

Determinants of Current Account Balance in Emerging Markets: A Study of BRICS

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Abstract

Increasing current account imbalances in the global economy in the past few years have raised concerns regarding the factors responsible for the rise in current account balance. BRICS comprising 43% of the world population, having 30% of the world GDP and 17% share in the world trade, is one such group of countries that provide an interesting case to explore the dimensions of current account deficit. Russia and China are exhibiting current account surplus whereas India, Brazil and South Africa are experiencing current account deficit. This study aims to investigate the determinants of current account balance in BRICS during 2000-2017. This paper considers a strongly balanced panel of annual data for BRICS during 2000–2017. The Authors have identified the following five determinants of current account balance for the analysis i.e. real effective exchange rate (REER), terms of trade (ToT), inflation, growth and net foreign assets (NFA). They have used the static panel data techniques for the estimation of the relationship between these five variables and the current account balance. In addition, the authors also considered the interaction of these variables with country dummies to capture if the countries have individual effect on current account balances.

Findings suggest, NFA are one of the important determinants with positive impact on current account balance in BRICS. Inflation is found to have a significant impact on current account balance in Brazil, Russia and India. The impact of inflation on current account balance in India and Russia differs from that of Brazil. REER is also found to have a crucial impact on current account balance in Russia, India and South Africa whereas ToT plays a significant role in determining the current account balance in India and Brazil. Further, impact of these variables on current account balance varies based on economy.

The paper concludes with the policy implications and future research suggestions. For instance, on policy front, the analysis indicates that countries like India which are experiencing current

account deficit could target policy intervention from the government in terms of controlling inflation and maintaining favourable ToT as these macroeconomic policies could help in reducing the CAD. Similarly, economies like South Africa experiencing CAD could target policies for lowering the REER. That could help in reducing CAD in South Africa.

Keywords: Current account balance, panel data, BRICS

1. Introduction

Increasing current account imbalance and its negative impact on economic performance of the countries have long held the centre stage of policy debates across developing and developed economies. Traditional wisdom suggests that when most of the developing economies attained their independence sometime in late 1940s and 1950s, many were struggling to find a grip on the economic stability. As an easy fall-out, considering they were at lower level of industrialization, 'import policy substitution' came much handy to address such mammoth economic problem. Major economies such as India, China, Brazil remained staunchly wedded to protectionist, almost isolationists trade policies. The sole effort was geared towards replacing more and more imports by domestic production, with the state playing an overarching dominant role in the domestic production. Oil being a major driver of industrial activity then and even now forced many developing economies such as China, India, Brazil and South Africa to remain continuously engaged in imports. A major component of these countries' import baskets was predominantly oil [2].

As economies advanced, rising consumer's demand was noticed, disposable income rose, economy noticed higher growth, all these coupled with forces of liberalization, privatization and globalization experienced a shift in adoption of market economy. Disintegration of soviet economy and subsequent establishment of CIS countries in early nineties reaffirmed the faith in market economy where it was noticed that market provides better outcome than centralized planning and import substitution policies.

Late nineties and early 21st century witnessed further resurgence in market reforms leading to many developing economies registering higher growth [3]. However such speedy market reforms, financial deregulation and innovation without adequate checks and balances majorly

in developed economies like USA and EU resulted in a crisis which virtually remained unparalleled in history, only comparable to the Great Depression of 1929.

Towards 2014 -15 world economy showed some signs of recovery, but this growth path was largely interrupted by heavily dominated protectionist policy of USA under Trump administration. Current US-China trade war is a major reflection of such policies which significantly disturbed the global economic trends and continues to do so. With no end in sight, the escalation of tit-for-tat tariffs between the US and China is still in the danger zone.

A fallback of such protectionist policy has led to rising current account imbalance of US with China and other economies. Factors causing these current account imbalances and the sustainability of such large and persistent current account imbalances are at times followed as a part of compulsion, not as a choice. So, to interpret these imbalances as healthy or signal a macroeconomic or financial distress depends how evaluate such situation which is tricky [4].

Current account balance is one of the key measures of an economy's macroeconomic performance. It is a sign of country's relative competitiveness. Current account could be defined in a number of ways. It is broadly expressed as the difference between value of exports of goods and services and value of imports of goods and services [5]. Since balance of trade is one of the major components of current account, most of the policies target increasing exports to maintain the favourable current account balance.

However, current account could also be defined as the difference between the national savings and national Investment. This implies that a current account deficit could also reflect the low level of total savings than the total investments. Generally, developing countries are assumed to be labour abundant and capital scarce, hence, they lack the capital for investment due to low savings and hence current account deficit (CAD) could appear more natural in these economies. However, it is not the case always. For instance, the current account surplus of some emerging

market economies notably China has increased considerably and the current account deficit of the developed economy notably US has increased in the past several years [6].

Current account deficit has been a debatable issue among academicians, researchers and policy makers. Occurrence of global financial crisis has reignited it to find out further reasons. On the one hand, it is argued that a large current account deficit is a sign of an unbalanced economy and could lead to a depreciation in the currency whereas on the other hand, it is also argued current account deficit should not be of great concern as long as it is financed by stable capital flows. For instance, some countries (such as Australia and New Zealand) have been able to maintain a current account deficits averaging about 4.5-5 percent of GDP for several decades and there are also countries (like Mexico in 1995, Thailand in 1997 and several economies during global financial crisis) which experiences deterioration of their current account deficit due to the sharp reversal of private financing[7].

It is a conundrum the academicians, policy makers and researchers are still grappling with. Current authors make an attempt to understand what factors can be identified as the determinants of such CAD. While trying to understand this evolving issue, it was noticed that not much academic research or work has been taken up exclusively to explore dimensions relating to CAD for BRICS countries.

To familiarise with little statistics relating to BRICS, it is observed that BRICS comprises of 43% of the world population, having 30% of the world GDP and 17% share in the world trade¹. A striking feature of the BRICS is that on the one hand, China and Russia has been constantly running surplus and on the other hand, India, Brazil and South Africa have been persistently running current account deficit for the period 1997-2017. The need to finance their large current

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account deficit has made their economies more exposed to the sudden reversal of capital inflows which in turn may have repercussions on their macroeconomic fundamentals.

It is observed that a country running large and persistent current account deficit needs to be cautious of the abrupt reversal of capital flows. Empirical studies in the literature suggests that factors like overvalued real exchange rate, inflation, higher interest rates in developed countries, country's own high growth rate could be the reasons behind such current account deficits in developed and

developing countries. Although, BRICS covered around 17 percent of the total commodity world trade, still there are not adequate amount of studies available in the body of literature on the determinants of current account balance in such countries. Most of the existing studies in the literature on determinants of current account balance are either based on the sample of developed economies or a sample of both developed and developing economies. An understanding of the factors responsible for the current account balance or current account deficit in BRICS can help policy makers in firming up appropriate policies that can help to maintain the right levels of current account balance.

Keeping this objective in view, the authors are interested to investigate the determinants of current account balance in BRICS for the period 2000-2017. Methodology that has been adopted aimed at applying the panel regression techniques on the panel data for these five countries. Current account balance (as percentage of GDP) is used as a dependent variable and independent variables are used based on its determinants in the literature (For eg, Terms of trade, Real effective exchange rate, Net foreign assets of country ,country's own growth rate being some of the variables pointed out in the literature).This empirical exercise will elicit certain lessons that may help us to understand the factors which could be targeted to maintain the favourable level of current account balance in these countries.

The rest of the paper is organized as follows. Section 2 describes the current trend in current account in BRICS. Section 3 analyses the current theoretical and empirical literature on the determinants of current account balance. Section 4 presents the theoretical framework and the empirical model. Section 5 provides findings based on the empirical estimation. The last section aims to provide conclusions with policy recommendations.

2. Evolution of Current Account in BRICS

World trends in early 2000s had established the rise of BRICS nations as they virtually dominated the world economy in terms of registering high growth [8]. Together, BRICS account for about 32 percent [9] of World GDP and their total growth and development could have important effects on the progress of global economy. However, it is observed that after the global financial crisis these five nations have been experiencing macroeconomic problems in terms of lower unemployment and lower growth. Brazil, Russia and south Africa experienced a decline in their GDP growth specially after 2010[see Figure I]. China experienced a decline in their current account surplus and real GDP growth after the global financial crisis. India seems to be an outlier among BRICS nations with a rise in its GDP growth after 2012, amid a huge controversy relating to India's growth numbers [10].

Before we examine the determinants of current account imbalances in BRICS, we will first analyse the trends of current account imbalances in these five economies for the period from 2000-2017. It will help us understand whether the nature of current account imbalance (i.e. current account deficit or current account surplus) is persistent in these economies or not.

From the Figure II, it is evident that China and Russia have been persistently facing current account surplus since 2000 while India, Brazil and South Africa have been facing current account deficit for the past many years. As far as China is concerned, it has been a net lender [11] to the rest of the world. The current account surplus of China reached its peak at about

9.89 percent of GDP in 2007. However, it is important to note that the relative size of this current account surplus has then fallen to about 1.8 percent of its GDP in 2011. Then, from 2012-2017, average current account surplus has been about 2.02 percent of its GDP. In 2017, it has remained at 1.3 percent of GDP. One of the main reasons that could be attributed to this declining current account surplus of China is the narrowing trade surplus in goods and widening trade deficit in services [12].

Russia is an economy that has recorded an astounding high current account surplus during the period 1999-2001 i.e. 12.56 percent of GDP in 1999, 16.26 percent of GDP in 2000 and 9.73 percent of GDP in 2001. During this time, it experienced an increase in saving rate (from 26.16 percent in 1999 to 34.65 percent in 2000) and a moderate growth in total investment (i.e. from 14 percent in 1999 to 18.39 percent in 2000). The current account surplus remains on average at 7.9 percent of GDP before reaching at 10.28 percent of GDP in 2005. It was after 2005, current account surplus of Russia has declined and reached 2.6 percent of GDP in 2017. This decreasing current account surplus was due to combination of factors like dropping oil prices, international sanctions and declining growth in Russia. In addition, Russia started experiencing steep decline in exports in the past few years and slow fall in the demand for imports.

India faces a current account deficit till 2000's due to the severe oil shock in 1979. Then, its current account remained in surplus for few years from 2001-2004 before turning into deficit from 2005 onwards. It was in 2011 and 2012, India's current account deficit reaches to high levels of 4.2 and 4.8 percent of GDP. The main reason for such increase in current account deficit was the rising oil prices and increasing imports of Gold and electronic items. Further, in 2016, current account deficit came down to 0.6 percent of GDP due to the stable oil prices and steps taken by the Indian government to curtail the rising current account deficit. Then,

with the rising oil prices and weakening of the rupee, current account deficit in India rose to about 1.9 percent of GDP in 2017 and about 2.4 % of GDP in first two quarters of 2018.

Brazil experiences current account deficit for the period 1997-2002. From 2001, Brazil current account deficit started narrowing and turned into surplus in 2003. Till 2008, Brazil remained in current account surplus but it was during 2004 that its surplus started decreasing and it turned into current deficit from 2008 onwards. During the period 2003-2008, Brazil's economy was growing at the rate of about 5 percent with stable consumption and fewer investments. However, with the onset of financial crisis in 2008, the Brazil current account deficit has widened. It was only after 2014 that its deficit started narrowing which can be attributed to the decline in imports due to fall in Brazilian real in the past few years (see Figure II).

South Africa has been facing growing current account deficit since 2003. It has increased from 0.8 percent of GDP in 2003 to 5.88 percent of GDP in 2013. From 2013 onwards it started declining and reached to 2.26 percent of GDP in 2017. South Africa's high current account deficit is explained largely by large interest and dividend payments made to foreign investors. On average, 40 per cent of South Africa's annual current account deficit between 2004 and 2013 was a result of net payments to foreign direct investors (Strauss,2015). Interestingly, Brazil and South Africa's current account deficit has improved in the past five years and other BRICS countries current account balance has been adversely affected after the global economic slowdown.

An attempt was made to examine the overall current account imbalances in BRICS (see Figure III). It is observed that BRICS overall experience current account surplus since 2000. This current account surplus peaked in 2008 and then started decreasing. China and Russia have run

persistent current account surplus and is seen constantly as one of the major sources of current account imbalances in BRICS. From 2003 onwards, China's current account has taken an abrupt (See Figure II) upward trend and reached around 9.88 percent of its GDP in 2007. However, with the unfolding of global financial crisis a turnaround was noticed to witness China's current account surplus fast dwindling to reach 4.75 percent of its GDP in 2009.

Similarly, Russia's has experienced high current account surplus in 1999 and 2000 and its current account surplus has remained in double digit till 2005. It was after the global economic slowdown that Russia's current account surplus started shrinking. The other BRICs countries' current account deficit is relatively a small share of their GDP. This is the reason why overall current account in BRICS is in surplus over the period 2000-2017 and this surplus has been decreasing specially after the global financial crisis.

In 2011, overall BRICS' current account surplus is very low. This is due to the fact that in 2011 China's current account surplus remained quite low (1.8 percent of its GDP). India's current account deficit at that time was relatively high (at 4.29 percent of GDP) which resulted in lowering overall current account surplus for the BRICS nation as a whole. It is significant to note that China and Russia have been the major contributor to the aggregate current account surplus in BRICS as other three BRICS countries (India, Brazil and South Africa) have moderate current account deficit during the past few years.

3. Review of Literature

The issue regarding the determinants of current account balance has been of significant interest to scholars from the 1980s onwards. The studies related to determinants of current account balance could be grouped into two categories. The studies in the first group have examined the

short run determinants of current account balance. These studies are based on the assumption that current account acts as a buffer against temporary shocks to national cash flow, to smooth consumption and to maximize welfare (Ghosh and Ostry,1995). The most prominent studies in this group includes work by (Ghosh,1995), (Ghosh and Ostry,1995), (Glick and Rogoff, 1995), (Craigwell and Samaroo,1997), (Nason and Rogers, 2006) and (Kraay and Ventura, 2000). For instance, fiscal policy, movement in terms of trade, exchange rate is pointed as some of the important determinants of current account imbalances in the short run in developing as well as industrialized countries.

The second group of studies focusses on the long run and medium run determinants of current account imbalances. Few representative studies in this group include work by Debelle and Faruqee ,1996; Calderon, Chong and Loyza ,1999 ; Craigwell and Samaroo, 1997 and Sadiku,2015 . These studies are further either cross-country based or country specific[13].

For instance, Chinn and Prasad, 2003 examined the medium-term determinants of current account using the data of 18 developed countries and 71 developing economies. Their findings suggest that budget balance, the initial net foreign assets (NFA) and financial indicators affect the current account balance positively in developing economies.

Calderon et al. ,2007 focussed on the dataset of developing economies and low-income states and their findings showed that the appreciation of the real exchange rate and deterioration of total terms of trade deteriorates the current account deficit. Similarly, Medina, Pratt and Thomas, 2010 studied the determinants of current account balance for developing countries. They found that the fiscal balance as well as increase in net foreign assets significantly affects the current account balance. Hermann and Jochem, 2005 and Bussiere et al. ,2004 based on their study using panel data of EU member states, found that the relative income per capita and high capital investments are important determinants of excessive current account deficit in EU member states.

Aristovnik,2006 examines the main determinants of the current account balance to assess the possible extension of current account deficits in selected transition economies, Eastern Europe and the former Soviet Union. They found that economic growth has negative impact on current account balance whereas fiscal balance has significant impact on the current account. In addition, they also found that the appreciation of the real exchange rate and the deterioration of terms of trade (TOT) worsen the current account deficits in transition economies.

Debelle and Faruqee ,1996 using a cross section of 34 developed and developing countries as well as panel data of 21 countries over the period 1971-93 found that the relative income, government debt and demographics play a significant role in the long-term variations of the current account. They also found that some variables like changes in the real exchange rate, business cycle and changes in the terms of trade have significant impact on the current account.

Calderon, Chong and Loyza (1999) also studied the transitory and permanent effects of various macroeconomic variables on the current account using the data of 44 economies over the period 1966-1995. Some variables like domestic output growth and reduction in international interest rate were found to have both transitory and permanent positive effect on current account deficit whereas variables like Gross Domestic National Income, Saving, terms of trade and real effective exchange rate are found to have different permanent and transitory effects for their period of study.

Further, in addition to these two group of studies, there is another kind of studies in the literature that have examined the effect of chosen specific macroeconomic variable(For instance, Budget deficit in (Banday & Aneja, 2016) ; fiscal deficit in (Sen and Kaya,2016) , (Parikh and & Rao ,2006) ; public and private imbalances in (Batdelgar and Kandil, 2012) ; External Debt in (Batdelgar, T. and Kandil,2012), (Bulut, 2011) ; Trade openness in (Batdelgar and Kandil ,2012); foreign capital inflows in (Saglam & Yalta,2015) on the current

account deficit for cross country sample as well as individual countries using time series econometric techniques.

Above review of literature broadly delineates the reasons and dimensions of current account deficit in different countries but not exclusively on BRICS as group. Existing literature on this significant macroeconomic problem definitely lacks the in-depth analysis relating to current account deficit. A group whose significance is well recognised in the world economy not only from the perspective of emerging economic growth that one notices but also due to the representation they hold being countries of different continents having wide cultural and political landscape, yet having a common goal which was also recently exhibited at G-20 meeting in Osaka[14]. Lack of such studies or literature necessitates researcher or academicians to explore the key determinants of the current account deficit in BRICS nations. Authors have made an attempt to examine issues behind it and try to fill this existing gap by analysing the long-run determinants of current account deficit in BRICS countries during 2000-2017.

4. Theoretical Framework & Empirical Model

The literature has broadly defined three theoretical approaches that characterize the current account balance and each of the approach determines certain important variables that affect the current account balance of a country.

Originally, according to trade balance approach, current account balance was broadly expressed as the difference between a nation's exports and nation's imports. Hence, variables (for instance exchange rates, prices, and incomes at home and abroad) that explain the trade balance were viewed as central in explaining the current account imbalances too. Although this approach was straight forward, it was found to have limited ability to explain long-run equilibrium positions in current account imbalances of economies.

The second approach is the Saving-Investment approach. It defines the current account as the difference between a nation's total saving (S) and total investment(I).

$$CA = S - I$$

It focussed on macroeconomic variables that determine saving and investment. For instance, this approach signifies the importance of GDP growth and real exchange rate in explaining the long-run developments in current account deviations.

From figure IV(a), it is evident that after the global financial crisis, the total investments in Brazil have been higher than the total savings leading to higher current account deficit after 2008. Similarly, it can be observed from the figure IV(b) that the total national savings in Russia has always been higher than the total investments. This explains the persistent current account surplus in Russia for the period 2000-2016. This difference between the total savings and total investments has been higher during the 2000-2005 when Russia experienced a persistently high current account surplus. From the Figure IV(c), it is observed that, the total investments in India have always been higher than the total savings except for few years (2001-2004) leading to persistent current account deficits in India till date. From the figure IV(d), in China, it can be seen that gross savings has been always higher than the total investments which explains the existence of persistent current account surplus in China for the past seventeen years. In case of South Africa, it is clearly visible (see figure IV (e)) that since 2002, its total investment is much higher than the gross savings which explains the existence of high current account deficit in South Africa. Although, this difference between the total savings and total investments decreases after the global financial crisis for only two years but again it widened pointing to a high current account deficit since 2010.

According to the net capital inflows approach, the current account deficit is equivalent to the net inflow of capital from abroad as more capital is required to finance the spending which is higher than the national income.

Now, our paper is based mainly on the saving-investment approach that defines current account balance as the difference between the total national savings and total investments. Based on that, we have included the variables that affects the total savings and total investment in the economy (like Real effective exchange rate (REER), Net foreign assets and GDP growth rate). However, it is observed that this approach does not emphasize much on the external sector that could also have an important implication for the current account balance of any economy. Hence, in order to capture the impact of external sector too, the authors have identified the variables that could determine the current account balance in BRICS nations based on all the three approaches and the review of literature.

We define our model specification as follows. Current account balance is defined to be a function of the following variables i.e.

$$\mathbf{CAB = f (REER, Gr, TOT, CPI , NFA)}$$

Where the symbols have the following meaning: -

CAB : Current account balance as percentage of GDP.

REER : Real Effective Exchange rate

Gr : Growth rate.

TOT : Terms of Trade

CPI : Inflation

NFA : Net foreign Assets in local currency unit.

It is observed from the literature that many balances of payments crises are preceded by an appreciation of currency. We expect the real effective exchange rate (REER) to play an important role in determining the current account balance of an economy. As the REER increases, the country's goods become more expensive and less competitive relative to its trading partners and hence contribute to higher current account deficit whereas decreasing REER implies increasing exports leading to current account surplus. We also expect the GDP growth rate to be positively associated with the current account balance. The net foreign assets are also expected to have a positive impact on the current account balance because as per the elasticity approach, current account is defined as the sum of trade balance and the net foreign assets in domestic currency.

Since trade balance is one of the major components of current account balance, it is expected that terms of trade could be an important variable in affecting the current account balance in an economy. With the favourable terms of trade, it is expected that the current account balance will increase and vice versa. In our model, we have also accounted for inflation. Inflation is measured by the consumer price index. Inflation will lead to domestic goods being expensive and hence will lead to less exports. This would result in current account deficit. Hence, inflation and current account balance are expected to be negatively associated.

5. Data and Methodology

This paper considers a strongly balanced panel of annual data for five BRICS countries over the period 2000–2017. This constructed dataset considers mainly five determinants of current account balance for the analysis. These five determinants are real effective exchange rate, Terms of Trade, inflation, growth and Net foreign assets. Apart from these five variables, the model also considers interaction of these variables with country dummies to capture if the countries have individual effect on current account balances. This research uses data from

mainly two major sources i.e. IMF World Economic Outlook (WEO),2018 and, World Bank Development Indicators (WDI),2018.

For this panel dataset, it considers current account balance (which is defined the sum of net exports of goods, services, net income and net current transfers) as a share of gross domestic product (GDP) as a dependent variable and the explanatory determinants are real GDP growth rate, real effective exchange rate, net foreign assets (in local currency units), inflation (measured by CPI) and terms of trade(measured using Net barter terms of trade index).We have also included the interaction terms of country dummies with three variables (TOT, CPI and REER). Further, we have also included a dummy variable called crisis to capture if the impact of current account balance was different in the years of global financial crisis. This dummy variable is defined as 1 for the year 2008 and 2009 whereas for other years it is zero.

The methodology used to estimate our model is the Panel data estimation static model. We firstly estimated the Fixed effect model. The F statistics reported at the end in the Fixed effect model helps us choose between the pooled OLS and panel data models Then, we also estimate our model using random effect model. Finally, Hausman test is used to choose between the random and fixed effect model.

6. Estimation Results

This section presents the estimation results, which aims to find the determinants of current account balances in the five BRICS countries. We have estimated the two models (refer Table 1). In model 1, we have not included the net foreign assets as one of the explanatory variables whereas in model 2 we have included net foreign assets as one of the explanatory variables. We estimated both the fixed effect as well as random effect model for both the models. Then, we used the Hausman test to find out the best model between the two. Our Hausman test statistic shows that we should select the random effect model for our analysis.

Our findings suggest that growth does not have a significant impact on the current account balance in BRICS economies. It is found that Net foreign assets have a significant positive impact on current account balance in BRICS countries. This finding is in accordance with the elasticity approach according to which current account is defined as the sum of trade surplus and net foreign assets in the domestic currency value. Also, a country with larger negative net foreign assets will result in higher interest payments leading to larger current account deficit. Positive net foreign assets mean countries are getting more revenues from foreign assets than they pay on their cross-border liabilities which will result in current account surplus. Hence, it is expected that net foreign assets and current account balance go in tandem with each other.

For the three explanatory variables (REER, CPI and TOT), we have tried to capture how the impact of these variables on the current account balance differ according to the five countries in BRICS. For this we have included four countries dummies in our both the models representing Brazil, Russia, China and South Africa. Our base category is representing the country India. It is suggested from our findings that in India and Russia, inflation leads to decrease in current account balance. This is in accordance with our expected sign that due to inflation, the domestic goods become more expensive which leads to decrease in exports and increase in imports leading to higher current account deficit. Further, from Savings-Investment approach which defines current account as the difference between the savings and Investment, it is clear that high inflation will erode the ability of households to save and much of their savings will be into unproductive assets leading to higher current account deficit. However, in Brazil, it is found that higher inflation is contributing to the positive current account balance.

Our findings also suggest that in Brazil, the impact of inflation on current account balance is higher than the Indian economy based on both the models. This could be due to difference in the number of products in the consumption basket of India and Brazil. Similarly, in China, the impact of inflation is higher on current account balance as compared to India when we control

for the net foreign assets (in local currency units) received in China. In South Africa and China, inflation does not have a significant impact on the current account balance.

Our findings further suggest that, Russia and Brazil have a significant higher impact of real effective exchange rate on current account balance as compared to India. The real effective exchange is expected to have a significant negative impact on their current account balance. This is in accordance with our expectation of negative sign of REER. With the increase in REER, the domestic goods become more expensive and less competitive relative to foreign goods and contribute to increasing current account deficit.

Further, our results also indicate that terms of trade have an overall significant impact on current account balance in India and Brazil. However, it is observed that terms of trade impact current account positively in India whereas in Brazil, terms of trade impact current account balance negatively. The negative impact of increase in index of terms of trade in Brazil could be explained by the heavy reliance of Brazil on commodity exports. Commodity exports which constitutes about fifty percent of Brazilian exports are considered to be highly volatile in nature and hence when the economy grow, the prices are high and when the economy slows down the contraction could be severe leading to low volume as well as value of Brazilian exports [15]. In addition, it is also found that impact of terms of trade on current account balance is less strong in Brazil, South Africa and China than India over our period of study. We also included a dummy variable for the period of global financial crisis to capture if the impact on current account balance was different before and after the crisis, but this variable does not turn out to be significant.

7. Conclusion

The increasing current account imbalances in both developed as well as in developing economies has delineated the factors responsible for such current account imbalances in these

countries. Most of the empirical studies have either considered the sample of developed countries or are country specific. There has not been any study that have looked at the impact of determinants of current account balance in BRICS. A striking feature of the BRICS is that on the one hand, China and Russia have been constantly running surplus and on the other hand, India, Brazil and South Africa have been consistently running current account deficit for the period 1997-2017. BRICS, which covers about 17 percent of the world commodity trade have not received much attention in terms of its different dimensions related to current account balance. Hence, this paper contributes to the literature by undertaking a study which examines the determinants of current account balance for the five BRICS countries for the period 2000-2017.

Our findings from the empirical model imply that net foreign assets are one of the variables that have significant positive impact on the current account balance in the BRICS economies. It is also found that real effective exchange rate is an important determinant of current account balance in Russia, India and South Africa. Similarly, inflation has a significant impact on current account balance in Brazil, Russia and India whereas terms of trade is found to be important determinant of current account balance only in India and Brazil. Our findings also suggest that impact of these important determinants (i.e. real effective exchange rate, terms of trade and inflation) on current account balance differs in each country in BRICS.

From the policy perspective, our analysis points out that countries like India which are experiencing current account deficit could target policies to control inflation and maintain favourable terms of trade as it could help in reducing the current account deficit. Similarly, economies like south Africa which is again experiencing current account deficit could target policies for lowering the real effective exchange rate. This could help in reducing the current account deficit in South Africa.

During the course of our research, we also identified that interest rate could also be one of the potential determinants of current account balance in emerging economies. The emerging economies like India, China has already various schemes related to export oriented units (EOU's) and Special Economic Zones (SEZ) to boost exports, foreign earnings and employment in their economies. Further, there have been number of financing programmes and schemes to support these export units for export financing. The banking sector plays as significant role in this export financing and hence export financing in turn depends upon the interest rate provided by the banks. So, lower interest rates could actually help in boosting exports and hence can contribute positively to the current account balance in these economies. We have not captured the role of interest rate in this paper and aim to undertake this research further by carrying out a study which also take into account interest rate as one of the potential determinants of current account balance.

Note

1. Concept developed by Jim O' Neil former Chief Economist and Head, Global Research, Goldman Sachs
2. https://www.brookings.edu/wp-content/uploads/2016/07/2004_panagariya.pdf, accessed on 14 June 2019
3. The Indian economy grew at the so-called Hindu rate of growth of 3 to 4 percent. But India has now turned a corner, growing at a much higher rate of 6 to 7 percent during the last two decades (India policy Forum 2007). China also registered 9 per cent average annual real growth rate of per capita GDP in SOAS Department of Economics Working Paper No. 164, <https://www.soas.ac.uk/economics/research/workingpapers/file52389.pdf> accessed on June 22, 2019

4. Obstfeld, M.(2017) “Assessing Global Imbalances : The Nuts and Bolts” : IMFblog ,
<https://blogs.imf.org/2017/06/26/assessing-global-imbances-the-nuts-and-bolts/> Accessed on 9th June,2019
5. Although current account also contains net income including transfer, interest etc which is a small fraction of total current account.
6. <https://www.imf.org/en/Publications/WEO/Issues/2019/03/28/world-economic-outlook-april-2019>. Accessed on June 23, 2019.
7. <http://brics2016.gov.in/content/innerpage/about-usphp.php> ,Accessed on 9th June,2019.
8. On a PPP basis, the aggregate size of the BRICs was about 23.3% of world GDP at the end of 2000, somewhat higher than both Euroland and Japan. Whilst on a current GDP basis, the size of the BRICs is just under 8%, this is also set to rise. Some of these countries are already bigger than some individual G7 economies; China, at 3.6% of world GDP (using current US\$ prices), was slightly bigger than Italy at the end of 2000, and notably larger than Canada.
<https://www.goldmansachs.com/insights/archive/archive-pdfs/build-better-brics.pdf> accessed on July 06, 2019.
9. This is calculated based on the data from World Economic Outlook (WEO) database ,2018
10. Recent findings by Arvind Subramanian in a CID Faculty Working Paper No. 354 published by Harvard where he stated India changed its data sources and methodology for estimating real gross domestic product (GDP) for the period since 2011-12. The paper demonstrates that this change has led to a significant overestimation of growth. Official estimates place annual average GDP growth between 2011-12 and 2016-17 at about 7 percent whereas estimation suggests the growth may have been hovering around 4.5 percent with a 95 percent confidence interval of 3.5 - 5.5 percent. These findings may alter understanding of India’s growth performance after the Global Financial Crisis from spectacular to reasonable.

11. See Santacreu, Ana Maria. "How Has the Current Account of the U.S. Changed?" On the Economy (blog), Federal Reserve Bank of St. Louis, March 29, 2016; <https://www.stlouisfed.org/on-the-economy/2016/march/how-has-current-account-us-changed>. Accessed on July 05, 2019
12. The rising trade deficit in services in China is mainly due to the rise in tourism consumption. China has been importing more services than it has been exporting. Even more interesting is the fact that the increase in China's services deficit has prevented its current account surplus from rising despite the increased trade surplus in goods.
13. Some of the examples of country specific studies on determinants of current account imbalances are by Behera & Yadav(2019) ; Yurdakul & Cevher(2015) ; Insel & Kayikci(2013) .
14. World leaders reached a consensus on topics ranging from the global economy to plastic waste. Almost all G20 leaders, including Donald Trump and (Chinese President Xi Jinping, agreed to launch this process for rules-based multilateral trade liberalization by providing a highest-level political push to the World Trade Organization's multilateral trade liberalization by providing a highest-level political push to the World Trade Organization's e-commerce negotiations, aiming for substantial progress by June 2030 which is the common goal or a priority.
15. Also, the low net income in brazil could also further contribute to low current account balance in brazil.

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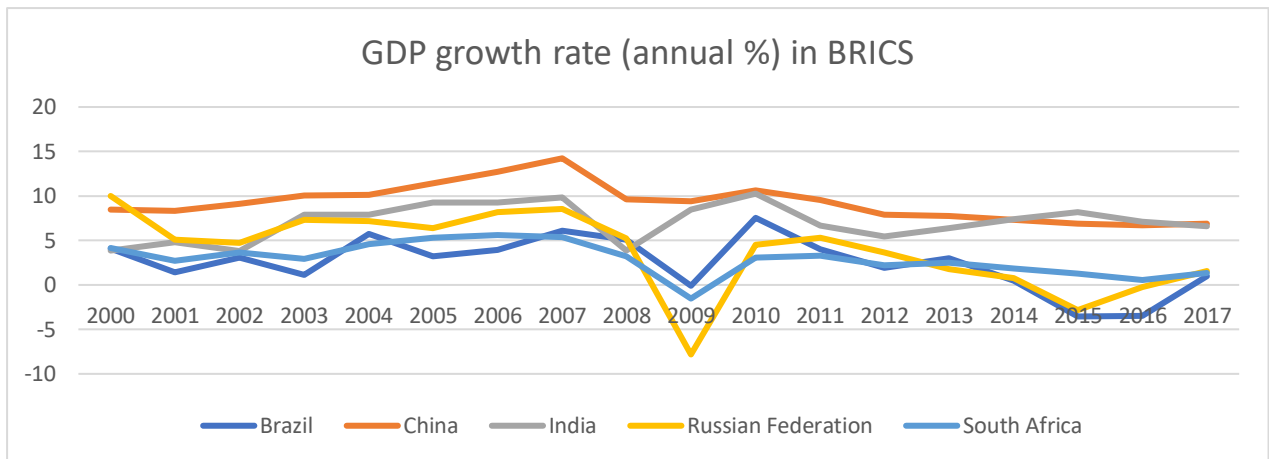
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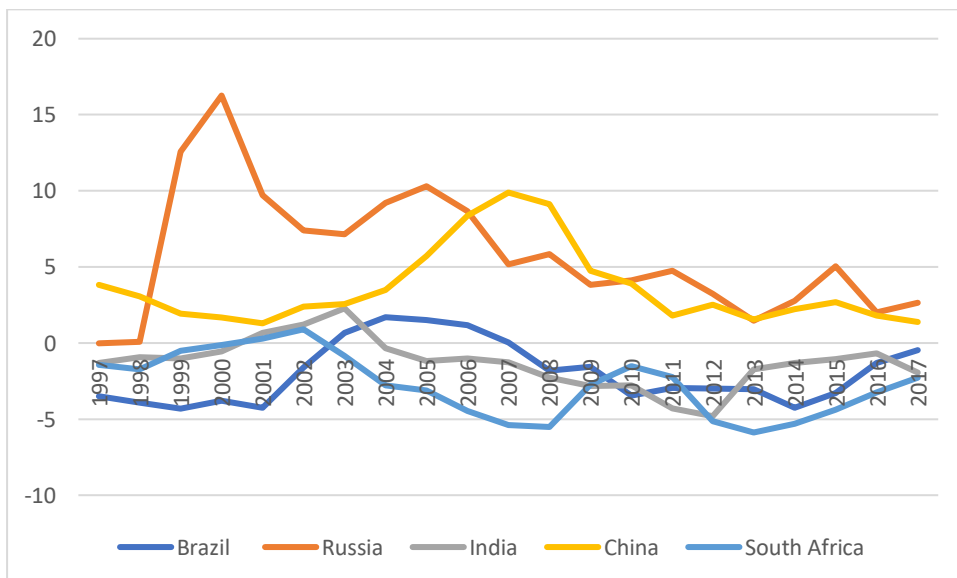
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Figure I : GDP growth rate (annual %) in BRICS



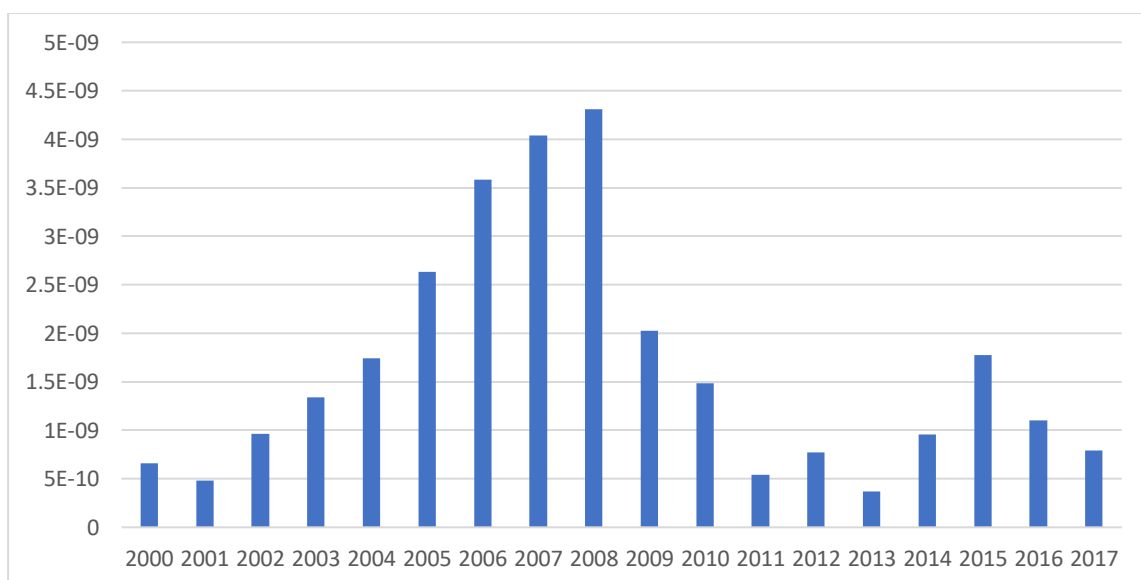
Source: Author's construction based on World Development Indicators (2018)

Figure II : Current Account Balance (as % of GDP)



Source: Authors' construction based on IMF, World Economic Outlook Database.

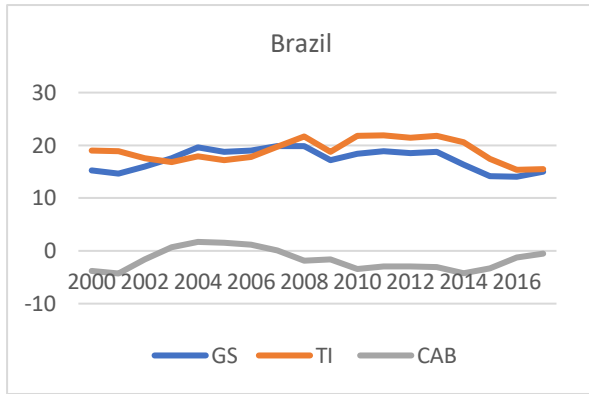
Figure III : Current Account balance as percent of GDP in BRICS



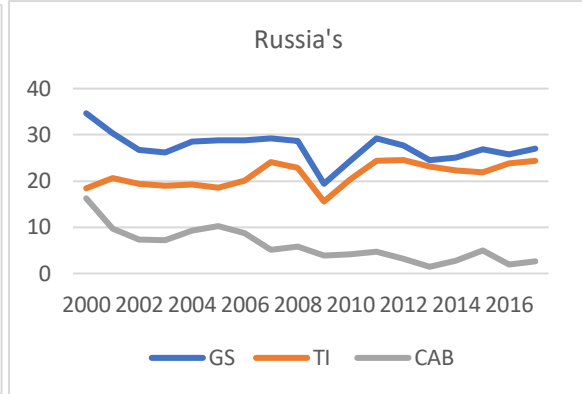
Note : It is observed that BRICS as a whole is showing high surplus during 2007-2008 due to the fact that China and Russia were having huge current account surplus and India's current account deficit was also low ranging between 1.27 percent to 2.28 percent of its GDP. This was due to the low global demand which resulted in not only low Indian exports but also low oil imports in India

Source: Authors' construction based on data from WDI (2018) and WEO (2018) databases.

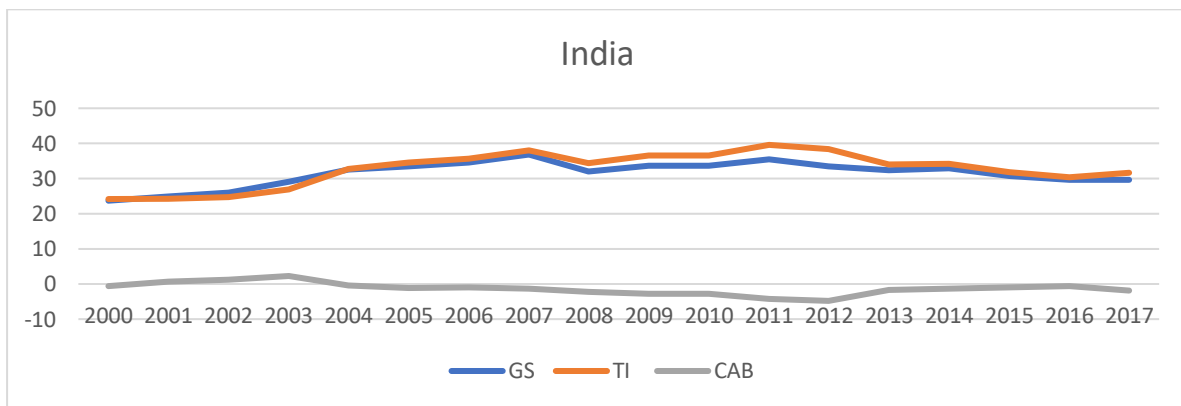
Figure IV : Gross Savings & Total Investment (as percent of GDP) in Five BRICS countries



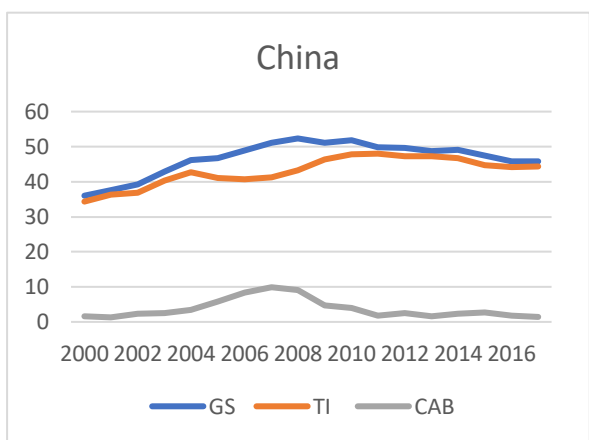
(a)



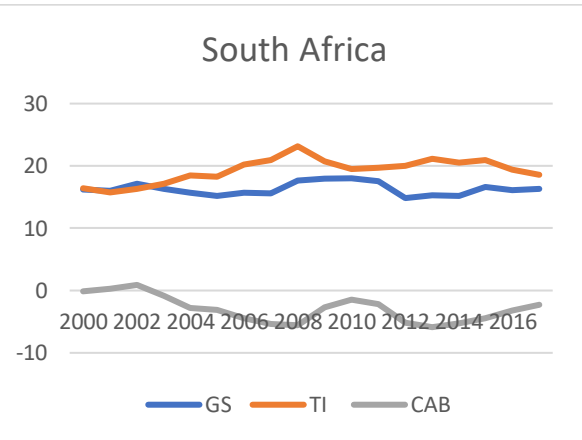
(b)



(c)



(d)



(e)

Source: Authors' construction based on World Economic Outlook data.

Note: GS denotes Gross Savings and TI denotes total investment

Table

Dependent Variable: Current Account Balance as percentage of GDP		
Variable	Model (1)	Model (2)
REER	-0.2519451*** (0.000)	-0.2494761*** (0.000)
CPI	-0.0212587*** (0.000)	-0.0742038*** (0.0000)
Growth	0.2266387 (0.236)	0.2269956 (0.204)
TOT	0.0936424*** (0.000)	0.1048963*** (0.000)
NFALCU	-----	1.97e-13*** (0.001)
B*REER	0.2920603** (.002)	0.2920603*** (0.000)
R*REER	0.1688095*	0.1688095**

	(0.097)	(0.050)
C*REER	.0367037 (0.741)	.0367037 (0.678)
S*REER	.1299839 (0.122)	.1299839*** (0.000)
B*CPI	.0548695*** (0.003)	.1057265*** (0.000)
R* CPI	-.0160756 (0.342)	-.011105 (0.471)
C* CPI	.1470965*** (0.006)	.0933424 (0.138)
S* CPI	-.0055732 (0.808)	.0429444 (0.167)
B*TOT	-.2954352*** (0.000)	-.3233993*** (0.000)
R* TOT	-.0719337 (0.243)	-.0924968 (0.141)
C* TOT	-.1477927*** (0.001)	-.0724198** (0.068)

S* TOT	-.1386725*** (0.000)	-.1495592*** (0.000)
crisis	.0182095 (0.989)	-.2284591 (0.850)
Constant	14.24959*** (0.006)	15.38572*** (0.002)
Overall R	0.8416	0.8500
Hausman test statistic p-value	0.8204	0.9026

Table 1: Regression Results for the Estimated Random Effect Model.

***** denotes significant at 1 percent level , ** significant at 5 percent level and * significant at 10 percent level**

