e-ISSN : 2347 - 9671, p- ISSN : 2349 - 0187

EPRA International Journal of Economic and Business Review | Vol - 3, Issue- 12, December 2015

Inno Space (SJIF) Impact Factor : 4.618(Morocco) ISI Impact Factor : 1.259 (Dubai, UAE)

CURRENT ACCOUNT DEFICIT: EMPIRICAL ANALYSES OF TWO APPROACHES

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ABSTRACT

Generally increases in Current Account Deficit tends to be related with an increase in domestic output growth and also by public spending. On the other hand higher interest rates tend to reduce the Current Account Deficit. However the economic theory identifies the determinants of Current Account Deficit with the help of two main approaches. The elasticity approach and the absorption approach. The Elasticity approach lay emphasis on the exchange rate and both the quantity and prices of imports and exports. The absorption approach focuses on consumption expenditure, government expenditure and investment. The objective of this paper is to find out the relevance of both the approaches empirically. The paper covers the period of 1970-2012 taking the ratio of current account deficit to gross domestic product as the dependent variable. Based on the theory we have taken three key independent variables: Central Government expenditure, Household consumption and Terms of Trade. In order to incorporate socio economic indicator we have also controlled for dependency ratio. Running the regression model we find that all the variables are significant in determining the current account deficit. Further in order to get robust results we checked for stationary problem, hetroscedasticity and correlation problem. After correcting any of the problems if found in data we can still conclude that all the indicators are significant and have a profound effect on the independent variable. Thus, the data supports both the approaches and highlights that the assertion of both the economic theories is substantial.

KEYWORDS: *Current Account, Globalization, Finance, Investment, Income Growth, Asian Crisis.*

INTRODUCTION

Current account of developing nations has shown a clear trend of large imbalances in the recent past. By 2007 current account deficits of many countries was twice as large as in 1988. India's current account deficit has also widened to 4.9% of GDP in the first quarter of 2013 as compared to 4% of last year during the same period, though it has fallen to 1.2 percent of GDP in June 2015. Current account deficit basically shows that the country's total imports of goods, services and transfers is greater than the country's total export of goods, services and transfers. This situation makes a country a net debtor to the rest of the world. India has adopted liberalization and globalization policies which have resulted in wider current account deficit. This could be due to increased international trade and capital mobility which has facilitated the financing of larger and more persistent current account deficits. But the large deficit raises the question of their sustainability and the determinants of the deficit.

As given in the two theoretical approaches Current Account Balance we identify three crucial

determinants of current account deficit. The main objective of this paper is to examine the validity of the theories in the case of India. The paper is divided as follows. Section 1 gives the literary review of the research papers in the area of current account deficit. Section 2 throws light on the data sources and methodology that we have adopted to check weather our variables are significant or not. Then section 3 shows the results of our hypothesis testing. And finally, section 4 concludes our observation.

LITERATURE REVIEW

If current account deficit is temporary then it simply reflects the reallocation of capital to countries where capital is more productive, persistent deficits may be regarded as more serious. ***Mann (2002)*** considers that sustainability should be viewed both from the domestic and international finance point of view. ***Freund and Warnock, (2007)*** showed that Larger deficits take longer to adjust and are associated with significantly slower income growth during the current account recovery. Consumption-driven current account deficits involve significantly larger depreciations than deficits financing investment. A current account deficit reflects negative savings by domestic residents. The fact that deficit is occurring reflects a willingness by foreigners to finance that excess absorption by accumulating future claims on the earnings of domestic residents. As a consequence, net foreign liabilities also grow. In the paper by ***Clarida (2007)***, he suggests that these imbalances will ultimately decline although there is no consensus on the manner, whether smoothly or abruptly, in which it would occur.

Leandro Medina, Jordi Prat, and Alun Thomas in their paper calculated equilibrium current account balance for 33 emerging economies and found the fundamental determinants of the current account. They estimated a relationship between the current account balance and its fundamental determinants based on historical data and showed that fiscal balance has considerably stronger impact on current account balance of emerging economies. Their results supported the notion that the Asian crisis caused a permanent shift in the savings behavior of the affected countries, and that these countries tend to save more than the rest of the world.

Another paper by ***César Calderón, Alberto Chong and Norman Loayza (1999)*** focused on developing economies by drawing on a panel data set consisting of 44 developing countries and annual information for the period 1966-95. They concluded that current account deficits are moderately persistent, a rise in domestic output growth generates a larger current account deficit; temporary shocks that increase the Terms of Trade or appreciate the real exchange rate are linked with higher current account deficits, but their permanent changes do not have significant effects.

There are basically three approaches to Current Account Deficit.

- INTERTEMPORAL APPROACH
- ELASTICITIES APPROCH
- ABSORBTION APPROACH

Intertemporal approach was developed in 1980s by M. Obstfeld and K. Rogoff. According to their view, the current account balance is the outcome of dynamic saving and investment decisions which will be taken after considering the future consequences as well. This theory works more substantially at micro level and it also assumes perfectly flexible domestic services. This implies that the theory ignored the short term price rigidities in both the product and factor markets.

The Elasticity approach lay emphasis on the exchange rate and both the quantity and prices of imports and exports. This is associated with the Marshall-Lerner condition. In a nutshell the elasticity approach states that if a country's currency depreciates then its trade balance worsens initially but improves in the long run. This leads to J-Curve effect on the balance of payments.

Finally the absorption approach simply says that when absorption in an economy is more than the national output then it runs into current account deficit where absorption is given by consumption expenditure, government expenditure and investment. Thus, the question arise weather these theories work in isolation or the different factors included in the theories affect current account balance simultaneously.

DATA AND METHODOLOGY

This paper tries to analyze the effect of both the theories on current account. We are interested in finding out which theory is more substantial empirically. In order to test our hypothesis we work with the following variables for the period 1970-2012.

1. Growth rate of gross domestic product at factor cost- There is no unambiguous consensus on the relationship between GDP and Current Account Deficit. However, we speculate in India that current account deficit will be widened with an increase in gross domestic product.
2. Central Government expenditure- According to the absorption approach there is high probability that when government expenditure increases the current account deficit also widens. But in our model it was useful to take the change in government expenditure as a determinant so

we have considered the first difference of government expenditure.

3. Household consumption- consumption is again a part of absorption so it does have an adverse affect on current account balance. However in order to normalize our data we have taken household consumption as a percentage of GDP.
4. Terms of Trade- The elasticity approach laid emphasis on exchange rate and price of imports and exports so in order to incorporate that aspect in our analysis we have taken terms of trade as an independent variable.
5. Dependency ratio- This gives the proportion of non-working population to working population. If the dependency ratio is more there is high probability that a nation will resort to more of deficit. Though this variable is not a part of any theory but we suppose that it is an important variable and should be controlled before reaching at any conclusion.

Firstly we run a simple regression in STATA taking ratio of current account deficit to GDP as our independent variable and growth rate of GDP, central government expenditure, household consumption, terms of trade and dependency ratio as independent variables and see the significance of the determinants. Then we predict the estimated current account deficit based on our regression and also find out the error term. Then we check the stationarity of our error term by using Dicky fuller test. If that is stationary then we would like to see that there is no serial correlation among the variables. To check serial correlation we use Durbin Watson test and if there is problem of correlation then we can correct it by using Prais-Winston transformation. Finally we check heteroscedasticity by using hettest.

RESULTS

After running the regression with the independent variables stated above we get the following result.

CADGDP	Coefficient	t-value	Standard
Gdpfc	.0465045	1.79**	.0260421
Depart	-.160488	-2.36***	.0679037
Hconsp	.2753877	3.51***	.0760066
Tot	-.0213035	-3.26***	.006537
Dgov	.0000126	2.13***	.059067
constant	-5.388708	-1.17	4.59970

*Note: *** represents significance at 1% level and ** represents significance at 5% level of confidence.*

Here dependent variable CADGDP is the ratio of current account deficit to GDP and among independent variables Gdpfc stands for growth rate of GDP at factor cost, Depart stands for dependency ratio, Hconsp stands for household consumption as a percentage of GDP, Tot is for Terms of Trade, and Dgov is for first difference of central government expenditure.

As the p value is less than 0.1 and absolute t value is above 2 for all the variables we can say that all our determinant variables are significant at 1% level of confidence and shows that there is a fundamental relationship between the current account balance to GDP ratio and the independent variables. Except the growth rate of GDP but that is again significant at 5% level of confidence. The R squared comes to be 0.5591 that mean 56% of the variation is explained by the independent variables. Growth rate of GDP, household consumption and government expenditure has positive coefficients which are in line with absorption approach. On the other hand term of trade has negative effect on current account deficit. Similarly as the dependent population in our country increases our current account deficit widens.

When we check the stationariy of our error term with Dicky fuller test we get the following result;

	Test statistic	1% critical value	5% critical value	10% critical value
Z(t)	-5.357	-3.675	-2.969	-2.617

MacKinnon approximate p-value for
Z(t) = 0.0000

The above Z test value is greater than 1% critical value in absolute terms which shows that our error term is stationary which makes our model robust.

Next to check autocorrelation we use Durbin Watson test in the error terms. If they are correlated then the regression underestimates the standard error. In this case the predicted value may be seen significant but they may not be.

In our model d-statistic (6, 37) =1.838406

The dwstat value should ideally lie between 1.6 and 2.4 and our value is 1.838406 which is significant to show that there is no problem of correlation so we don't use any transformation.

Finally to check heteroscedasticity we do hettest which shows the following result;

chi2(1) = 3.70
Prob > chi2 = 0.0545

In hetroscedasticity we reject the null hypothesis that the error term is homogeneous if the p value is very low but in our case the test shows that we can accept the null hypothesis and infer that there is no problem of heteroscedasticity.

CONCLUSION

In this paper we tried to empirically test the significance of two approaches of current account balance for the period 1970-2012. We tried to reconcile the basic theories approaches and formulate a hypothesis that can be tested in a time series data. On the basis of our regression model we can conclude that current account balance has fundamental relationship with Terms of Trade, dependency ratio change in government expenditure, household consumption and growth of Gross Domestic Product. The residual term comes to be stationary and problem of correlation as well as heteroscedasticity are not have been found so we can confidently accept our null hypothesis. This shows that both the theories affect the current account simultaneously and both are significant empirically

However it needs to be kept in mind that these are not the only variables which determine current account balance, there can be other variables also which can prove to be significant like it is asserted that current account deficit is persistent i.e. lag of Current Account Deficit can also be a determinant but it was not occurring in our model (may be due to less number of observations). We have taken the variables according to our understanding and best knowledge of the theories underlying current account balance and have found them to be relevant.

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