditure. The dynamics of different categories of government expenditure are undoubtedly explained by different determinants, we concentrate our attention on a broad aggregate expenditure because of two main reasons. First, the matters for the determination of government deficit and debt, and ultimately for the overall

sustainability of public finances in overall government expenditure.

Second, existing work analyzing separately different government expenditure categories via the estimation of dynamic equations does not find evidence of a strongly different relation with economic activity across types of expenditure (Kolluri, 2004).

The ratio of government expenditure to GDP is adjusted for the cycle following the approach used by the European Commission, i.e., by deducting a measure of "cyclical" government expenditure consisting of a country-specific expenditure "sensitivity" parameter multiplied by the output gap. The sensitivity of expenditure to the cycle captures the monetary change in expenditure associated with a unit monetary change in the difference between actual and potential output as a result of the operation of existing legislation (automatic stabilizers).

Sensitivity parameters are constructed on the basis of budgetary elastic ties estimated in Van den Noord (200 I), unemployment subsidies is the only government expenditure component assumed to react "automatically" to the cycle. To get the cyclically adjusted expenditure net of

interest spending, the ratio of government expenditure to GDP is multiplied by the GDP at current prices, and finally deflated. The relationship between public expenditure and GDP, investigated the yearly observations from (1970-2003) for 15 European Union countries. Data are taken from the Annual Macroeconomic database of the European Commission (AMECO). All data are expressed at constant 1995 prices and denominated in common currency (ECU). Expenditure data are net of interest expenditure and are adjusted for the cycle. GDP data refer to potential GDP. Potential GDP series are obtained by means of the production function approach, i.e., potential output is estimated starting from an assumed aggregate production function for the economy and estimates of the capital stock, labor inputs and total factor productivity (Denisl, 2002).

Over the past few decades, exports have played a vital role in the economic growth of LDCS. According to Jung and Marshal (1983), the 1977s have witnessed an emerging consensus in favor of exports promotion. In-depth analysis of individual country experiences has provided extensive supports for exports promotion as an effective development strategy. Furthermore, in discussing trade strategies, perhaps the hypothesis of widest interest is

that growth in real exports tends to cause growth in real GDP.

The link between exports and economic growth has been closely studied by economic experts, mainly due to the outcomes attained by a country's growth through exports because of the results achieved by export-led growth in some countries. The theoretical basis for achieving growth through the development of export industries is that competition on an international scale requires efficiency, innovation and investment, all of which may encourage economic growth within a country. The source for realizing development through rise in exportation of goods is that success in the global market entails proficiency and modernization. The development of export can lead to economies of scale as industries expand and develop their markets overseas in response to foreign demand. Industries may promote world-class skills in product design, research and development and marketing, which increase their export capacity and promote economic development in their own country. The promotion of international trade leads to free trade policies that promote exports from the country and attract direct foreign

investment into local industries (EH Economic Intelligence, 2003).

Colman and Nixson (1986) argued that, "in more successful LDCs the changing composition of exports to include a higher proportion of manufactures, is positively linked to growth of exports (as a ratio to GDP) and growth of GDP. In contrast, it's also argued that exports do not it is appear to provide a stronger stimulus for growth in the poorer LDCs, particularly in African countries, which remain overwhelmingly depending upon primary commodity exports.

Hataiseree and Rhipps (1986) examined the key link between money and nominal income in Thailand during the 1980s. The main points that emerged from the empirical work were that firstly the monetary aggregates (M I and M2) were each found to be integrated with nominal income, secondly, government expenditure and exports seem to have a significant impact on dynamic and short-run models of change in nominal income, and thirdly there is no evidence to support the existence of co-integration for monetary base (MB) and credit (Cr) with income that are

positively affected by government expenditure and exports."

Ram (1986), utilizing A two-sector model, in a cross-section study of 115 countries and in the two-decade period from 1960 through 1980, found that growth of government size has a positive effect on economic growth.

The findings of Mahran (1987) have further warned that the devaluation would also increase the trade deficit; however, the current result showed an increasing total exports and declining total imports. This is particularly obvious when the exchange rate is simulated to depreciate by 5%, where the trade deficit as a percentage of the nominal growth domestic product (GDP) will deviate from the baseline share by 2% less. Deteriorations in the consumption expenditure of households and total absorption are mainly due to the increase in the domestic price of goods particularly when the exchange rate is simulated to depreciate by 10% and 15%.

Zaid (1989) examined export promotion as a viable trade strategy for the acceleration of development and the improvement of the debt situation over the period (1956-1980).He tested the possibility of a two-way causation

between exports and output using three-stage least squares (3SLS) method. The results suggest a positive and significant relationship between GDP and exports growth.

Barro (1991) reported mixed results. In his cross-section study of 98 nations between the years 1960 and 1985, he found that increases in government consumption and expenditure measured as a percent of national income reduce per capita growth.

Ahmed (1996) argued that, "the justification for exports diversification in Sub- Sahra Africa lies in their weak exports base, which make them exposed to abrupt changes in commodity market that are beyond the direct influence of policy maker. The recent experience shows that there is a close relationship between commodity diversification and economic performance and that undiversified economies were generally underachiever, even when commodity prices were favorable. Experience from East Asia, Latin America shows that the faster the growth in commodities, the more rapid the diversification of the economy away from commodities and toward manufacturing".

Anwerand Sampath (1997) utilized unit root and co-integration techniques and Granger causality, for the period of (1960-1992) and have found that out of 96 countries only 8 showed unidirectional or bidirectional causality from exports to GDP with positive relationship between the two variables. According to the evidence of the study, causality from GDP to exports with positive relationship between the two variables has been found for only 8 countries.

Ekanayake (1999) used co-integration and error-correction models to analyze the causal relationship between export growth and economic growth in eight Asian developing countries using annual data from (1960-1997). This study has provided strong evidence supporting the export-led growth hypothesis. The empirical results in Ekanayake's research showed that bi-directional causality exists between export growth and economic growth in India, Indonesia, Korea, Pakistan, Philippines, Sri Lanka and Thailand. According to this study, there is also evidence for export-led growth in Malaysia. Furthermore, there is evidence for short-run Granger causality running from economic growth to export growth in all cases except Sri Lanka. However, there is no strong evidence for short-

run causality running from export growth to economic growth.

Mahran (2005) argued that effective fiscal policy can also be used to spur growth and revive a stagnant economy. What needs to be explored in this respect for a developing economy is the causal relationship between growth (say, of real per capita GDP) on the one hand, and quantitative fiscal adjustment (improvement in the fiscal balance), consumption expenditure (wages and salaries, development expenditure, and social services such as education and health), and sources (domestic and foreign) of financing budget deficits on the other hand.

Hassan (2006) calculated the marginal propensity to absorb to address the issue of devaluation policies in Sudan as a tool to maintaining the balance of payments. She applied Ordinary least square (OLS) method to annual data covering the period (1982 - 2005). To calculate the marginal propensity to absorb (MPA) she used real consumption, real investment and real government expenditure, Then she estimated the elasticity of absorption, and used it to calculate the marginal propensity to absorb. Her empirical results provide strong evidences

that the MPA is very high in Sudan during the period under study (0.988). This may be attributed to the increases in the total expenditure on final goods and services both by household and government sectors. This suggests that devaluation of the Sudanese pound has probably been ineffective as far as the balance of payments is concerned. The policy implications in this regard are that government has incentives to fiddle with absorption by changing the volume of the government expenditure and-limiting the absorption of the economy through taxes.

Pandhi (2007) has analyzed the theories behind the role that exports play in growth, and has used regression analysis to four African nations namely the Democratic Republic of the Congo, Guinea Bissau, Malawi, and Nigeria during the period (1981-2003). Following Foster's model and using the first-difference form of the variables, the regression results have shown a mostly positive relationship between exports and growth and mixed results for the other independent variables, investment and population .Pradhan (2007) has examined export led growth (ELG) hypothesis for India using different approaches by employing data at the aggregate level covering the post-liberalization period. By employing co-

integration hypothesis (following the Johansen method), the study has investigated the Granger causality between export growth and GDP and export growth and investment. In this analysis, he failed to find support for the hypothesis that exports Granger cause GDP, using two measures for GDP (GDP with exports and GDP without exports). The same holds for the relationship between exports and investment. The finding strengthens the argument against the export led growth hypothesis for the case of India.

Kogid, (2010) investigates the factors that stimulate and maintain economic growth. The determinant factors studied are consumption expenditure, government expenditure, export, exchange rate, and foreign direct investment in Malaysia from the year (1970 - 2007). This study uses co-integration analysis and the causality approach by Johansen and ECM to analyze the relationship between economic growth and the determinant factors. The results of this study showed that there exist long-run co-integration and multiple short-run causal relationships between economic growth and the determinant factors. Overall, findings showed that all the determinant factors (combined' determinant factors) cause economic growth in the short-run.

However, individual tests indicate that only consumption expenditure and exports cause economic growth while this is not so for the government expenditure, exchange rate and foreign direct investment. The study concludes that consumption expenditure and exports play important roles as determinant factors to economic growth, and government expenditure, exchange rate and foreign direct investments may have a role as a catalyst and complement determinant factors to economic growth in Malaysia.

The relationship between exports growth and economic growth has been a popular subject of debate among development economists. Most of these debates ranging among development economists are focused on the question of whether strong economic performance is export-led or growth driven. This question is important because the determination of the causal pattern between exports and growth has important implications for policy-makers' decisions about the appropriate growth and development strategies and policies to adopt (Iqbal, Hameed& Devi, 2012).

3-Economic Performance in Sudan:

In 1978, Sudan adopted the International Monetary Fund and World Bank macroeconomic stabilization and structural adjustment programs. However, the economic continued to slide further through the (1978-84), which witnessed very active adjustment operations. Growth of per-capita income collapsed during this period, while macroeconomic policies continued to worsen. Inflation shot to more than 27 percent and for the first time, inflation rate at 6.2 percent of GDP exceeded seignior age revenue by more than one percentage point, indicating the increasing inefficiency of monetary policy. The reform emphasized two central policies: successive devaluation and trade liberalization measures that shifted imports (and to some extent exports) from the official market to the free market. These reforms were also motivated by the emerging role of Sudan as a major labor-exporting country to the oil-surplus economies of the middle-East (quoted in Alfaki, 2013).

Using ordinary least squares technique and annual time series data covering the period (1970-1998), Meezan (2000) examined the impact of fiscal and monetary policies on economic activities in Sudan. He tested the hypothesis

that the money supply, government expenditure, and total exports have a positive impact on economic activity. The results revealed that the most important single variable which has a significant positive effect on economic activity is exports.

This suggests that export promotion have played a significant role in economic growth over the study period. On the other hand, neither monetary policy nor fiscal policy has had any significant impact on growth. This might provide an evidence of the failure of such policies and their nature in inducing growth.

According to Elbadawi (2002), remittances from Sudanese nationals working abroad averaged more than three times the Dollar value of official exports during (1983-84), these huge foreign exchange resources encouraged the government to adopt reforms to unify the exchange rate. Having failed to attract further investment from the oil surplus economies in the Arab region, these reforms aimed at mobilizing the resources of the remittances from these countries.

However, these efforts were largely unsuccessful, and Sudanese nationals have continued to send the bulk of

their remittances through the parallel foreign exchange market, attracted by its more depreciated exchange rate (Ali and Elbadawi, 2002).

Mahran (2005) argued that the Sudan economy has witnessed major transformations during the last three decades. Full government control over economic activities characterized the period of the 1960s, while an inward-looking strategy dominated development policy during the early 1970s and mid-1980s. Economic difficulties assumed crisis proportions during the second half of the 1970s, following the ambitious development program launched in early 1970s. The failure of the investment boom to increase the economy's productive capacity has accelerated the crisis. By the late 1970s, the government was confronted by falling export earnings. Increasing import bill, accelerating budget deficit, and mounting foreign debts.

The start major phase in the historical path of the Sudanese economy in 1992 after applying of the economic liberalization policy and adopting of a market economy approach as an economic system which reduced the government economic role to be restricted on policy-making, in this framework, an extensive program of

sale and liquidation for most of the institutions and government companies to the private sector was applied under the purpose of treating the economic stagnation by reducing the control of the public sector on economic activity and break the monopolies in this section, liberalizing the economy from various restrictions, opening the door to the private sector to take over the reins of economic initiative and driving economic activity towards achieving the national economy objectives. At this stage the economy has tested a number of negative and positive developments. In the first four years of implementation of the economic liberalization policy, an evident disturbance has occurred in the national economy performance expressed by several indicators, the most prominent was the inflation rapid rising, which reached 166 percent in 1996, as well as significant deterioration in the value of the national currency clear distortions in the exchange rate, a decline in the rate of GDP growth to low levels of 1.8 percent in 1991, a decline in the appropriations of the general budget development to 50percent, while the external debt exacerbated until it reached about $ 17 billion in 1996 (Almosharaf and Tain, 2014).

However, a significant improvement occurred in the performance of the Sudanese economy after that because of the reforms that took place in the macro-economic policies since July 1996 in the framework of the implementation of economic structural reform strategy, where the indicators of the total economic performance showed a remarkable development. Inflation rates have fallen to very low levels of 8 percent in 2000, after it was 166 percent in 1996 a significant stability had taken place in exchange rate, and the rate of GDP growth returned to rise to reach an average of about 6percent during (1997-2000). The thing which has helped to make this improvement was the entry of oil within the sect- oral components of the Sudanese economy since 1998, as well as its entry within the structure of the Sudanese exports since 1999 (Almosharaf and Tain, 2014).

Second wave of reforms known as Sudan's Structural Adjustment Policies (SAP) was initiated under the Program of the National comprehensive Plan (1992-2002). However, this program of economic reform (namely, SAP) was both successful and unusual. It was successful because it restarted macroeconomic stability, revived economic growth, and resulting in increasing per capita income (World Bank, 1998). It was unusual in the sense that "as the

name implies", these policies were home grown and were pursued without external financing or technical assistance either from the World Bank or the IMF. But, since 1997, the Macroeconomic stabilization program has been monitored by the IMF. From then, Sudan has seen stable progress on basic economic indicators. Growth has been relatively steady, despite the civil war. The annual GDP growth rate averaged in excess of 5 per cent during the period (1995-2002), reflecting the package's success and the important role of oil, of which the country became a net exporter in 1999.The joint World Bank/UNDP - led assessment team concluded that the package had yielded macroeconomic stability but at a high price in terms of unequal distribution of the economic gains, unsustainable levels of public debt and poor access to services (AImosharaf and Tain, 2014).

In 1999 Sudan began exporting oil and since then has become increasingly dependent on oil exports to the extent that the economy has turned into an oil dependent economy. Since the late 1990s the implementation of macro-economic reforms along with the positive contribution of oil to the Sudan economy has caused a rapid increase in real economic growth. Consequently, Sudan has

moved from a low income economy into a lower medium income economy according to World Bank classification (Mohamed nour, 2011).

Oil has led to a significant positive impact on gross domestic product (GDP) as perceived from the impact of oil in the structure of the Sudanese economy and macro-economic indicators as measured by the share of oil in GDP, its growth rate and its composition. For instance, we observe the increasing impact of oil as measured by the rapid and continuous increase in the contribution of the oil sector in GDP from 1 % in 999 to 10% in 2004. Moreover, oil has led to positive impact in real GOP growth, for instance, the average rate of growth of GDP increased from 6.2% to 6.8%, 8%, 10%, 9% and 9.6% over the periods (1997-1999); (2000-2009); (2005; 2006); (2005-2007) and (2006-2008) respectively, putting Sudan among the fastest growing economies in the region. Moreover, oil has led to structural change in the composition of GDP, as the dividends from oil exportation have caused major transformations and structural changes in the economy. The structure of the Sudanese economy has shifted over time from being predominantly reliant on agriculture for growth

and exports to its current reliance on the oil sector (Mohamed nour, 2011) .

This situation had made improving and some sort of relative stability in the Sudanese economy until the year 2008. But that relative economic stability have been in decline since the year 2009, under the influence of various factors, most notably was the significant expansion of the public current expenditure (non-development) because of the many entitlements that were imposed by the political circumstances since the signing of the Comprehensive Peace Agreement in 2005.

As well as facing requirements of Darfur crisis and Eastern Sudan problem, the implications of the effects of the global financial crisis in 2008 and its impact on the public budget and imports in Sudan due to lower oil prices in the global markets in 2009, those effects made a significant pressures on public revenues of the country, and forced the government to increase the value-added tax and impose additional import duties with the new addition of fees and levies at the federal and state levels, which led to increase the production costs and economic stagnation (Almosharaf and Tain, 2014).

Using ordinary least squares technique and annual time series data covering the period (1985-2005), Dafa Alla (2007) examined the determinant of real GDP in Sudan. He tested the hypothesis that the real GDP responds positively and significantly to changes in real government expenditure and real investment. On the other hand, the coefficient of real exports is statistically insignificant. Furthermore, the results revealed that real GDP responds positively and significantly to change in Jagged variables, namely real government expenditure and real investment, as well as lagged real exports. This suggests that developmental efforts in Sudan should focus more on increasing government expenditure, particularly for infrastructure, as well as focusing on both private and public investment and export promotion.

The most prominent features of the transformations in Sudan economic system during the past twenty years, was the transition to the market economy system, and stabilization of Islamic banking approach in Sudanese banks both in terms of accept deposits or grant funding, as well as the use of financial instruments that are compatible with Islamic law with what regard to the cash management in macro-economy. Also the adoption of the dual banking

system according to two systems which has been later achieved by approving the Islamic banking system in the north and the traditional banking system in the south of Sudan before separation, so there is no doubt that these transformations had a direct impact on the performance of Sudan's economy, especially its closely associated with monetary policy. The great turmoil in Sudan path of economy and a radical shifts of the economy from one system to another completely contrary, beside political instability, internal conflicts and crises, which has been a dominant feature in the Sudan since independence, these are the reasons which prevented Sudan from making any economic progress with great quality and value, in spite of richness and diversity of resources that distinguishes Sudan (Almosharaf and Tain, 2014).

The fiscal stance in Sudan has weakened since the secession of South Sudan. In 2013, the government introduced austerity measures focusing on reduction of fuel subsidies by about 9.1 % (SDG 3.6 billion), maxi-devaluation (29%). Wages were raised by 20% to compensate for the ensuing higher cost of living. The improvements in revenue collections from tariffs and expenditure control through reducing subsidies, as well as

the inflow of oil transit fees, helped reduce the deficit in 2013 by an estimated 1.8 percentage points to 1.7% compared with 3.5% in2012.ln 2013 real gross domestic product (GOP) grew by 3.6%, up from 1.4% in 2012, driven by agriculture, oil, gold and transit fees. It is predicted to recede slightly in 2014 to 2.7%, because of Fiscal consolidation, and is projected to reach 3.8% in 2015 . Inflation remained high at 36.2% and is forecasted to drop to 26.8% in 2014 and projected at 23.2% for 2015 (Economic Commission for Africa, 2012).

Domestic demand, including both public and private consumption and investment, contracted in 2011 following the secession of South Sudan with the subsequent loss of 75% of oil income and 20% of population. The decline in private consumption and investment is expected to continue in 2012-13 due to the negative impact of the post-separation adjustment and continued political risks arising from ongoing-armed conflicts. The current account deficit was 7.5% of GDP in 2011. The government introduced a series of measures to contain import growth including banning luxury imports and the imposition of an import tax ranging from 50%-100% on 18 consumer commodities. There is growing concern that the fiscal adjustment, which

focuses on spending cuts and tax increases, will seriously undermine pro-poor service delivery and the potential for long-term growth. Federal transfers to state governments, the main financing tool for service delivery under decentralization, accounted for only 3.3% of GDP in 2011, down from the budgeted 4.1 % share. Developments in economic policy in 2011 were affected by post secession issues, including the dispute over the Abbey area and other borders, loss of oil revenues and the impact of the latter on the government's budget, foreign reserves and the exchange rate. To confront these challenges, the government of Sudan introduced fiscal austerity and adjustment measures as well as measures to promote non-oil exports. It also continued to negotiate with the government of South Sudan over fees for transportation of South Sudan's oil through Sudan. Notwithstanding the fiscal reforms, expenditure reduction remained below the level needed to compensate for lost revenue, resulting in an overall fiscal deficit of 5% of GDP in 2011. With the intensification of armed conflicts and political discontent and the creation of new states, the fiscal stance remains largely expansionary. The wage bill amounted to 44% of government spending in 2011. The relatively high wage bill in 2011 is mainly attributable to

the creation of 25 000 new jobs in the public sector. The share of Federal transfers to state governments was 27% of total government revenue, 5% less than the budgeted amount, and will remain the same in 2012 Spending on social services, including health and education, was 1.1 % of the budget. Capital expenditure was 8.2% of the 2011 budget, 50% less than originally budgeted. The challenge ahead is to balance the deficit financing mix. In addition to selling government bonds, further effort is needed to mobilize donor support for the budget under favorable-terms. Sudan's high external debt stock together with the economic sanctions imposed by the US continues to limit its access to international credit markets. The government needs to improve debt sustainability and implement critical reforms to establish widespread support for debt relief (Economic Commission for Africa, 2012).

Sudanese tax to GDP ratio is very low 6% in 2013 compared with an average of about 17% in the Low-income countries (UDCs) and is projected to average about 6.3% during (2014-15), as a result of the extensive tax exemptions and incentives. Expanding the taxable capacity requires streamlining tax exemptions, including improving revenue administration and business registration. Over the

last year, up to mid-2013, the fiscal deficit was largely monetized. The resultant high inflation averaging, 35.5% and 36.2% in 2012 and 2013respectively, coupled with continued devaluation of the Sudanese pound has translated into lower growth than potential averaging 2.5% over the two years. Streamlining public spending should continue in 2014.

Subsidies are projected at 14.2% of the budget in 2014 (about 6.3% less than in 2013). The wage bill is projected to drop by 0.8 percentage point, from 4.4% of GDP in 2013 owing to the separation of the police and security pension fund from the wage bill. However, allocations to state governments as well as goods and services are projected to grow, respectively, by 5.2 and 2.4 percentage points in 2014, up from 22% and 8.3% of the overall budget for 2013. The cost of public borrowing is expected to grow by 8.9% compared with 7.6% in 2013, reflecting the weak financial market.(Economic Commission for Africa, 2014).

Using ordinary least squares technique and annual time series data covering the period (1990-2010), Alfaki (2013) examined the impact of fiscal, monetary, foreign

trade policies on economic activities in Sudan. He tested the hypothesis that the real growth rates in money supply, real growth rate in government expenditure, and openness have a positive impact on economic activity. The empirical results revealed that, trade openness variable are more potent than fiscal and monetary variables. Trade openness and fiscal policy influences were significant in determining the growth rate in real GDP. Based on the findings of the study, more encouragement for foreign trade is needed by facilitating procedures and eliminating all barriers in order to achieve higher rates of economic growth. Import substitution and export promotion strategies should be adopted with the diversification of production and markets as well as improving economic infrastructure, particularly roads and bridges. Furthermore, a rational fiscal policy that raises the rate of economic growth and reforms development projects should be adopted.

4-RESEARCH METHODOLOGY AND EMPIRICAL RESULTS:

4.1 RESEARCH METHODOLOGY:

This chapter specified the research methodology that will be used in the analysis of the findings and the empirical results. Firstly, it provide the empirical model employed in this study that is a linear regression model which describes the determinants of economic performance in Sudan taken in logarithm as given by the following equation, where exchange rate defined as unit of foreign currency against units of domestic currency.

$$LogRGDP = \beta 1 LogRG + \beta 2 1ogRX + \beta 3 LogREX + \mu t \qquad (1)$$

$$\beta 1. \beta 2 \ and \ \beta 3 > 0$$

Where:

RGDP: Gross Domestic Product

RG: Real Government Expenditure

REX: Exchange Rate

RX : Real Exports

μt : The error term, which is assumed to be serially uncorrelated, with zero mean and constant variance.

The model incorporated three variables namely, Government Expenditure (G), Exports (X), and Exchange Rate (EX) which are assumed to be positively related to Gross Domestic Product (GDP) which increased government Expenditure on vital sectors generates revenues increase GDP and supports economic growth, exchange rate is expected to have negative or positive effect on growth domestic product, this is because an appreciation of exchange rate would results in increase in the prices of domestic goods, which discourage consumption accordingly growth domestic product will decrease.

According to economic theory depreciation in exchange rate encourage export by lowering the foreign price of exports, accordingly exports will increase. Then GDP will increase.

Thus, the relationship between exchange rate, exports and GDP are positive. Also the gap of foreign resources can be bridge by diversification of production

and world market for the exports purpose this will lead to stabilize exchange rate, and then GDP will improve.

The real values of the variables are calculated as nominal values divided by Consumer Price Index (CPI) as reported in table (2) of the appendices, the data are collected from various sources mainly, Central Bank of Sudan Annual Reports and the Central Bureau of Statistics as reported in table (1). Ordinary Least Squares (OLS) method is adopted to analyze data covering period (1992-2012).

4.2 EMPIRICAL RESULTS:

To obtain the objective of the study, Ordinary Least Squares (OLS) method is applied to the linear regression model specified in equation (1), using data covering period (1992-2012) in table (2) of the appendix. The results are given in equation (2), where the figures inside the brackets are t-ratios of the estimated coefficients.

$$Log\ RGOP\ =\ 1.53 + 0.12 Log\ RG\ +\ O.38 Log\ RX$$
$$+\ 0.23 Log\ REX\ \ \ \ \ \ (2)$$

(2.97)   (1.90)   (7.31) (2.98)

$R^2 = 0.91$ F = 64.13

$R^2 = 0.90$ DW = 1.57

According to the above results, equation (2) is statistically significant at the 1 percent level as indicated by the (F) ratio. The value of R2 suggested that 91 percent of the variation in real growth domestic product (RGDP) is explained by the variations in the Government expenditure RG,exports (X), and Exchange Rate (EX)respectively, While about 9percent of the variation in real growth domestic product (RGDP) is explained by the variations in the explanatory variables which are not included in the model and are represented by the random error. Durbin-Watson statistic indicates the absence of serial correlation problem in the model at the 1 percent level. All expected sings of the determinant variables are confirmed by the empirical results. According to values of T-ratios, exports an exchange rate are significant at 1 percent level, while the government expenditure is significant at 10% level. The exports seems to be the most important factor that affect the economic growth in Sudan during the period (1992-2012), This results supports the results obtained by Meezan (2000) and Hussein (2003). The second variable is exchange rate, this suggests that, the exports and exchange rate seem to be most important policy to support economic Activity.

According to what have been mentioned above, the strategies that stabilize exchange rate and encourage exports promotion are needed to enhance economic activity in the main sectors of economy in sudan.

5-CONCLUSION AND RECOMMENDATIONS:

5.1 CONCLUSION:

This study tried to evaluate the relative impact of Government Expenditure, Exchange Rate, and Exports on economic performance in Sudan. For this purpose, a linear regression model is specified with taking logarithm and estimated employing data covering the period (1992-2012) which were obtained from the Central Bank of Sudan and Central Bureau of Statistic. Real Growth Domestic Product (RGDP) is selected as a measure of economic activity or economic performance. Government expenditure, exchange rate, and exports are considered as determinants of economic performance. Ordinary Least Squares (OLS) method is applied to the linear regression model. The empirical results indicated that, exports and exchange rate are more effective than government expenditure, exports and exchange rate are more significant in determining economic performance.

5.2 RECOMMENDATIONS:

Based on findings of the research there are some recommendations:

- More encouragement for exports is needed by facilitating procedures and eliminating all barriers in order to achieve higher rates of economic activity.

- Export promotion strategies should be adopted with diversification of production and markets as well as improving economic infrastructure, particularly roads and bridges. Furthermore, stabilized exchange rate policies should be adopted to achieve economic activity

- Redirect government spending towards public and private enterprises to increase their productivity and thus increase GDP.

- Promote exports through transferring part of government expenditure in order to support the production of export goods.

- Using public resources effectively by subjecting public expenditure to economic feasibility standards.

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APPENDIX

Table (1) : Growth Domestic product GDP), Government Expenditure (G), Export (X (in Million Sudanese Pounds)). Exchange Rate (EX) and Consumer Price Index (CPI) (2007 = 100) (1992-212)

Year	GDP	G	X	EX	CPI
1992	421.80	2903.12	25141.00	.10	1.32
1993	948.40	1832.98	49656.00	.13	3.73
1994	1881.30	1561.42	111464.0	.22	7.99
1995	4149.40	2304.97	350075.0	1.40	13.15
1996	10478.13	1331.94	539069.0	1.25	27.59
1997	16137.37	1234.82	769528.0	1.58	40.95
1998	21935.90	2373.92	1006928	1.99	48.62
1999	27058.80	2214.30	1853219	2.52	57.80
2000	33662.70	1845.12	4832563	2.57	62.03
2001	40658.60	2615.14	4687155	2.59	69.51
2002	46701.95	2915.60	5287200	2.63	73.85
2003	54886.70	3872.59	6450880	2.61	80.89
2004	67533.39	5736.92	8735308	2.58	87.84
2005	84176.12	7916.94	10601781	2.44	94.16
2006	96935.90	9544.04	11575244	2.17	100.00
2007	115529.9	9611.32	17893359	2.02	114.30
2008	132323.0	10536.19	24612008	2.09	127.15
2009	135659.0	11758.40	17135786	2.00	143.65
2010	162203.9	12000.74	26822278	2.09	169.62
2011	186689.9	13071.17	23937092	3.24	230.00
2012	243412.8	26272.10	10862065	4.41	314.00

Source: Central Bank of Sudan and Central Bureau of Statistics.

Table (2) : Real Gross Product (RGDP), Real Government Expenditure (RG), Real Exports (RX), (in Million Sudanese Pounds) and Exchange Rate (REX) Consumer Price Index (CPI) (2007=100) (1992-2012)

Year	RGDP	RG	RX	REX	CPI
1992	319.55	2199.33	19046.21	.10	1.32
1993	254.26	491.42	13312.60	.13	3.73
1994	235.46	195.42	13950.44	.22	7.99
1995	315.54	175.28	26621.67	1.40	13.15
1996	379.78	48.28	19538.56	1.25	27.59
1997	394.07	30.15	18791.89	1.58	40.95
1998	451.17	48.83	20710.16	1.99	48.62
1999	468.15	38.31	32062.61	2.52	57.80
2000	542.68	29.75	77906.87	2.57	62.03
2001	584.93	37.62	67431.38	2.59	69.51
2002	632.39	39.48	71593.77	2.63	73.85
2003	678.54	47.87	79748.79	2.61	80.89
2004	768.82	65.31	99445.67	2.58	87.84
2005	893.97	84.08	112593.3	2.44	94.16
2006	969.36	95.44	115752.4	2.17	100.00
2007	1010.76	84.09	156547.3	2.02	114.30
2008	1040.68	82.86	193566.7	2.09	127.15
2009	944.37	81.85	119288.5	2.00	143.65
2010	956.28	70.75	158131.6	2.09	169.62
2011	811.70	56.83	104074.3	3.24	230.00
2012	775.20	83.67	34592.56	4.41	314.00

Source: Own calculations based on data of table (1).