ملحق رقم (1) بيانات الدراسة

INF	IMP	GDP	EXPO	EX	DEB	Obs
67.38	712.9	101.17	333.7	0.05	15.305	1990
122.52	1250.8	81.65	308.7	0.05	15.834	1991
119.24	890.3	64.17	221.6	0.1	16.085	1992
101.18	1161.5	63.5	523.9	0.13	16.321	1993
115.93	1161.5	70.97	523.9	0.22	18.002	1994
68.97	1184.8	65.18	555.7	0.4	19.355	1995
130.44	1504.4	86.82	620.3	1.25	19.451	1996
47.19	1421.9	90.92	594.2	1.58	19.357	1997
17.01	1732.2	69.69	595.7	1.99	20.483	1998
16.16	1256.2	103.32	780.1	2.52	20.546	1999
8.02	1366.41	113.54	1806.7	2.57	20.521	2000
4.92	2024.84	114.67	1698.7	2.59	20.798	2001
8.3	2152.83	150.61	1949.11	2.63	23.608	2002
7.7	2536.1	156.65	2542.17	2.61	25.71	2003
8.46	3586.18	167.67	3777.75	2.58	26.784	2004
8.5	5945.99	178.01	4824.28	2.31	27.006	2005
7.2	7104.69	189.05	5656.56	2.17	28.457	2006
8.1	7722.4	212.22	8879.24	2.02	31.873	2007
14.3	8229.36	224.55	11781.45	2.09	33.542	2008
11.2	8528.01	266.03	7833.69	2.33	35.687	2009
13	8839.4	288.14	11404.28	2.67	37.805	2010
18.5	8127.56	299.45	9655.68	2.67	39.8	2011
35.1	8122.68	289.37	4066.5	3.3	42.047	2012
37.1	8727.9	281.19	4789.732	5.75	44.379	2013
34.5	8105.9	388.14	4350.2094	5.96	43.66	2014

المصدر : بنك السودان المركزى , وحدة الدين الخارجى .

ملحق رقم (12) النموذج اللوغروثيمى المزدوج

Dependent Variable: LOG(DEB)

Method: Least Squares
Date: 08/09/15 Time: 16:14
Sample: 1990 2014
Included observations: 25

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0253	2.408425	0.216067	0.520381	C
0.0005	4.074407	0.020175	0.082200	LOG(EX)
0.0057	3.075080	0.022041	0.067779	LOG(INF)
0.0000	12.15771	0.041011	0.498601	LOG(GDP)

3.218320	Mean dependent var	0.949716	R-squared
0.346403	S.D. dependent var	0.942533	Adjusted R-squared
-1.993324	Akaike info criterion	0.083041	S.E. of regression
-1.798303	Schwarz criterion	0.144811	Sum squared resid
132.2102	F-statistic	28.91655	Log likelihood
0.000000	Prob(F-statistic)	1.721019	Durbin-Watson stat

المصدر : إعداد الباحث من الدراسة التطبيقية بإستخدام برنامج EViews 2015م

ملحق رقم (14) مصفوفه الارتباطات

INF	EX	GDP	
-0.49997	0.787995	1	GDP
-0.59922	1	0.787995	EX
1	-0.59922	-0.49997	INF

المصدر : إعداد الباحث من الدراسة التطبيقية بإستخدام برنامج EViews 2015م

ملحق رقم (9)النموذج الخطى لدالة الدين الخارجى فى السودان

Dependent Variable: DEB

Method: Least Squares
Included observations: 25

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	8.704325	1.240260	10.79563	C
0.0149	2.677559	0.013659	0.036573	GDP
0.0125	2.758730	0.570015	1.572517	EX
0.0031	3.382094	0.000431	0.001458	IMP
0.8024	-0.253804	0.000286	-7.26E-05	EXPO
0.2777	1.117451	0.013160	0.014706	INF

26.49664	Mean dependent var	0.972196	R-squared
9.468390	S.D. dependent var	0.964879	Adjusted R-squared
4.190392	Akaike info criterion	1.774424	S.E. of regression
4.482922	Schwarz criterion	59.82302	Sum squared resid
132.8718	F-statistic	-46.37990	Log likelihood
0.000000	Prob(F-statistic)	1.155444	Durbin-Watson stat

المصدر:إعداد الباحث من الدراسة التطبيقية بإستخدام برنامج E-Views 2015م

نتائج إختبار سكون السلسلة

ملحق رقم(2) إستقرار الدين الخارجى

-3.7856	1% Critical Value*	-4.552948	ADF Test Statistic
-3.0114	5% Critical Value		
-2.6457	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(DEB,3)
Method: Least Squares
Date: 08/18/15 Time: 09:45
Sample(adjusted): 1994 2014
Included observations: 21 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0002	-4.552948	0.384352	-1.749937	D(DEB(-1),2)
0.0590	2.016083	0.251979	0.508011	D(DEB(-1),3)
0.9411	0.074950	0.267612	0.020058	C

-0.144571	Mean dependent var	0.588155	R-squared
1.797410	S.D. dependent var	0.542395	Adjusted R-squared
3.360385	Akaike info criterion	1.215885	S.E. of regression
3.509603	Schwarz criterion	26.61077	Sum squared resid
12.85291	F-statistic	-32.28404	Log likelihood
0.000341	Prob(F-statistic)	1.933740	Durbin-Watson stat

المصدر : اعداد الباحث من الدراسة التطبيقية باستخدام برنامج E-Views 2015م

ملحق رقم(3)إستقرار الناتج المحلى الإجمالى

-3.7667	1% Critical Value*	-3.266378	ADF Test Statistic
-3.0038	5% Critical Value		
-2.6417	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(GDP,2)
Method: Least Squares
Date: 08/18/15 Time: 09:52
Sample(adjusted): 1993 2014
Included observations: 22 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0041	-3.266378	0.451625	-1.475177	D(GDP(-1))
0.5094	0.672361	0.337829	0.227143	D(GDP(-1),2)
0.0126	2.756408	6.863527	18.91868	C

5.655909	Mean dependent var	0.423299	R-squared
32.81739	S.D. dependent var	0.362593	Adjusted R-squared
9.495571	Akaike info criterion	26.20067	S.E. of regression
9.644349	Schwarz criterion	13043.03	Sum squared resid
6.972994	F-statistic	-101.4513	Log likelihood
0.005358	Prob(F-statistic)	1.509592	Durbin-Watson stat

المصدر :اعداد الباحث من الدراسة التطبيقية باستخدامس برنامج E- Views 2015م

ملحق رقم(4) إستقرار سعرالصرف

-3.7497	1% Critical Value*	-3.586069	PP Test Statistic
-2.9969	5% Critical Value		
-2.6381	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

(Newey-West suggests: 2)	Lag truncation for Bartlett kernel: 2
0.268222 Residual variance with no correction	
0.256717 Residual variance with correction	

Phillips-Perron Test Equation
Dependent Variable: D(EX,2)
Method: Least Squares
Date: 08/18/15 Time: 10:02
Sample(adjusted): 1992 2014
Included observations: 23 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0017	-3.607681	0.210815	-0.760552	D(EX(-1))
0.1274	1.587178	0.124507	0.197615	C

0.009130	Mean dependent var	0.382632	R-squared
0.673950	S.D. dependent var	0.353233	Adjusted R-squared
1.695849	Akaike info criterion	0.542003	S.E. of regression
1.794588	Schwarz criterion	6.169101	Sum squared resid
13.01536	F-statistic	-17.50226	Log likelihood
0.001653	Prob(F-statistic)	1.939004	Durbin-Watson stat

المصدر :اعداد الباحث من الدراسة التطبيقية باستخدام برنامج E-Views 2015م

ملحق رقم(5) استقرار الواردات

-3.7856	1% Critical Value*	-4.601348	ADF Test Statistic
-3.0114	5% Critical Value		
-2.6457	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(IMP,3)
Method: Least Squares
Date: 08/18/15 Time: 10:15
Sample(adjusted): 1994 2014
Included observations: 21 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0002	-4.601348	0.365458	-1.681599	D(IMP(-1),2)
0.1524	1.494569	0.229766	0.343401	D(IMP(-1),3)
0.8074	-0.247346	144.9646	-35.85648	C

-88.52000	Mean dependent var	0.641149	R-squared
1048.955	S.D. dependent var	0.601277	Adjusted R-squared
15.96105	Akaike info criterion	662.3576	S.E. of regression
16.11027	Schwarz criterion	7896917.	Sum squared resid
16.08005	F-statistic	-164.5910	Log likelihood
0.000099	Prob(F-statistic)	1.924410	Durbin-Watson stat

المصدر :اعداد الباحث من الدراسة التطبيقية باستخدام برنامج E-Views 2015م

ملحق رقم (6) استقرار الصادرات

-3.7667	1% Critical Value*	-3.648685	ADF Test Statistic
-3.0038	5% Critical Value		
-2.6417	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(EXPO,2)
Method: Least Squares
Date: 08/18/15 Time: 10:21
Sample(adjusted): 1993 2014
Included observations: 22 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0017	-3.648685	0.344735	-1.257829	D(EXPO(-1))
0.6581	0.449565	0.228822	0.102870	D(EXPO(-1),2)
0.6067	0.523476	452.1335	236.6808	C
-16.01921	Mean dependent var		0.574061	R-squared
3059.144	S.D. dependent var		0.529226	Adjusted R-squared
18.26241	Akaike info criterion		2098.970	S.E. of regression
18.41118	Schwarz criterion		83707847	Sum squared resid
12.80369	F-statistic		-197.8865	Log likelihood
0.000301	Prob(F-statistic)		1.903993	Durbin-Watson stat

المصدر : إعداد الباحث من الدراسة التطبيقية بإستخدام برنامج E-Views 2015م

ملحق رقم (7) إستقرار التضخم

-3.7667	1% Critical Value*		-4.051438	ADF Test Statistic
-3.0038	5% Critical Value			
-2.6417	10% Critical Value			

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(INF,2)
Method: Least Squares
Date: 08/29/15 Time: 15:12
Sample(adjusted): 1993 2014
Included observations: 22 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0007	-4.051438	0.357881	-1.449933	D(INF(-1))
0.9954	-0.005825	0.202259	-0.001178	D(INF(-1),2)
0.3206	-1.019954	5.358348	-5.465267	C

0.167273	Mean dependent var	0.725522	R-squared
44.78343	S.D. dependent var	0.696630	Adjusted R-squared
9.374875	Akaike info criterion	24.66628	S.E. of regression
9.523653	Schwarz criterion	11560.08	Sum squared resid
25.11121	F-statistic	-100.1236	Log likelihood
0.000005	Prob(F-statistic)	1.912959	Durbin-Watson stat

المصدر : إعداد الباحث من الدراسة التطبيقية بإستخدام برنامج E-Views

ملحق رقم(8)نتائج إختبار جوهانسون للتكامل المشترك :

Date: 08/18/15 Time: 10:53
Sample: 1990 2014
Included observations: 23

Test assumption: Linear deterministic trend in the data

Series: DEB EX EXPO GDP IMP INF
Lags interval: 1 to 1

Hypothesized No. of CE(s)	1 Percent Critical Value	5 Percent Critical Value	Likelihood Ratio	Eigenvalue
None **	103.18	94.15	157.5396	0.943768
At most 1 **	76.07	68.52	91.33957	0.835293
At most 2 *	54.46	47.21	49.85708	0.664438
At most 3	35.65	29.68	24.74229	0.397560
At most 4	20.04	15.41	13.08663	0.317950
At most 5 *	6.65	3.76	4.285612	0.170001

*(**) denotes rejection of the hypothesis at 5%(1%) significance level
L.R. test indicates 3 cointegrating equation(s) at 5% significance level

Unnormalized Cointegrating Coefficients:

INF	IMP	GDP	EXPO	EX	DEB
0.007387	-0.000153	-0.019473	0.000257	0.468150	0.122918
-0.006823	0.000188	-0.002512	1.78E-05	-0.110153	-0.089255
0.020519	0.000133	0.000704	0.000198	1.127387	-0.188427
0.010301	0.000100	-0.014621	-0.000108	0.467021	0.130057
0.000632	0.000395	-0.009212	-0.000187	0.212974	0.036436
-0.006695	-6.23E-05	0.006402	1.89E-05	0.014023	-0.072436

Normalized Cointegrating Coefficients: 1 Cointegrating Equation(s)

C	INF	IMP	GDP	EXPO	EX	DEB
-14.02460	0.060101	-0.001248	-0.158420	0.002093	3.808637	1.000000
	(0.01329)	(0.00023)	(0.01435)	(0.00033)	(0.77989)	
					-563.4388	Log likelihood

المصدر:إعداد الباحث من الدراسة التطبيقيةبإستخدام برنامجE-Views 2015م

ملحق رقم (11) مصفوفة الارتباطات

INF	IMP	GDP	EXPO	EX	
-0.59921567127	0.647525847626	0.787995229342	0.401395037034	1	EX
-0.537451173013	0.882774753147	0.756543155055	1	0.401395037034	EXPO
-0.499973770309	0.922478143859	1	0.756543155055	0.787995229342	GDP
-0.499903802186	1	0.922478143859	0.882774753147	0.647525847626	IMP
1	-0.499903802186	-0.499973770309	-0.537451173013	-0.59921567127	INF

المصدر: إعداد الباحث من الدراسة التطبيقية بإستخدام برنامجE-Views

ملحق رقم (10) إختلاف التباين

0.465641	Probability	0.551302	F-statistic
0.443691	Probability	0.586718	Obs*R-squared

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 08/23/15 Time: 17:51
Sample(adjusted): 1991 2014
Included observations: 24 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0226	2.451991	0.842201	2.065068	C
0.4656	0.742497	0.221637	0.164565	RESID^2(-1)

2.424867	Mean dependent var	0.024447	R-squared
3.341478	S.D. dependent var	-0.019897	Adjusted R-squared
5.350060	Akaike info criterion	3.374557	S.E. of regression
5.448232	Schwarz criterion	250.5280	Sum squared resid
0.551302	F-statistic	-62.20073	Log likelihood
0.465641	Prob(F-statistic)	1.886722	Durbin-Watson stat

المصدر :إعداد الباحث من الدراسة التطبيقية بإستخدام برنامجE-Views 2015م

ملحق رقم (13) إختلاف التباين

ARCH Test:

0.744766	Probability	0.108684	F-statistic
0.731234	Probability	0.117982	Obs*R-squared

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 09/09/15 Time: 20:35
Sample(adjusted): 1991 2014
Included observations: 24 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0237	2.429540	0.011981	0.029108	C
0.7448	-0.329673	0.214040	-0.070563	RESID^2(-1)

0.027117	Mean dependent var	0.004916	R-squared
0.049698	S.D. dependent var	-0.040315	Adjusted R-squared
-3.046541	Akaike info criterion	0.050689	S.E. of regression
-2.948370	Schwarz criterion	0.056527	Sum squared resid
0.108684	F-statistic	38.55849	Log likelihood
0.744766	Prob(F-statistic)	1.710660	Durbin-Watson stat

المصدر : إعداد الباحث من الدراسة التطبيقية بإستخدام برنامجEVeiws 2015م