Research Article

Indo-US Bilateral FDI and Current Account Balance: Developing Causal Relationship

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Abstract

Foreign Direct Investment and Current Account Balance are the two important macroeconomic variables considered in overall Balance of Payments (BOP). India and United States have progressed by investing in each other resources and has a significant share in their respective total FDI Inflows. FDI Inflows as per the BPM6 of IMF falls in the Capital Account of Balance of Payments (BOP). The balance of Current Account is related to Capital Account as Capital Account shows the mode of financing. It is through the Capital Account that the deficit of Current Account is financed. FDI is a long term source of financing for the country. The present study aims to develop a causal relationship between Indo-US FDI and Current Account Balance with the help of Granger Causality (Sims, 1980). The Toda and Yamamoto (1995) approach to Causality is followed in the study. The time period for the study is from 2001 to 2014. The study contains seven sections.

Keywords: *Indo-US, FDI, Current Account Balance, Granger Causality*

1. Introduction

India and United States are from two different groups of countries as per UNCTAD. While US is a developed economy, India is considered a developing or emerging economy. It is not surprising in the present world of dependency that there is a strong bilateral economic relationship between India and United States (US). India received FDI Inflows from United States and US also receives FDI Inflows from India. Both countries have a strong economic bonding. However, the quantum of FDI Inflows differs due to the different economic status of both countries. Similarly, the Balance of Payments position of both the countries is different which includes Current Account Balance as well as Capital Account Balance. The difference is both theoretical and empirical. India has not yet divided the Capital Account into Capital and Financial Account while US has followed the division. Apart from this there are also few fundamental differences between the calculations of the two Current Account balances. The reason being that US strictly follows the BPM6 manual of IMF but India has not yet implemented the same. In the present study, attempt is made to develop a causal relationship between Indo-US FDI and their respective Current Account Balances. The study is divided into 7 sections. After introducing to the study in Section 1, Section 2 deals with existing body of literature titled “Review of Literature”. Section 3 captures the Conceptual Framework followed by Econometric Models in Section 4. The data is described in Section 5 and the results of the analysis are presented in Section 6. The study concludes in Section 7.

2. Review of Literature

Relatively less work has been conducted on Indo-US FDI along with Current Account Balance (CAB). Though researchers have attempted to relate FDI and Current Account Balance for the same country but Bilateral FDI has been ignored. One reason may be due to the absence of appropriate theoretical foundations related to Bilateral FDI and components of Balance of Payments. Bilateral Indo-US FDI is basically the Outward FDI from US to India and India's Outward FDI to US. In other words, it is FDI Inflows of India from US and US FDI Inflows from India.

Current Account Imbalances have gradually increased in developed as well as developing countries over the last few decades. The US Current Account Deficit dominates the world and the news of the world (Blanchard, Giavazzi, & Sa, 2005). Econometric analysis of US FDI shows that market size (Capital) and factor costs (Labour) are important determiners of investment decision. The timing of investment is affected by expectation of short run fluctuations in the dollar as demonstrated by instrumental variable estimation (Barrell & Pain, 1996). Higgins and Klitgaard (2007) have conducted a study on US Current Account Deficit and why US has been successful in carrying it. They concluded that due to the substantial size of Foreign Investment in United States, US has been able to sustain its Current Account Deficit. Partly this is also due to the rapid financial globalization. However, in case the rate at which US inventory purchase Foreign Assets decreases it may become difficult for US to sustain Current Account Deficit. India altogether plays on a different level. Its dynamics is of a transition economy. There has been quite number of studies on Foreign Direct Investment and Current Account of India's Balance of Payments. Nag & Mukherjee (2012) identified that FDI Inflows in India has a significant impact on import intensity and thus has a significant impact on Balance of Payments of India. It was found that Current Account and FDI are cointegrated (Siddiqui & Ahmad, 2007). For India, a unidirectional causality was found from FDI to Current Account and both were found cointegrated in the long run for India (Kaur, Yadav & Gautam, 2012). According to Hossain (2007), the net effect of FDI is positive on Current Account of Balance of Payments.

3. Trends in Indo-US Bilateral FDI and Current Account Balance

Before approaching the econometrics modelling and analysis it is imperative to pay attention to the pattern in the trends of Current Account Balance (CAB) of both economies as well as their respective bilateral FDI. As Current Account Balance is an important component of Balance of Payments it is to be remembered that its value is shown according to the Balance of Payments Manual 6 of International Monetary Fund. All the items that are included in Current Account Balance are uniform for both the economies as both have accepted BPM 6 Manual (though India has taken liberty on few counts). United States being developed economy as per UNCTAD, it has been able to sustain its growth with the help of widening Current Account Deficit. It turns out that CAD can be easily represented as a negative Current Account Balance. In order to make the variables used in the study nominal it is better to use Current Account Balance rather than Current Account Deficit. Though there will be no difference in case CAD is selected to use as a term as in the total sample period for the study the CAB remains negative. Still it is advised to use CAB so that at times of surplus no problem for identification arises. Chart 1 shows the trends in the Indo-US Current Account Balance for the period from 2000 to 2014.

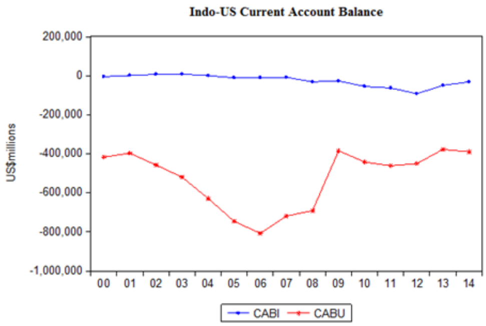

Chart 1:
Source: Prepared by the researcher

In the Chart 1, the variable CABI denoted Current Account Balance of India and CABU denotes Current Account Balance of United States. It is crystal clear that US has much widened negative CAB while India has a very less negative CAB. The mean value of CABI is -24027.67 US$ millions while for CABU it is -525447.3 US$ millions. The difference between the mean values can be related to the size and growth of the respective economies. While US is fully industrialized, India has still not reached to that pinnacle. The maximum value for the series CABI is 8772.510 US$ millions. Surprisingly, India has had a surplus or in other words positive CAB. On the other hand the maximum value of CABU is -376763 US$ millions which is negative CAB or in simple words a current account deficit. It is just not appropriate to compare the absolute Current Account Balance of US and India when there are quite large differences between the two. A possible and better way can be to see CAB as a percentage of the respective economy's GDP. This will act as a relative measure for both. Chart 2 presents the same.

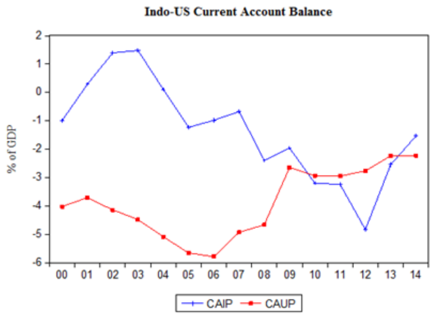

Chart 2:
Source: Prepared by the researcher

According to the readings of Chart 2, from 2001 to 2005, the value of Current Account Balance of India and US as percentage of their respective GDP has declined. However, after 2005 there has been a recovery for US (while India's percentage still declines). In the last years of the sample period India has recovered a lot on the Current Account Deficit. But the interesting point is that CAB as percentage of GDP has been positive for India in the beginning years but that has not been the case with US for any time during the sample period of the study. Chart 3 presents the trends of the Bilateral Indo-US Foreign Direct Investments.

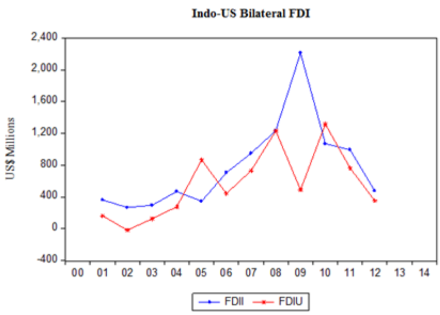

Chart 3:
Source: Prepared by the researcher

The variables FDII and FDIU in Chart 3 denotes that FDI for India from US and FDI for US from India, respectively. It is clear that from 2001 to 2009, FDI in India from US has increased but after that it has shown a trend of decrease. With respect to FDIU, it shows a mixed trend of rise and fall. From 2001 to 2005 it has increased and then fell for 2006 followed by an increase till 2008. From 2009 it again fell and revived in 2010 to eventually decline in 2012. The mean value of FDII is 782.5858 US$ millions while for FDIU it is 562.0833 US$ millions. The mean value shows that United States has invested on an average more in India than India has invested in United States. The maximum value for FDII has been 2212 US$ millions and for FDIU 1317 US$ millions. A comparison of the skewness value of FDII and FDIU shows that FDIU is more symmetrical in comparison to FDII. The reason being the value of FDII is 1.39 while that of FDIU is 0.48 that is less farther from the symmetrical measure of 0.

4. Conceptual Framework

This section expounds the premise developed for developing the causal relationship between Bilateral Indo-US FDI and Current Account Balance. The first relationship is between the FDI in India from US and Current Account Balance of India's Balance of Payments. The second relationship is between the FDI in US from India and Current Account Balance of US Balance of Payments. The theoretical foundations are crystal clear that FDI Inflows are part of Financial Account under Capital Account of Balance of Payments. The theoretical foundations states that a deficit in the Current Account of Balance of Payments is financed through the financial account of Balance of Payments. Thus, FDI Inflows in the short run is a source of finance but its real costs appear in the long run with transfer income to home country.

For developing a causal relationship the concept of causality is integral to the study. Causality stands in opposition to Spurious Correlation. In the words of Raghuram Rajan "Correlation is a superstition while causality is a science". Developing a causal relationship requires exploring the common sense theoretical considerations related to the variables. The variables of the study are described in Annexure I. A little knowledge about Balance of Payments statement supports the notion that FDI Inflows and Current Account Balance are related. FDI Inflows finance the Current Account Deficit. For the term Bilateral FDI, it is argued that it represents the Inflows from the partner country. Thus, FDIU is FDI Inflows from India to US and FDII is FDI Inflows in India from US and both affect the Current Account Balance of respective economies.

5. Econometric Models and Estimation Methods

For developing a causal relationship, Granger causality is used but with a non-conventional approach. Toda and Yamamoto (1995) has captured the method to measure causality with data in levels. The only thing required is to find out the order of integration of the two or more series. A simple X Granger cause Y if Y can be better predicted using the histories of both X and Y than it can by using the history of Y alone. In order to test the null hypothesis of x_t not Granger causing y_t the following unrestricted model specification is used:

Unrestricted: $y_t = \alpha + \sum_{i=1}^{P} \alpha_i y_{t-i} + \sum_{i=1}^{P} \delta_i x_{t-i} + \varepsilon_t$

The model used is unrestricted because no condition whatsoever is imposed for lag control on the equations generated for Vector Autoregression Model. For the analysis the equations and hypothesis framed are as follows:

Set 1: FDIU and CABU

$FDIU_t = a_0 + a_1 FDIU_{t-1} + .. + a_p FDIU_{t-p} + b_1 CABU_{t-1} + .. + b_p CABU_{t-p} + \mu_t$...... (1.1)

$CABU_t = c_0 + c_1 CABU_{t-1} + .. + c_p CABU_{t-p} + d_1 FDIU_{t-1} + .. + d_p FDIU_{t-p} + v_t$....... (1.2)

The hypotheses for equation 1.1 are as follows:

H_{01}: Current Account Balance of US does not Granger cause FDI Inflows from India in US

H_{A1}: Current Account Balance of US Granger cause FDI Inflows from India in US

The hypotheses for equation 1.2 are as follows:

H_{02}: FDI Inflows from India in US does not Granger cause Current Account Balance of US

H_{A2}: FDI Inflows from India in US Granger cause Current Account Balance of US

In both the cases the rejection of null hypothesis denotes presence of Granger causality with a particular direction.

Set 2: FDII and CABI

$FDII_t = a_0 + a_1 FDII_{t-1} + .. + a_p FDII_{t-p} + b_1 CABI_{t-1} + .. + b_p CABI_{t-p} + \mu_t$........ (1.3)

$CABI_t = c_0 + c_1 CABI_{t-1} + .. + c_p CABI_{t-p} + d_1 FDII_{t-1} + .. + d_p FDII_{t-p} + v_t$......... (1.4)

The hypotheses for equation 1.3 are as follows:

H_{03}: Current Account Balance of India does not Granger cause FDI Inflows from US in India

H_{A3}: Current Account Balance of India Granger cause FDI Inflows from US in India

The hypotheses for equation 1.4 are as follows:

H_{04}: FDI Inflows from US in India does not Granger cause Current Account Balance of India

H_{A4}: FDI Inflows from US in India Granger cause Current Account Balance of India

The first step in the procedure is to find out the order of integration of the series FDII, CAB and KAB by using both Augmented Dicky Fuller unit root test (Dicky & Fuller, 1981) and Kwiatowski Phillips Schmidt Shin unit root test (Kwiatowski, Phillips, Schmidt & Shin, 1992). The various models and hypothesis for ADF test are as follows:

Model A: Check for Stationarity (Neither intercept nor trend)

$\Delta y_t = \gamma y_{t-1} + \sum P_i \Delta y_{t-i} + \epsilon_t$

Model B: Check for Level Stationarity (Only Intercept in the equation)

$\Delta y_t = \mu + \gamma y_{t-1} + \sum P_i \Delta y_{t-i} + \epsilon_t$

Model C: Check for Trend Stationarity (Intercept and Trend in the equation)

$\Delta y_t = \mu + \beta t + \gamma y_{t-1} + \sum P_i \Delta y_{t-i} + \epsilon_t$

Where in all cases H_0: $\gamma = 0$ of a unit root time series

H_A: $\gamma < 0$ of a stationary time series

As there are differences in asymptotic distribution of the different unit roots, for a cross check, KPSS test would also be used. Remember, that while the null hypothesis of ADF is non stationarity, the null hypothesis of KPSS is stationarity. In KPSS only two models are available:

Model A: Check for Level Stationarity (Only Intercept)

$y_t = a_0 + \varepsilon_t$

Model B: Check for Trend Stationarity (Intercept and Trend in the equation)

$y_t = a_0 + \beta t + e_i$

Where in all cases H_0: $\sigma_\mu^2 = 0$ of a stationary time series

H_A: $\sigma_\mu^2 \neq 0$ of a unit root/non stationary series

Additionally Phillip Perron Test (1988) and Dicky Fuller- Generalized Least Squares Test will also be used in case both ADF and KPSS fail to conclude the order of Integration.

6. The Data

The data for the study is collected from UNCTAD Statistics Database. The data for FDI is taken from the section Bilateral FDI instead of FDI Inflows or Outflows by selecting partner country. The reason is that there were differences in the values and thus it was necessary to use data which is conceptually closer to the objective of the study. In this regard, Bilateral FDI Statistics for India and US was taken. The data for FDI is expressed in US$ millions. On the other hand, the data for Current Account is taken in absolute as well as expressed in terms of percentage of GDP. The data for Current Account was available from 2001 to 2012. Thus, sample period selected is 2001 to 2014 and values for FDI for 2013 and 2014 are forecasted on the basis of Autoregressive Model. The AR Model for FDII and FDIU is selected with lag 1 to forecast the values for 2013 and 2014 with a dynamic model. The complete dataset is presented in Annexure II.

7. Results

7.1 Causal Relationship between FDIU and CABU

Going with the Toda and Yamamoto (1995) Approach to causality, it is initially important to identify the order of Integration. This was done with the help of ADF and KPSS and additionally with PP Test. Table 1 and Table 2 presents the output of ADF and KPSS for both FDIU and CABU.

Table 1. Unit Root Tests output for FDIU

Test with order	Test statistic	Critical values	Prob.
ADF at level	-2.5714	-3.1199	0.1230
ADF at 1st order differencing	-5.8592	-3.1449	0.0007*
KPSS at level	0.2961	0.4630	Nil
PP Test at level	-2.5714	-3.1199	0.1230
PP Test at 1st order differencing	-6.2311	-3.1449	0.0004*

*indicate significant values and rejection of null hypothesis

Source: Generated by researcher using eviews9

Table 2. Unit Root Tests output for CABU

Test with order	Test statistic	Critical values	Prob.
ADF at level	-1.250307	-3.098896	0.6207
ADF at 1st order differencing	-2.942373	-3.119910	0.0673
ADF at 2nd order differencing	-5.727002	-3.144920	0.0008*

KPSS at level	0.200879	0.463000	Nil
PP Test at level	-1.480999	-3.098896	0.5132
PP Test at 1st order differencing	-2.939172	-3.119910	0.0677
PP Test at 2nd order differencing	-6.457009	-3.144920	0.0003*

*indicate significant values and rejection of null hypothesis

Source: Generated by researcher using views

With the help of Table 1 and 2, it is crystal clear that the order of Integration of FDIU is 1 supported by ADF and PP Test and for CABU it is 2 supported by ADF and PP Test output. The maximum order of integration that is m is then equal to 2. Maximum order of Integration (m) is integral to the Toda and Yamamoto Approach to Causality and thus it cannot be ignored. In the next step, the Vector Auto regression Model with lags 1,1 is estimated but it is found unstable as per AR roots graph and also Lag Order Selection criteria does not accepts maximum lag of VAR to be 1. Thus, a new VAR model with lags 1,2 is estimated and it is found stable. Table 3 shows the VAR lag order criteria for VAR(1,2).

Table 3. VAR Lag Order Selection Criteria

Endogenous variables: CABU FDIU						
Exogenous variables: C						
Lag	LogL	LR	FPE	AIC	SC	HQ
0	-247.2065	NA	3.75e+15	41.53442	41.61524	41.50450
1	-240.5450	9.992219	2.45e+15	41.09084	41.33329	41.00107
2	-232.2508	9.676658*	1.31e+15*	40.37513*	40.77921*	40.22552*
* indicates lag order selected by the criterion						
LR: sequential modified LR test statistic (each test at 5% level)						
FPE: Final prediction error						
AIC: Akaike information criterion						
SC: Schwarz information criterion						
HQ: Hannan-Quinn information criterion						

Source: Generated by researcher using eviews9

Table 3 clearly highlights that Lag Order Criteria suggests that lag 2 is the appropriate lag for VAR as supported by all the information criteria. Further there is a need to check other stability conditions such as Autocorrelation and AR Roots graph. Both the items are shown in Table 4 and Chart 4.

Table 4. VAR Residual Serial Correlation LM Tests

Null Hypothesis: no serial correlation at lag order h		
Lags	LM-Stat	Prob
1	4.200155	0.3796
2	5.589576	0.2320
3	11.37093	0.0227
4	8.356473	0.0794
5	2.812985	0.5896
6	5.579759	0.2328
Probs from chi-square with 4 df.		

Source: Generated by researcher using eviews9

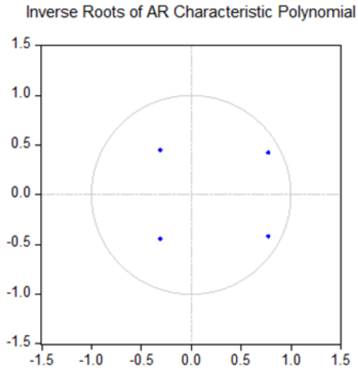

Chart 4:
Source: Generated by researcher using eviews9

With respect to Table 4, as all the probability values are more than 0.05 except at lag 3, the null hypothesis of "no serial correlation" cannot be rejected and therefore what is concluded is that overall the model developed is free from autocorrelation. Additionally, the AR roots graphs also show that the model is stable as all the points are within the unit root circle. All four unit points of VAR (1,2) are within the circle and thus the model is stable. Once the model is approved on the basis of the stability conditions, the next step is to re-estimate the model by adding the extra lags as exogenous variables. Remember that as the order of integration of both series was not same there is no need to identify Cointegration between the series. The additional lags for exogenous variables comes out to be 4 (i.e. p + m = 2+2 = 4) and therefore this adjustment makes sure that data is analyzed while being in levels so that it may not lose its internal dynamics. The outcome of the Granger Causality is shown in Table 5.

Table 5. VAR Granger Causality/Block Exogeneity Wald Tests

Dependent variable: CABU			
Excluded	Chi-sq	df	Prob.
FDIU	1.628420	2	0.4430
All	1.628420	2	0.4430
Dependent variable: FDIU			
Excluded	Chi-sq	df	Prob.
CABU	1.342933	2	0.5110
All	1.342933	2	0.5110

Source: Generated by researcher using eviews9

The output shows that both the null hypothesis H_{01} and H_{02} are accepted as the probability value more than 0.05. It means that there is no causality between the two series in the sample period of the study. Further, it indicates that any usage of correlation between the two series for inference will be misleading as there is no statistical causality for the sample period.

7.2 Causal Relationship between FDII and CABI

Going with the Toda and Yamamoto (1995) Approach to causality, it is initially important to identify the order of Integration. This was done with the help of ADF and KPSS and additionally with PP Test. Table 6 and Table 7 presents the output of ADF and KPSS for both FDIU and CABU.

Table 6. Unit Root Tests output for FDII

Test with order	Test statistic	Critical values	Prob.
ADF at level	-1.8619	-3.1199	0.3376
ADF at 1st order differencing	-4.1553	-3.1449	0.0095*
KPSS at level	0.2512	0.4630	Nil
PP Test at level	-1.8267	-3.1199	0.3525
PP Test at 1st order differencing	-4.1553	-3.1449	0.0095*

*indicate significant values and rejection of null hypothesis

Source: Generated by researcher using eviews9

Table 7. Unit Root Tests output for CABI

Test with order	Test statistic	Critical values	Prob.
ADF at level	-1.219865	-3.098896	0.6341
ADF at 1st order differencing	-3.407834	-3.119910	0.0307*
KPSS at level	0.455342	0.463000	Nil
PP Test at level	-1.231931	-3.098896	0.6288
PP Test at 1st order differencing	-3.407834	-3.119910	0.0307*

*indicate significant values and rejection of null hypothesis

Source: Generated by researcher using eviews9

With the help of Table 6 and 7, it is crystal clear that the order of Integration of FDIU is 1 supported by ADF and PP Test and for CABU it is 1 supported by ADF and PP Test output. The maximum order of integration that is m is then equal to 1. Maximum order of Integration (m) is integral to the Toda and Yamamoto Approach to Causality and thus it cannot be ignored. In the next step, the Vector Auto regression Model with lags 1,1 is estimated and it is found stable. Table 8 shows the VAR lag order criteria for VAR(1,1).

Table 8. VAR Lag Order Selection Criteria

Endogenous variables: CABI FDII						
Exogenous variables: C						
Lag	LogL	LR	FPE	AIC	SC	HQ
0	-231.3741	NA	2.68e+14	38.89568	38.97650	38.86576
1	-219.0843	18.43472*	6.86e+13*	37.51405*	37.75650*	37.42428*
2	-217.4201	1.941528	1.10e+14	37.90335	38.30744	37.75375
* indicates lag order selected by the criterion						
LR: sequential modified LR test statistic (each test at 5% level) FPE: Final prediction error AIC: Akaike information criterion SC: Schwarz information criterion HQ: Hannan-Quinn information criterion						

Source: Generated by researcher using eviews9

Table 8 clearly highlights that Lag Order Criteria suggests that lag 1 is the appropriate lag for VAR as supported by all the information criteria. Further there is a need to check other stability conditions such as Autocorrelation and AR Roots graph. Both the items are shown in Table 9 and Chart 5.

Table 9. VAR Residual Serial Correlation LM Tests

Null Hypothesis: no serial correlation at lag order h		
Lags	LM-Stat	Prob
1	2.390695	0.6643
2	5.313690	0.2566
3	6.584625	0.1595
4	6.141394	0.1888
5	3.458749	0.4842
6	4.283714	0.3690
Probs from chi-square with 4 df.		

Source: Generated by researcher using eviews9

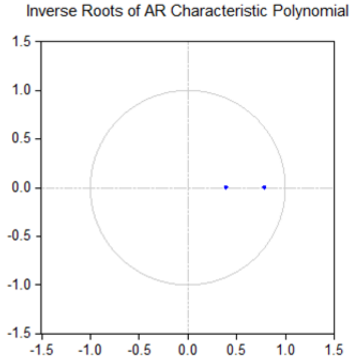

Chart 5:
Source: Generated by researcher using eviews9

With respect to Table 9, as all the probability values are more than 0.05 the null hypothesis of "no serial correlation" cannot be rejected and therefore what is concluded is that overall the model developed is free from autocorrelation. Additionally, the AR roots graphs also shows that the model is stable as all the points are within the unit root circle. Both the unit points of VAR (1,1) are within the circle and thus the model is stable. Once the model is approved on the basis of all stability conditions, the next step is to re-estimate the model by adding the extra lags as exogenous variables. The additional lags for exogenous variables comes out to be 2 (i.e. p + m = 1+1 = 2) and therefore this adjustment makes sure that data is analyzed while being in levels so that it may not lose its internal dynamics. The outcome of the Granger Causality is shown in Table 10.

Table 10. VAR Granger Causality/Block Exogeneity Wald Tests

Dependent variable: CABI			
Excluded	Chi-sq	df	Prob.
FDII	1.581160	1	0.2086
All	1.581160	1	0.2086
Dependent variable: FDII			
Excluded	Chi-sq	df	Prob.
CABI	0.778983	1	0.3775
All	0.778983	1	0.3775

Source: Generated by researcher using eviews9

The output shows that both the null hypothesis H_{03} and H_{04} are accepted as the probability value is more than 0.05. It means that there is no causality between the two series in the sample period of the study. Further, it indicates that any usage of correlation between the two series for inference will be misleading as there is no statistical causality for the sample period.

8. Conclusion

The study concludes that the Current Account Deficit of US is much more than India and growth of US economy is financed by the widening Current Account Deficit. The attempt to develop a causal relationship in the sample period has shown that there exists no causality between FDI Inflows of US from India and its Current Account Balance and between FDI Inflows of India from US and its Current Account Balance. The may be due to the small sample period used for the econometric modelling and therefore there is a need to attempt to develop a causal relationship between the same variables over a longer period of time. Thus, in such short run, policy making should consider this result.

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Appendix I

Variable Descriptions

FDII	FDI Inflows in India from United States (in US$ millions)
FDIU	FDI Inflows in United States from India (in US$ millions)
CABI	Current Account Balance of India (in US$ millions)
CABU	Current Account Balance of United States (in US$ millions)
CAIP	Current Account Balance of India (as % of GDP)
CAUP	Current Account Balance of United States (as % of GDP)

Note: Notation 1 to any variable means first order differencing of the series while 2 means second order differencing of the series.

Appendix II

Matrix of Bilateral FDI and Current Account Balance (In US$ millions; CAIP & CAUP in %)

Year	CABI	CABU	CAIP	CAUP	FDII	FDIU
2001	1410.180	-396599.0	0.291982	-3.708453	364.0000	162.0000
2002	7059.500	-457250.0	1.398069	-4.136737	268.0000	-16.0000
2003	8772.510	-519090.0	1.483516	-4.478391	297.0000	125.0000
2004	780.196	-628524.0	0.109048	-5.085621	469.0000	277.0000
2005	-10283.500	-745445.0	-1.227882	-5.655453	346.0000	868.0000
2006	-9299.060	-806726.0	-0.981005	-5.784884	706.0000	443.0000
2007	-8075.690	-718641.0	-0.669565	-4.931904	950.0000	731.0000
2008	-30972.000	-690789.0	-2.393299	-4.662775	1236.0000	1231.0000
2009	-26186.400	-384024.0	-1.956767	-2.645318	2212.0000	490.0000
2010	-54515.900	-441963.0	-3.197798	-2.933760	1070.8100	1317.0000
2011	-62517.600	-460358.0	-3.238419	-2.947421	994.3800	764.0000
2012	-91471.200	-449669.0	-4.833217	-2.764424	477.8399	353.0000
2013	-49226.000	-376763.0	-2.540307	-2.232908	786.5430	531.2937
2014	-31288.800	-389525.0	-1.532950	-2.222434	854.6280	583.7919

Source: UNCTAD Statistics

Appendix III

Summary Statistics

	CABI	CABU	CAIP	CAUP	FDII	FDIU
Mean	-25415.27	-533240.4	-1.377757	-3.870749	788.0144	561.4347
Median	-18234.95	-458804.0	-1.380416	-3.922595	746.2715	510.6469
Maximum	8772.510	-376763.0	1.483516	-2.222434	2212.000	1317.000
Minimum	-91471.20	-806726.0	-4.833217	-5.784884	268.0000	-16.00000
Std. Dev.	29920.82	152107.5	1.819322	1.252697	516.8726	393.3392
Skewness	-0.755361	-0.596857	-0.044671	-0.111489	1.461925	0.524709
Kurtosis	2.651373	1.787750	2.327876	1.593861	5.086397	2.491074
Observations	14	14	14	14	14	14

Source: Analysis Output from eviews by researcher

Appendix IV

Normality Test of Residuals for White Noise

Series	Jarque-Bera Stat.	Prob.	Data Decision
CABI	1.402230	0.496032	Normally Distributed
CABU	1.688460	0.429888	Normally Distributed
CAIP	0.268178	0.874512	Normally Distributed
CAUP	1.182386	0.553666	Normally Distributed
FDII	7.526140	0.023212	Not Normally Distributed
FDIU	0.793500	0.672502	Normally Distributed

Source: Output from eviews by researcher