A STUDY ON CURRENT ACCOUNT DEFICIT OF INDIA

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ABSTRACT:

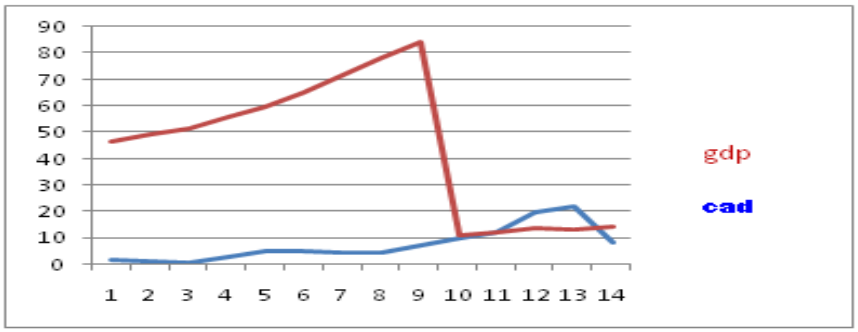
This study has been emphasized to corner the factors which were influencing the CAD to get wider in the past five years few economic variables has been considered for analysis purpose and all the variables have been averaged yearly. Augmented dickey fuller test has been applied for the stationary of the data johansen co integration test has been done. Granger causality test shows that currency fluctuations not cause for the CAD and imports and exports during the analysis period. Gold and Crude oil were playing a wider role in imports list which is causing cad more than other variables. This analysis is useful for the research scholars, economist, government institutions and bankers.

Key Words: **GDP, IIP, FDI, FII, FD, Imports, Exports, Gold and Currency**

INTRODUCTION: Indian economy is facing one of the major economic problem is current account deficit. This deficit occurs when the total imports of the country exceed exports. The reason for the India having huge current account deficit is because we are spending and borrowing more from the external (international) trade. To some extend CAD is a good indicator for the developing countries because if the Indian industries borrow more from outside the country (ECB and FCCB) to expand their business activities which leads to growth in the business and economic activities which in turn leads more revenue in future. The major contributor of India current account deficit is more imports of gold, electronic items and crude oil. Some of the effects of cad are currency depreciation, inflation and reduction of credit rating of the country affecting foreign investment.

The govt. generally takes some steps to curb CAD and bring it to sustainable levels. Some of which are: Decreasing imports and increasing imports. The consumption of gold is more in India. Indians, irrespective of economic position, are positively inclined towards gold purchase. It is largely driven by custom, sentiments, marriages, safety concerns, liquidity and tradability. Even though the government had imposed higher taxes on imports of gold; it does not have much impact due to the rising level of income of individuals. Other imports like capital goods and machinery, transport equipment and electronics are necessary for India's infrastructure growth. Indigenization has reduced dependence on imports, but in areas like telecom and mining, imports have played a crucial role in lowering input cost. It is time the government comes out with a clear and concise trade policy with a

roadmap for strengthening India's global trade. This study has been made to analyze the factors which influencing CAD to get wider based on some selected economic indicators. Hence there is a further scope for the study to the major economic contributors to cad to get wider.



From the above graph we can say that the gross domestic product has been increased from 2000-2014 though there is slight changes in current account deficit. The rising of CAD took place after the GDP had fallen.

OBJECTIVES:

1. To find the currency fluctuations impact on exports and imports of India.
2. To know the impact of gold and crude oil imports on current account deficit.
3. To measure the bivariate relation of select economic variables with cad.
4. To measure the FDI and FII flows impact on rupees v/s dollar.
5. To find the impact of cad on Indian growth rate.

SCOPE: The scope of the study is to analyze the various factors effecting current account deficit based on some select economic variables and it has been identified that crude oil and gold has wider impact on current account deficit.

EMPIRICAL STUDY:

GDP- Gross domestic product
IIP- Index of industrial production
FDI- Foreign direct investment
FII- Foreign institutional investor
FD- Fiscal deficit
Imports
Exports
Crude oil
Gold
Currency
Inflation

NEED OF THE STUDY: There are various factors which are influencing the Indian economy. One such important factor is the Current Account Deficit and thereby resulting increasing external liabilities and debts. Rising trade deficits creates additional burden on domestic currency for any nation. This study is conducted to anal size the various factors effecting current account deficit by considering some economic indicators like gdp, imports and exports, currency.

LITERATURE REVIEW

Omkar K and Shweta Pillai: In this paper it has been discussed that India is facing one of the major macroeconomic problem is current account deficit. The authors try to investigate the relationship between current account deficit and foreign direct investment in the context of India. Granger causality test of Toda – Yamamoto (T-Y) for the period of 1975-2009, the results indicates that the FDI and CAD are co-integrated in long run. There is evidence of unidirectional causality from FDI to current account. The analysis of FDI and exports and imports, which are the major contributor of current account, this paper an attempt has been made to find the impact of FDI on CAD through impulse response function.

Kavita Rani and Dr. Sanjiv Kumar: Indian has recorded the world's third largest current account deficit, which is moving nearly $ 100 billion, driven as a large part by appetite for gold imports in the world's biggest consumer of the metal that is playing a major role in driving the rupee to record low with dollar. The restrictions imposed by the RBI on gold imports gold and silver recorded decline by 12.86 % to USD 24 billion compared to USD 28 billion in the same period last year. Central government and RBI believed that these measures will help to bring down the current account deficit. RBI restriction would lead to shortage of gold in market and in domestic market artificial price rise is expected. This trend again in turn would lead to smuggling, black marketing and hoarding of gold which is fatal the country economy. To resolve the current account deficit issue, it has to concentrate the gold imports related problems and appreciate the rupee and boost the Indian economy.

David Backus, Espen Henriksen, Frederic Lambert and Chris Telmer: The US trade and current account deficits almost reaching 6 % of its GDP figures, some of the economists argued that the country is on the comfortable zone to ruin and the required adjustment may be painful. They have suggested that the things are fine: The national savings are recorded very low but the ratio's of household and consolidated net worth to GDP to remain high. In authors view, the most stroking features of the world at present are the low rates growth and investments in most of the richest countries, whose surplus account for about half of the US deficits. The end result is that the financial capital if flowing out of countries with low investment and growth into the US and other fast growing countries.

Manpreet Kaur, Surendra S. Yadav, and Vinayshil Gautam: Current Account Deficit is one of the major financial problems of India in the year 2011 to 2013. CAD touched record highs of 6.7% of gross domestic product in the third quarter of fiscal 2012-13. In this study authors are tried to investigate the relationship between the current account deficit, the Foreign Investment and the Exchange Rate of the Indian Rupee. Its variables and their movements, they can say that there is theoretically interdependence between these three variables. The current account deficit is directly affected by inverse movements of the exchange rate and the Foreign Investments. The Exchange rate followed by RBI is the rate which is determined by the market. Foreign Investments was influenced

by exchange rate, which are dependent on the monetary policies of world banks. The comparison between world and domestic economy is another factor that explains the change in the direction of moment of capital.

Niloufer Sohrabji: In the year 1991 india undertook reforms and liberalized general economy. India faced current account deficit for most of the period due to reforms. This paper had emphasized through inter-temporal solvency model Hakkio and Rush and Husted to sustainability of India's CAD position over the past one decade. In this framework, inter-temporal solvency constraint is satisfied provided cointegration between outflow and inflow of the CAD. GLS- dynamic generalized least square estimation shows a strong relation between country's inflow and out flows of CAD. This paper concludes that there is an improvement in trade patterns; Indian CAD position is sustainable.

Prof. Davinder Suri and Prof. Swaha Shome: According to the authors of this paper four risk factors may impact the Indian economic growth momentum are: DIRE refers to deficits (current and fiscal deficits), inflation, recession and exchange rates. In the recent past widening of fiscal deficit in the country is gaining alarming proportions and compounded by the widening current account deficit. This paper focused to find whether twin deficits pose serious threat to the growth of the country. In order to prove this assumption correlation has been applied on inflation, GDP, fiscal and current account deficit for the period of 1988 to 2011; the analysis depicts that twin deficit hypothesis in India exists. Both the deficits are having negative relation with GDP and positive with inflation. The government should focus on fiscal deficit measures to break the vicious cycle of the twin deficits.

Aviral kumar Tiwari: In the paper they have examined the long run relationship between oil and non-oil exports and imports, in order to see the current account deficit is in sustainable mode. To achieve this objective the authors had applied co-integration analysis to structural breaks. Interestingly this analysis had proven that there is strong evidence of a long-run relation between non oil exports and imports and no evidence in oil exports and imports. This showcase the foreign trade deficit is sustainable in the Indian context for non oil products.

Ashok Parikh and Bill Rao: This analysis depicts the effect of fiscal deficit on the current account deficit in Indian economy. In most of the countries fiscal deficit financed through monetization, causing crowding out of non govt. investment expenditure. In India FD is financed mostly through official borrowings from the various external sources, this leads to increase of interest rates payments and outgoing of external account spending. This kind of policy eventually pushes the balance of payments crises despite favorable trade account and real exchange rates. This study has been focused on three decades of data pertaining to Indian economy shows that real exchange rate and the ratio of private investment to GDP and fiscal deficits significantly contribute to the CAD.

RESEARCH METHODOLOGY

This analysis has been done based on the secondary data. Descriptive statistical tools have been applied for the collected economic variables .all the selected economic variables were averaged to yearly.

Partial Correlation: This method is to measures the degree of association between two random variables, with the effect of a set of controlling random variables removed.

$$r_{YX_1 \cdot X_2} = \frac{r_{YX_1} - r_{YX_2} r_{X_1X_2}}{\sqrt{1 - r^2_{YX_2}} \sqrt{1 - r^2_{X_1X_2}}}$$

Granger Causality Test: the statistical hypothesis test for determining whether one time series is useful in forecasting another. GCT is also reflecting the impact of one time series with other variable time series.

Weighted Least Squares: This method involves a standard approach to the approximate solution of over the determined systems. The Least square method means that the overall solution minimizes the sum of the squares of the errors made in the results of every single equation.

$$Q_w = a_{i=1 \text{ to } n}\, w_i\, (Y_i - a_0 - a_1 X_{i1} - \ldots - a_{p-1} X_{i,p-1})^2$$

Bi-variate analysis: It involves the analysis of two variables for the purpose of determining the relationship between variables. In order to see if the variables are related to each other, it is a measure to know how those two variables simultaneously change together.

T test: This test is used to compare two different set of values. T test is generally applied to normal distribution which has a small set of values. This test compares the mean of two samples. T test uses means and standard deviations of two samples to make a comparison. The formula of T test has been given below

$$t = \frac{\bar{X_1} - \bar{X_2}}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}}$$

Co-integration: This method is a statistical property of time series variables. This test signifies the data integration between two variables. Two or more time series are co integrated if they have a common stochastic drift.

Curve Fitting: the process of constructing a curve or mathematical function, that has the best fit to a series of data points possibly subject to constrains

$$\text{slope} = \frac{(y_2 - y_1)}{(x_2 - x_1)}$$

Augmented Dickey Fuller: This unit root test signifies the stationary of selected variable data. This test mean t test values along with the probability values reflect the data is proper for analysis.

$xt = \pi xt{-}1 + \varepsilon t.$

LIMITATIONS:

- 2013-14 exports data is not available.
- The variables are averaged annually.
- WPI is considered in this analysis instead of CPI.

DATA ANALYSIS:

1st Objective

Null Hypothesis: EXPORTS has a unit root				
Exogenous: Constant				
Lag Length: 2 (Automatic based on AIC, MAXLAG				
			t-Stati:	Prob.
Augmented	4.0429	1		
Test critical	1% level		-4.12	
	5% level		-3.14	
	10% level		-2.71	

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(EXPORTS)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EXPORTS(-1)	0.601715	0.148832	4.0429	0.004
D(EXPORTS(-1))	-1.302691	0.433238	-3.006871	0.017
D(EXPORTS(-2))	-0.938003	0.396428	-2.36614	0.046
C	-272.8707	375.4233	-0.726835	0.488
R-squared	0.731418	Mean dependent var	1193.075	
Adjusted R-squared	0.6307	S.D. dependent var	1053.745	
S.E. of regression	640.3617	Akaike info criterion	16.02314	
Sum squared resid	3280505	Schwarz criterion	16.18478	
Log likelihood	-92.13887	Hannan-Quinn criter.	15.9633	
F-statistic	7.262024	Durbin-Watson stat	2.188113	
Prob(F-statistic)	0.011343			

Interpretation: The above analysis augmented dickey fuller test has been applied on exports data to find stationary: the probability value has been observed one which indicates that the data is stationary and which can be useful for analysis.

Null Hypothesis: IMPORTS has a unit root			
Exogenous: Constant			
Lag Length: 2 (Automatic based on AIC, MAXLAG=3)			
		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	3.87628		1
Test critical values:	1% level	-4.12199	
	5% level	-3.14492	
	10% level	-2.71375	

Augmented Dickey-Fuller Test Equation

Interpretation-The above analysis augmented dickey fuller test has been applied on imports data to find stationary: the probability value has been observed one which indicates that the data is stationary and which can be useful for analysis.

Selected (0.05 level*) Number of Cointegrating Relations by Model					
Data Trend:	None	None	Linear	Linear	Quadratic
Test Type	No Intercept	Intercept	Interce	Intercept	Intercept
	No Trend	No Trend	No Tre	Trend	Trend
Trace	2	1	2	1	2
Max-Eig	2	1	2	1	2
*Critical values based on MacKinnon-Haug-Michelis (1999)					
Information Criteria by Rank and Model					
Data Trend:	None	None	Linear	Linear	Quadratic
Rank or	No Intercept	Intercept	Interce	Intercept	Intercept
No. of CEs	No Trend	No Trend	No Tre	Trend	Trend
	Log Likelihood by Rank (rows) and Model (columns)				
0	-203.242	-203.242	-203.1	-203.115	-195.6084
1	-188.9075	-186.44	-186.3	-182.671	-181.7778
2	-185.5447	-182.551	-182.6	-178.045	-178.0445
	Akaike Information Criteria by Rank (rows) and Model (columns)				
0	31.88338	31.88338	32.17	32.17155	31.32437
1	30.29347	30.06771	30.2	29.79550*	29.81197
2	30.39149	30.23862	30.24	29.853	29.853
	Schwarz Criteria by Rank (rows) and Model (columns)				
0	32.05721	32.05721	32.43	32.4323	31.67203
1	30.64113	30.45883	30.64	30.27353*	30.33346
2	30.91298	30.84703	30.85	30.54832	30.54832

Interpretation: Co integration test has been applied on exports and imports keeping dollar as exogenous series and the analysis shows that log likelihood second variable is found to be more than intercept trend values. Hence data is correlated and co integrated.

Pair wise Granger Causality Tests			
Null Hypothesis:	Obs	F-Statistic	Prob.
EXPORTS does not Granger Cause DOLLAR	13	0.13875	0.8725
DOLLAR does not Granger Cause EXPORTS	0.2627	0.7754	
Pairwise Granger Causality Tests			
Null Hypothesis:	Obs	F-Statistic	Prob.
IMPORTS does not Granger Cause DOLLAR	13	0.08998	0.9149
DOLLAR does not Granger Cause IMPORTS	0.95555	0.4245	

Interpretation: Granger causality test has been applied to exports, imports and dollar the test has rejected in the probability value and no variable is causing each other during the analysis period.

2nd Objective- Weighted Least Squares Analysis

Model Summary	
Multiple R	0.914
R Square	0.835
Adjusted R Square	0.67
Std. Error of the Estimate	0.222
Log-likelihood Function Value	-11

Coefficients						
	Unstandardized Coefficients	Standardized Coefficients	t	Sig.		
	B	Std. Error	Beta	Std. Error		
(Constant)	-46.578	22.376			-2.082	0.173
GOLD	4.729	1.717	2.426	0.881	2.754	0.11
Cruide	38.302	18.37	1.837	0.881	2.085	0.172

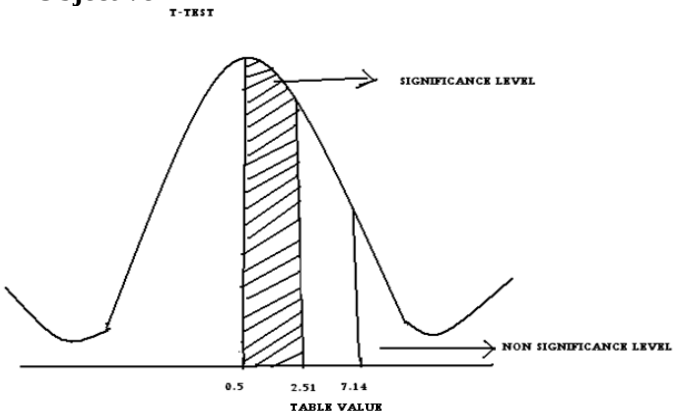
Interpretation: The above analysis weighted least square has been applied to current account deficit, gold and crude oil .the multiple R-square value is found and the calculated value are fallen in significance region.

3rd Objective

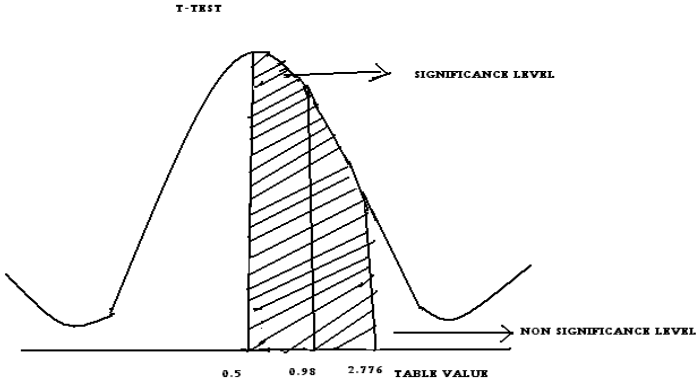
Correlations					
		GDP	Inflation	IIP	CAD
GDP	Pearson Correlation	1	-.987**	.967**	0.242
	Sig. (2-tailed)		0.002	0.007	0.695
	N	5	5	5	5
Inflation	Pearson Correlation	-.987**	1	-.976**	-0.147
	Sig. (2-tailed)	0.002		0.005	0.814
	N	5	5	5	5
IIP	Pearson Correlation	.967**	-.976**	1	-0.009
	Sig. (2-tailed)	0.007	0.005		0.988
	N	5	5	5	5
CAD	Pearson Correlation	0.242	-0.147	-0.009	1
	Sig. (2-tailed)	0.695	0.814	0.988	
	N	5	5	5	5
**. Correlation is significant at the 0.01 level (2-tailed).					

Interpretation: The above table shows that the economic indicators gross domestic product, index of industrial production and inflation having relationship with current account deficit. Bivariate correlation has been applied to measure the relationship between the variables .inflation has been found negative strong correlation with gross domestic product and index of industrial production. But with current account deficit it has shown slightly negative correlation gross domestic product has been observed slightly positive correlation with current account deficit during the analysis period.

4th Objective



Interpretation: T-test has applied to foreign direct investment and rupee v/s dollar and the test has rejected null hypothesis H0 and accepted alternative hypothesis H1 because the calculated value has fallen in non significance region. Hence foreign direct investment does not influence currency.



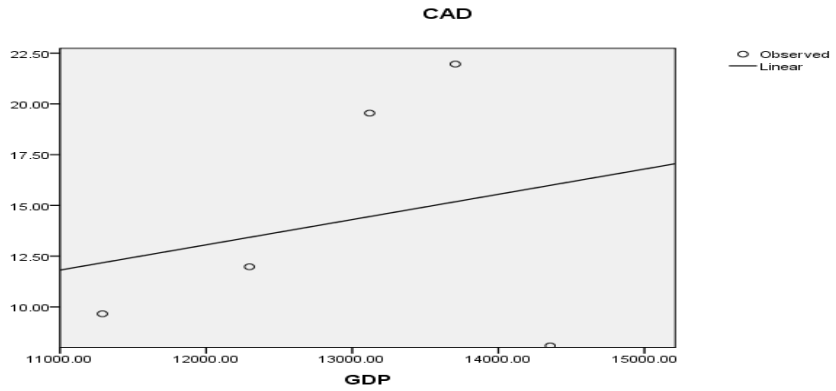
Interpretation: T-test has applied to foreign institutional investor and rupee v/s dollar and the test has accepted null hypothesis H0 and rejected alternative hypothesis Hence Foreign institutional investor influence currency.

5th Objective

Case Processing Summary	
	N
Total Cases	5
Excluded Casesa	0
Forecasted Cases	0
Newly Created Cases	0

Cases with a missing value in any variable are excluded from the analysis.

Model Summary and Parameter Estimates							
Dependent Variable:CAD							
Equation	Model Summary	Parameter Estimates					
	R Square	F	df1	df2	Sig.	Constant	b1
Linear	0.059	0.187	1	3	0.695	-1.872	0.001
The independent variable is GDP.							



Interpretation: The above picture of linear curve has been applied between current account deficit and gross domestic product the observed variables are fallen same above the linear curve below linear curve. Hence current account deficit is having a neutral effect on gross domestic product rate during the analysis period.

FINDINGS

- Inflation has a strong negative correlation with gross domestic product and iip
- Granger causality test has been rejected to exports, imports and dollar in the probability value.
- Weighted least square analysis has strongly correlated to Gold, crude oil and current account deficit.
- Foreign institutional investor and rupee/s dollar are found to be slightly correlated.
- Dickey fuller test has been applied on exports and the probability value has been observed.
- Gross domestic product has been observed slightly positive correlated with current account deficit

CONCLUSION: In study on current account deficit has been concluded with few observations the analysis has been emphasized during 2009-14. The exports and imports were found to be negatively correlated augmented dickey fuller test has been applied to find the stationary. Co integration analysis has proven that the exports and the imports were co integrated but granger causality test has rejected that they were not causing due to currency fluctuations. Gold and crude oil found to be influencing more on current account deficit during the analysis period. Hence there is a further scope for the research to find the major economic variables which were causing current account deficit to get wider and deeper.

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