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The Impact of Financial Development on Economic Growth in Sudan

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Abstract

The paper sought to investigate the Impact of Financial Development on Economic Growth in Sudan during the period of 1990–2014. The research is intended to detect whether the financial development has contributed positive role or not on economic growth in Sudan during the period of last 24 years , using Augmented Dickey Fuller Test to figure out the availability of Unit root in the variables . Then after applying the Johnsen co-integration test the empirical results of the test have shown the association and positive impact of the money supply and banking credit to private sector on economic growth(GDP) in Sudan which discovered out the short and long run relationship between financial development and economic growth. The test shows the positive association between financial development and economic growth in Sudan which led to run the (VECM) . The result of Vector Error Correction Model identified statistically significant of money supply and bank credit to private sector on economic growth . However , the financial sector is in needed for dramatic reforms in term of formulation of banking capital , effective financial regulations and balance in distributing banking credit to the most productive sectors of the economy . According to the figures (1) and (2) that showed the diagram of real GDP and GDP per capita in Sudan . the separation of South Sudan from Sudan was a great choke that hit Sudan's economic growth severely , especially in the first and second year of the separation . But Sudan still has capacity to put its economic growth into right track if the political crisis resolved and investment's opportunities open to the world.

Key Words: *Financial, Development, Economic, Growth, Bank, Credit, Capital, Political, Instability, GDP.*

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1.1 Background of the Study

The history of evolution and globalization of finance stretches over an extended period ranging from its recorded origin in the villages of Mesopotamia 5000 years ago to sparkling numbers on foreign exchange screens in the financial markets of today progressively increasing cross border trade in financial assets give rise to what is called financial globalization (Das, 2010) Financial development entails overcoming costs incurred in the financial system . It also involves the process of reducing the acquiring information , enforcing contracts and making transactions resulted in the emergence of financial contracts , markets and intermediaries across the countries and throughout history (Levine, 2005).Financial development occurs when financial instruments , markets and intermediaries ease the effects of information , enforcement and transactions costs and therefore do a corresponding better job at providing the key functions of the financial sector in the economy (World Bank 2013). Levine (1997) defined financial development as the costs of acquiring information , enforcing contracts and making transactions create incentives for the emergence of particular types of financial contracts , markets and intermediaries. Cihak, Kunt, Feyen and Levine (2000) defined financial development as improvements in the quality of five key financial functions like; producing and processing information about possible investments and allocating capital based on these assessments, monitoring individuals and firms and exerting corporate governance after allocating capital, facilitating the trading, diversifications and management of risk , mobilizing and pooling savings, and lastly easing the exchange of goods , services and financial instruments.

Economists have over time continued to debate the impact of financial development on economic growth, with some ideas that financial development has no impact on economic growth,Lucas (1988). Cihak*et al* (2010) noted that well- functioning financial systems play an independent role in promoting long – run economic growth. The impact of financial sector development in developing countries mostly is to stimulate economic growth which help to reduce poverty . It plays a significant role in economic growth through accumulating the financial capital by boosting savings rate as well as allocating capital , pooling savings and encouraging foreign capital inflows (Kunt, 2008).The role of financial development on economic growth has been investigated by many researchers in the recent years. Levine (1997) in the study of financial development and its effects on economic growth observed a strong positive link between the functioning of the financial system and long-run economic growth.

King and Levine (1993) in another research on finance and growth shows that the level of financial development together with the size of the formal financial intermediary sector relative to GDP , also the importance of banks relative to central banks and the percentage of credit allocate to private firms , in addition to the ratio of credit issued to private firms to GDP , are strongly and robustly correlated with economic growth. In the perspective of developing countries , where technology is not playing key role in economic development , the financial institutions play great role in supporting economic growth as most of the developing countries depend on natural resources in their economies . In this regard , the

commercial banks take the lead of financial institutions in financing the agricultural projects. Khater (2014) on the role of commercial banks and their positive effects on economic growth in Sudan obtained in his empirical results of the study that commercial banks play great role in financing agricultural sector which is the main sector for Sudanese economy. Saber (2013) while studying financial intermediation and economic growth in Sudan , through his analytical and empirical evidence indicated that commercial banks credit to private sector and the liquid liabilities exert positive effect on economic growth. On the other hand , the history of the financial institutions in South Sudan is a short one . Throughout the Khartoum's rule till the end of civil war in 2005 , there were very few commercial banks concentrated in Juba , Wau and Malakal .

South Sudan was deliberately excluded from economic system. As a result 90% of the population in South Sudan were not exposed to banking services .Access to finance was limited to Northern traders operating in South Sudan in February 2008, Islamic Banks left the South Sudan since the bank of Southern Sudan (BOSS) introduced conventional banking systems . However , after the (CPA) , the bank of South Sudan , although a mere branch of the Central Bank of Sudan , took a bold step by licensing local and expatriate banks that interested to invest in South Sudan . As of November 2013 , the strong commercial banks in the banking market were , Kenyan commercial Bank , Equity Commercial Bank , cooperative Commercial Bank (joint – venture) company for Kenyan and South Sudanese Governments. Ethiopian Commercial Bank , Stanbic Commercial Bank , Ivory Commercial Bank of South Sudan , South Sudanese Agricultural Bank . In addition to (10) micro finance institutions and a handful of Insurance Companies (South Sudanese Investment Conference Report 2013).

Globally, financial development plays big role in economic growth. It promotes economic growth through capital accumulation and technological progress by increasing the savings rate, mobilizing and pooling savings , producing information about investment , facilitating and encouraging the inflows of foreign capital, as well as optimizing the allocation of capital,(World Bank, 2013). In African Countries, financial development plays great role in promoting small business that plays significant role in reducing poverty in urban and rural areas. The banking sector with its financial capability provides credits to agricultural communities, small industrial business and to local trading , all those activities are for accelerating economic growth. In Sudan, the financial sector plays central role in the process of economic development and growth. Banks as financial intermediaries play key role in transferring deposits into financial assets, they channel funds from entities with surplus liquidity to the economic sectors that deal with production activities that employ workforce and consequently reduce the unemployment (Saber, 2013).

1.2 Statement of the Problem

Since in Independence in 1956, Sudan's economic growth has shown fluctuating trends reflecting the effect of fluctuating weather conditions on agricultural productions. The economy has registered positive growth during two periods 1971 to 1983, and 1990s (Saber, 2013). The role of financial development in accelerating economic growth has been

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investigated by many economists since early nineteen century , and was proved through empirical studies that the impact of financial development is positively supporting the economic growth (Schumpeter, 1873; Levine, 2005; Khater, 2014). Thus , the problem which is being investigated in this paper is concerning the comparison of real GDP growth before and after the separation of South Sudan from the Sudan.

In Sudan, formal and informal Financial sectors play great role in reduction of poverty rate through commercial banking credit to economic projects and to micro financial activities , therefore , the paper intends to investigate how financial development has been supporting the economic growth in the country from the period of 1990 to 2014 , with concentration on the period after South Sudan separated from Sudan. Abdalla and Dafaalla (2011) were investigating the relationship between stock market development and economic growth in their research for the period from 1995 - 2009 , the findings suggest that stock market development in Sudan leads to economic growth for the period under study. Saber (2013) was testing the long and short run relationship between financial intermediation and real per capita GDP in Sudan using annual time series data during 1970 to 2011 , by employing the (ARDL) , the results of the long run analysis indicates that credit to the private sector and liquid liabilities exert positive effects while money supply affect real per capita GDP negatively. Khater (2014) was examining the impact of financial development on economic growth in Sudan during the period from 1970 – 2012, in the final findings of the research , the study produces that short and long terms of financial development didn't make any significant impact on economic growth in the country , nevertheless, the financial development has made a small contribution on economic growth

1.3 Objectives of the Study

i. To identify the role of financial development in Economic growth in Sudan
ii. To determine the impact of the political instability on both financial development and economic growth
iii. To suggest the significant role of foreign investment in the country .
iv. To demonstrate the Real GDP growth and GDP per capita by using the data diagraph from the year (1990 – 2014) .

1.4 Research Questions

i. What is the relationship between financial development and real GDP growth in Sudanese Economy?
ii. What is the impact of financial sector on economic growth in Sudan?
iii. How does the inflow of finance from foreign countries boost the economic growth in Sudan?

2.0 Literature Review

2.1 Theoretical Literature

There is theoretical and empirical literature linking financial sector development and economic growth , the role of the banking sector as an accelerator of economic growth due

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to its role as a financier of productive (Susanne, 2003). According to the study , the endogenous growth theory allows the financial sector to play an important role for capital accumulation and for the diffusion of new technologies. Theoretical models have identified a number of channels through which financial integration can promote economic growth. Figure 1 illustrates the channels through which financial sector influences economic growth.

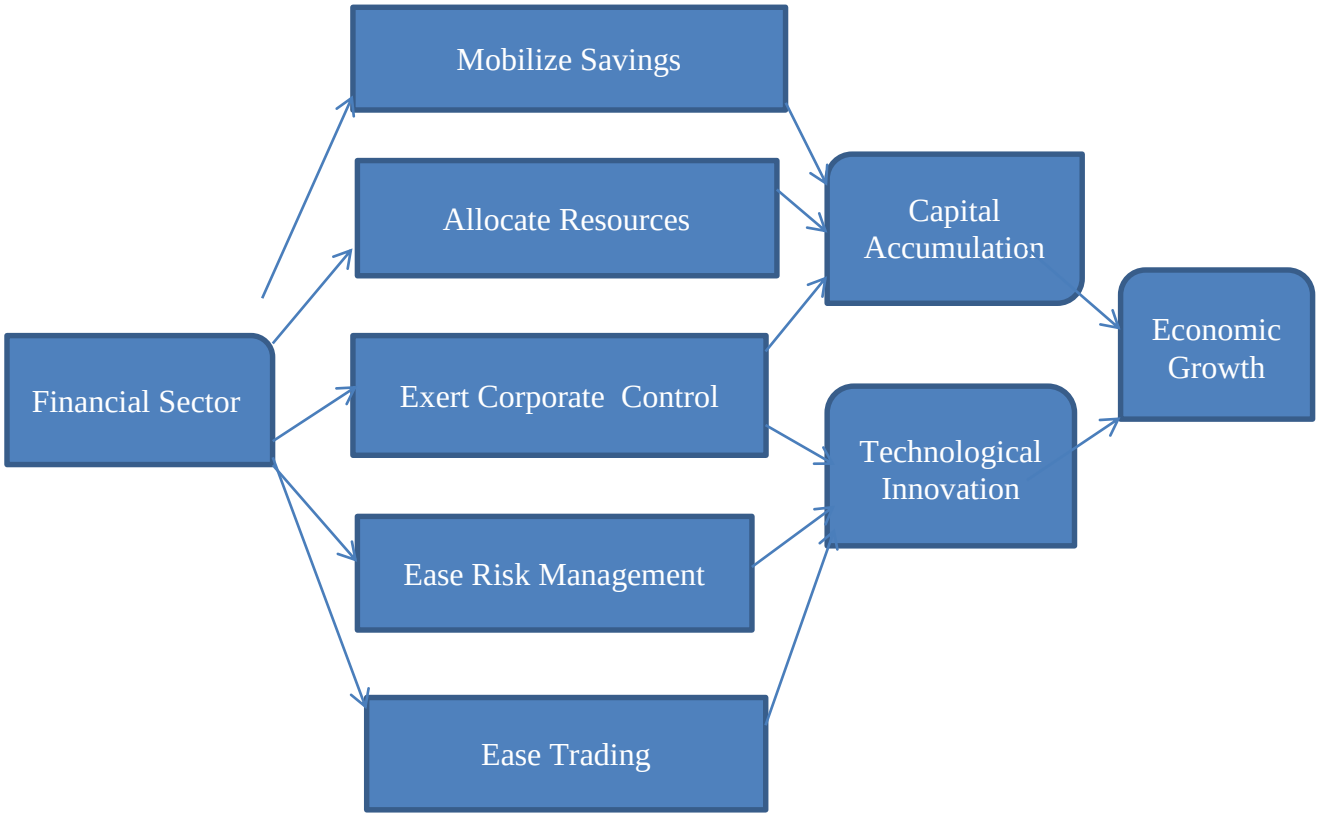

Figure1: Theoretical Framework

Source: Susanne (2003)

The countries with better developed financial systems experience faster economic growth and enjoy lower levels of poverty, (Kunt, 2008) , and the same financial theory was applied by (Levine 2005) on his study of financial development and its impact on economic growth where he came up with the results that ,the better developed financial systems ease external financing constraints facing firms , which illuminates one mechanism through which financial development influences economic growth . Therefore , the concentration in this paper study will be put on the kind of financial systems that are being undertaken by the monetary authority and fiscal policy in Sudan. Many Researchers over the world have been engaged

in different examinations for the purpose of identifying the impact of financial development on economic growth. Some of Researchers obtained positive link between financial development and economic growth for example,((Levine,1997),on his study of impact of financial development on economic growth, the empirical analyses demonstrate a strong positive link between the functioning of the financial system and long-run economic growth. But Lucas (1988) has dismissed finance as an overstressed determinant of economic growth .

Andersen (2003) was studying the impact of financial development on economic growth , the empirical evidence shows that the countries with a more developed financing sectors will grow faster than countries with a less developed financial sectors , and he concluded that the financial development has a positive effect on economic growth .

In Sudan , (Khater 2011) was examining the relationship between financial development and economic growth , the study produced short and long term relationship between financial development and economic growth using annual time series data during(1970 to 2012) , by applying the VECM . The Johnson co- integration test revealed the long term relationship among the variables . As financial indicators concerned , the empirical evidence indicated that ratio of broad money to GDP has negative and statistically has significant impact on economic growth. The ratio of domestic credit to the private sector GDP (PCGDP) The ratio of bank deposits to GDP (BDGDP) have marginal positive impact on economic growth . The results of the study show that financial development has made a small contribution to accelerate economic growth in Sudan.(Suliman & Dafaala 2011) in their study for stock market development and economic growth in Sudan from (1995 –2009), they concluded that the GRANGER CAUSALITY tests result suggested that stock market development in Sudan leads to economic growth at least for the period under study in 2011 .

The study by (Musamali & Moyi 2014) , the have been using cross- section of (50) African countries for the period (1980 – 2008) , from the regression analysis , they established a positive relationship between financial development and economic growth from causality testing , the bidirectional relationship between financial development and economic growth in Africa was reflected positively . There is a strong positive link between private sector credit and economic growth in Africa. (Kireyev May 2001) has indicated in his study of financial development and economic growth in Sudan , his empirical study shown that weak financial system in Sudan has hindered financial development to have positive impact on economic growth. Kabir, Hassan , Sanchez and YU, (2011) , in their research on financial development and economic growth in the organization of Islamic Conference Countries , their empirical results show statistically of time series average during the (1980 – 2005). The region has shown lower average growth rate compared to other countries which are not in organization in Asia and Africa .

The researchers have found long run association between financial development and economic growth , especially the proxies for financial development except gross domestic savings , which are positively associated with economic growth in Islamic Organization Countries .And in Study on financial development and economic growth conducted by (Mansure, 2015) on Singapore financial development and economic growth , the empirical

results of the study has shown that the relationship between GDP growth and financial development is inconclusive .

The paper was re-investigating the empirical relationship between financial development and economic growth in Singapore during the period 1970 - 2013 . and positive result between financial development and economic growth was obtained . (Abdu & Ntim 2015) on financial development and economic growth in China after 1978 , the empirical results show that financial development has a negative effect on economic growth in general , but the growth of the tertiary industry in particular . their findings indicated that financial development has no effect on the growth of both the primary and secondary industries. (Odhiambo, 2015) , on financial development and economic growth in the UK's financial development and economic growth in UK during (1980 – 2012) , the empirical findings have been largely inconclusive . The study uses the recently developed ARDL bounds testing technique to examine this relationship . Also , The empirical results show that in the UK, market based financial development has a positive impact on economic growth .

2.2 Empirical Review

Different Researches were conducted by many scholars on investigating whether the financial development has impact on economic growth or the two variables have causality relationship among each other .,Many economists obtained positive empirical evidence that proves the impact of financial development in accelerating economic growth (Levine 2000) in his studying of financial Intermediation and economic growth , the empirical work proved that , three financial intermediary development indicators (Liquid Liabilities , Commercial - Central Bank and private credit) are significant at 0.05 significance level in the levels , difference and system dynamic panel growth regressions with one exception the coefficient on liquid. However , on the other hand , the economist (Lucas, 1988) dismisses finance as playing a leading role in the process of economic growth .

The growth in gross domestic product (GDP) per capita is the most commonly used measure of economic growth . Yet , Levine (1997) uses three different indicators for growth 1- The average rate of real per capita GDP growth 2- The average rate of growth in the capital stock per person 3- Total productivity growth . However , he obtains GDP per capita growth to be the most useful for investigating economic growth. (Khater 2014) was studying the effect of financial development on economic growth in Sudan . The results obtained through checking stationarity of the variables , the Augment Dickey Fuller (ADF) test showed that all variables were non- stationarity in levels , but stationarity in first difference , implying that all the variables are integrated . And by using Johansen co-integration test , the variables indicate that there is one co-integrating equation implies a long – run relationship between economic growth and the financial development proxies , and by using VECM estimates , the results show that credit to private sector (PSGDP) , deposit liability (DLGDP) were significant at (1) per cent with expected sign at (1) per cent rise in credit to private sector (PSGDP) , deposit liability (DLGDP) lead an increase in economic growth . (Saber Ali 2013) on the study of financial intermediation and economic growth from the period 1970 – 2011 , the findings evidence of the work give support to the use of (ARDL) bounds

approach to determine the long run relationship among the Variables. On other research (Levine 1997) was investigating the relationship between financial development and economic growth . The empirical evidence of the study has demonstrated a strong positive link between the functioning of the financial systems and long-run economic growth .

2.3 Conceptual Framework

The conceptual framework of this paper is to investigate the impact of independent variable which is the financial development on dependent variable which is the economic growth in Sudan by using regression model , ordinary least square formula to predict the role of financial development on economic growth in Sudan. The financial intermediaries play a great role in accumulating the saving or financial capital that forms the mechanism for accelerating the investments activities in the financial market , which leads to create opportunities for employments that boost economic growth. (Levine, 2005) was studying finance and growth and his theory of the study suggested that financial systems influence growth by easing information and transaction costs , thereby improving the acquisition of information about firms , corporate governance , risk management , resource mobilization and financial exchange . Therefore , the objective of this paper is to investigate the financial development impact on the real GDP growth in Sudan from the period 1990 to 2014 , with the specific concentration on the growth after separation of South Sudan from the Sudan so as to prove the presumption that the civil war between two parts of the country was one of the factors behind the poor performances of the economy and lack of proper development in financial sector in the country since the independence in 1956 (Saber & Ali, 2013).

3.0 Research Design and Methodology

The study adopted a descriptive research design since the study was about description of variables. The study used secondary data from the period 1990 – 2014. The data was collected from the Ministry of Finance and National Economy, Central Bank of Sudan , Central Bureau of Statistic of Sudan , World Bank and International Monetary Fund. In addition to Sudanese financial Institutions , Bank of Sudan , Ministry of Finance and National Economy and Sudanese Bureau of Statistics. The regression model was used by (Saber Ali 2013) in his research on financial development and economic growth in Sudan to capture natural logarithm of real per capita GDP , the three indicators of financial development , namely , bank credit to the private sector (BCPS) , is the more superior measure of functioning financial development , because it is a measure of the quality and quantity of investment. The regression model was the tool that he used for estimating different variables of financial development and economic growth .

The formulation begins with growth equation as follows:

$$Gy = \beta 0 + \beta 1Fit + \beta 2Xit + Et \quad \text{---------- (1)}$$

Where gy is economic growth , defined as the log of real GDP , Fi represents the indicator of financial development , X is a matrix of conditioning variables , $\beta 0$, $\beta 1$, $\beta 2$ are parameters to be estimated and Et , is the error term . The financial development variables are defined

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as follows , real GDP (M2/GDP) , Banks credit to private sector , then , the equation will be as the follows .

$Gyt = \beta 0 + \beta 1m2 + \beta 2bc + Et$ ---------- (2)

In addition to that there are other factors that associated with economic growth such as education , political stability , fiscal and monetary policy . Therefore , the following variables are included , inflation rate (infr) , exchange rate (exr) , interest rate (intr) , total export (tex) . Then the dummy variable for political instability. Therefore , the relationship between financial development and economic growth will be demonstrated as follows :

$Gy = \beta 0 + \beta 1m2 + \beta 2bc + \beta 3infr + \beta 4exr + \beta 5intr + \beta 6tex + Et$ -- (3)

4.0 Research Findings and Discussions

Three models of checking unit root or stationary of the variable using Augmented Dicky Fuller Test :

$Yt = \beta 1 + ZYt\text{-}1 + \alpha i + Et$ ----------(1) Intercept .

$Yt = \beta 1 + \beta 2t + ZYt\text{-}1 + \alpha i + Et$ ----------(2) Trend and Intercept .

$Yt = ZYt\text{-}1 + \alpha i + Et$ ---------- (3) No Trend, No Intercept.

Hypothesis:

H0 : Variable is not stationary , or has no unit root .

H1: Variable is stationary.

The Augmented Dickey Fuller Test (ADF) is to be used to test the null hypothesis of a unit root that presents in a time series data . The model is used to determine the existence of unit root in the variables under test .

Table 1: ADF Unit Root Test

Null Hypothesis: Y has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=4)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.064676	0.9428
Test critical values:	1% level	-3.737853	
	5% level	-2.991878	
	10% level	-2.635542	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

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Dependent Variable: D(Y)
Method: Least Squares
Date: 03/27/17 Time: 09:24
Sample (adjusted): 1991 2014
Included observations: 24 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Y(-1)	-0.001683	0.026022	-0.064676	0.9490
C	0.908900	0.496822	1.829428	0.0809

R-squared	0.000190	Mean dependent var	0.879167
Adjusted R-squared	-0.045256	S.D. dependent var	0.902643
S.E. of regression	0.922842	Akaike info criterion	2.756938
Sum squared resid	18.73602	Schwarz criterion	2.855109
Log likelihood	-31.08325	Hannan-Quinn criter.	2.782983
F-statistic	0.004183	Durbin-Watson stat	1.422148
Prob(F-statistic)	0.949016		

The empirical work that has been done in Table 1 was intended to check the unit root or stationary of the variable using the Augmented Dickey Fuller (ADF) Test . The empirical result has shown that the variable is non- stationary at three levels . trend and Intercept , Intercept and no intercept no trend.The Augmented Dickey Fuller Test for the variable(y) in table (2) above is non-stationary at levels , but stationary at first differences .

Johnsen Co- integration test is used when the variables are not stationary and that is to detect whether the variables have long run association or whether the variables are co-integrated and the precondition of running the Johnsen co-integration Test is that the variables must be non- stationary and integrated in order .

Table 2: Johnsen C0-Integration Test

Date: 03/29/17 Time: 00:12
Sample (adjusted): 1993 2014
Included observations: 22 after adjustments
Trend assumption: Linear deterministic trend
Series: Y M2 BCP
Lags interval (in first differences): 1 to 2

Unrestricted Co-integration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.765028	41.99661	29.79707	0.0012
At most 1	0.348271	10.13429	15.49471	0.2706
At most 2	0.032000	0.715500	3.841466	0.3976

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

Unrestricted Co-integration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.765028	31.86232	21.13162	0.0011
At most 1	0.348271	9.418789	14.26460	0.2529
At most 2	0.032000	0.715500	3.841466	0.3976

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

Unrestricted Co-integrating Coefficients (normalized by b'*S11*b=I):

Y	M2	BCP
-0.051752	-0.000843	-0.114517
-1.040149	0.000654	0.266171
0.719917	-0.001239	0.630421

Unrestricted Adjustment Coefficients (alpha):

D(Y)	-0.398192	0.154279	-0.102740
D(M2)	-620.6632	-305.7563	11.17790
D(BCP)	0.071868	-0.456398	-0.144564

1 Co-integrating Equation(s): Log likelihood -221.8686

Normalized co-integrating coefficients (standard error in parentheses)

Y	M2	BCP
1.000000	0.016289	2.212801
	(0.00316)	(1.94224)

Adjustment coefficients (standard error in parentheses)

D(Y)	0.020607	
	(0.00925)	
D(M2)	32.12049	
	(8.64487)	
D(BCP)	-0.003719	
	(0.01548)	

2 Co-integrating Equation(s): Log likelihood -217.1592

Normalized co-integrating coefficients (standard error in parentheses)

Y	M2	BCP
1.000000	0.000000	-0.164128
		(0.21508)
0.000000	1.000000	145.9236
		(103.336)

Adjustment coefficients (standard error in parentheses)

D(Y)	-0.139866	0.000437
	(0.18105)	(0.00019)
D(M2)	350.1526	0.323199
	(151.729)	(0.15545)
D(BCP)	0.471003	-0.000359
	(0.28446)	(0.00029)

After running the three variables under Johnsen Co-integration Test in Table (3) above , the result of the test indicates that there is one co- integrating equation implies that there is long run co- integration between the variables , which means the long run relationship between the economic growth and the financial development . And whenever the variables are co-integrated , the Vector Error Correction Model (VECM) must be run.

Table 3: Vector Error Correction Model (VECM)

System: UNTITLED
Estimation Method: Least Squares
Date: 03/29/17 Time: 00:17
Sample: 1993 2014

Included observations: 22
Total system (balanced) observations 66

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	0.020607	0.009246	2.228683	0.0312
C(2)	0.015269	0.245246	0.062261	0.9507
C(3)	-1.345892	0.610599	-2.204215	0.0330
C(4)	-0.001176	0.000503	-2.337574	0.0242
C(5)	-0.000880	0.000421	-2.091893	0.0425
C(6)	0.624489	0.204790	3.049407	0.0040
C(7)	0.276624	0.233788	1.183227	0.2434
C(8)	7.706521	3.101003	2.485171	0.0170
C(9)	32.12049	8.644868	3.715556	0.0006
C(10)	-2219.160	229.2930	-9.678272	0.0000
C(11)	413.6261	570.8792	0.724542	0.4728
C(12)	-1.198746	0.470529	-2.547653	0.0146
C(13)	-0.815585	0.393275	-2.073826	0.0443
C(14)	705.5318	191.4688	3.684840	0.0006
C(15)	138.2616	218.5800	0.632545	0.5305
C(16)	10722.08	2899.281	3.698185	0.0006
C(17)	-0.003719	0.015481	-0.240248	0.8113
C(18)	-0.661766	0.410612	-1.611659	0.1145
C(19)	0.868304	1.022316	0.849350	0.4005
C(20)	0.000199	0.000843	0.236156	0.8145
C(21)	5.77E-05	0.000704	0.081972	0.9351
C(22)	0.376495	0.342877	1.098047	0.2784
C(23)	-0.004307	0.391427	-0.011002	0.9913
C(24)	-0.807103	5.191957	-0.155453	0.8772
Determinant residual covariance		115409.6		

Equation: D(Y) = C(1)*(Y(-1) + 0.01628884944*M2(-1) + 2.2128006673 *BCP(-1) - 288.715547482) + C(2)*D(Y(-1)) + C(3)*D(Y(-2)) + C(4) *D(M2(-1)) + C(5)*D(M2(-2)) + C(6)*D(BCP(-1)) + C(7)*D(BCP(-2)) + C(8)

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Observations: 22

R-squared	0.470535	Mean dependent var	0.904545
Adjusted R-squared	0.205802	S.D. dependent var	0.940353
S.E. of regression	0.838022	Sum squared resid	9.831931
Durbin-Watson stat	2.049310		

Equation: D(M2) = C(9)*(Y(-1) + 0.01628884944*M2(-1) + 2.2128006673 *BCP(-1) - 288.715547482) + C(10)*D(Y(-1)) + C(11)*D(Y(-2)) + C(12) *D(M2(-1)) + C(13)*D(M2(-2)) + C(14)*D(BCP(-1)) + C(15)*D(BCP(-2)) + C(16)

Observations: 22

R-squared	0.977283	Mean dependent var	3527.155
Adjusted R-squared	0.965924	S.D. dependent var	4244.436
S.E. of regression	783.5083	Sum squared resid	8594393.
Durbin-Watson stat	2.183139		

Equation: D(BCP) = C(17)*(Y(-1) + 0.01628884944*M2(-1) + 2.2128006673 *BCP(-1) - 288.715547482) + C(18)*D(Y(-1)) + C(19)*D(Y(-2)) + C(20) *D(M2(-1)) + C(21)*D(M2(-2)) + C(22)*D(BCP(-1)) + C(23)*D(BCP(-2)) + C(24)

Observations: 22

R-squared	0.419499	Mean dependent var	0.209091
Adjusted R-squared	0.129249	S.D. dependent var	1.503618
S.E. of regression	1.403086	Sum squared resid	27.56112
Durbin-Watson stat	1.881631		

Some variables from (VECM) Table 3 above after estimation show that the GDP is significant at C (1) , C(3) , C(4) , C(5) , C(6) C(7) and C(8) while M2 money supply is significant at C(9) ,c(10) , c (12) , C (13) , C(14) and C(16) while BCP Bank credit to private sector didn't show any significant point . So according to the estimation , it shows that the money supply has got impact on economic growth in Sudan which leads to decrease unemployment in the country and raises the welfare of the citizen . The bank advance to private sector as well has shown the crucial role that played by commercial banks in supporting economic growth .

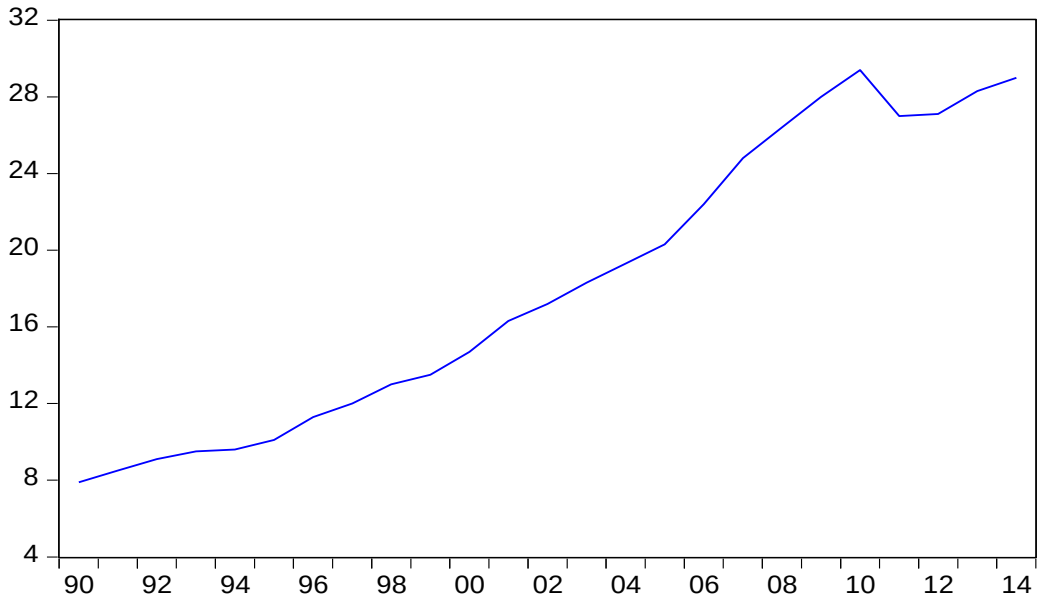

Figure 2: Sudan Real GDP (1990 – 2014)

Figure 2 shows the Sudan's economic growth . Sudan's economy depends on agricultural products which includes cotton , peanuts , gum Arabic and sesame seeds . So , the above diagram illustrates the Real GDP trends from 1990 – 2014 , and shows how the oil production boomed the economy from 2000 to 2010 . In addition to the large inflows of foreign direct investment in the time of oil production .

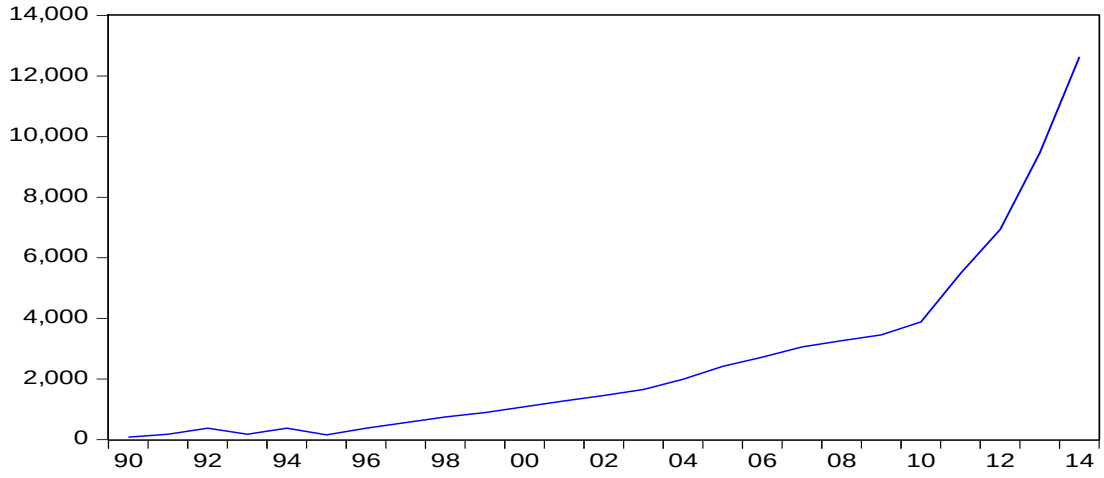

Fig 3: Sudan GDP per Capita (1990 – 2014)

Based on results in Figure 3, the records by IMF in 1990 , was at 569.007 US dollars , which equivalent to - 4.20% of the world's average . And the last recorded in 2014 , was at

4267.257 US dollars , which equivalent to 1.73% of the world's average (IMF online).

5.0 Summary, Conclusion and Recommendations

The research was intended to detect whether the financial development has been contributing a positive role or not on the economic growth in Sudan during the year (1990 – 2014) . The result of the study has shown the short and long run relationship between financial development and economic growth in Sudan . By using the annual time series data from Central Bank of Sudan during the period 1990 – 2014 , the Augmented Dickey Fuller Test was applied for checking Unit root or Non- stationary of the variables , Then Johnsen Co-integration Test was used to check the association of short and long run relationship between financial development and economic growth . The result showed that there is a positive impact of money supply and bank credit to private sector on economic growth in the country .The most negative coefficients in (VECM) and statistically significant implies the weakness in banking capital and imbalance in bank credit to private sector . So to improve the situations , the financial institutions in the country must be reformed , and the very effective financial regulations should be formulated to develop the financial sector so that commercial banks raise financial capacity to finance the productive activities in the economy .

According to the figures (1) and (2) , The separation of South Sudan from Sudan has affected Sudan's economic growth severely in the first and second year after the separation of South Sudan from Sudan . But Sudan is still has potential to develop its economy if the internal political crisis are settled and the country initiates to increase agricultural production in large scales . Also , the country can increase mineral productions and opens the opportunities for investors from different countries around the world to come and invest in Sudan so as to cover the economic gap that has occurred after the separation of South Sudan.

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