# Assessing the determinants of the Current Account Deficit: Evidence from South Asia

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# Introduction

- Current account deficit poses a serious threat for a country's macroeconomic stability despite fast economic growth

- The threat is for both present and future generation since the burden of the debt created by CAD is shared equally by both generations.

- Maintaining a healthy external balance is therefore important, be it a developed country or a developing one.

# Introduction cont..

- To figure out the determinants of current account deficit in South Asia, paying particular attention to the impact of changes in exchange rate on current account deficit

- No empirical research has yet investigated the determinants of current account imbalances using the CUP estimation procedures proposed by Bai et al.(2009),at least not in South Asia. This objective of this paper therefore is to fill that gap.

# Introduction cont..

Since the '80s, current account deficit has been prominent and regular feature of South Asian Economies and thereby undermined the growth of this region.
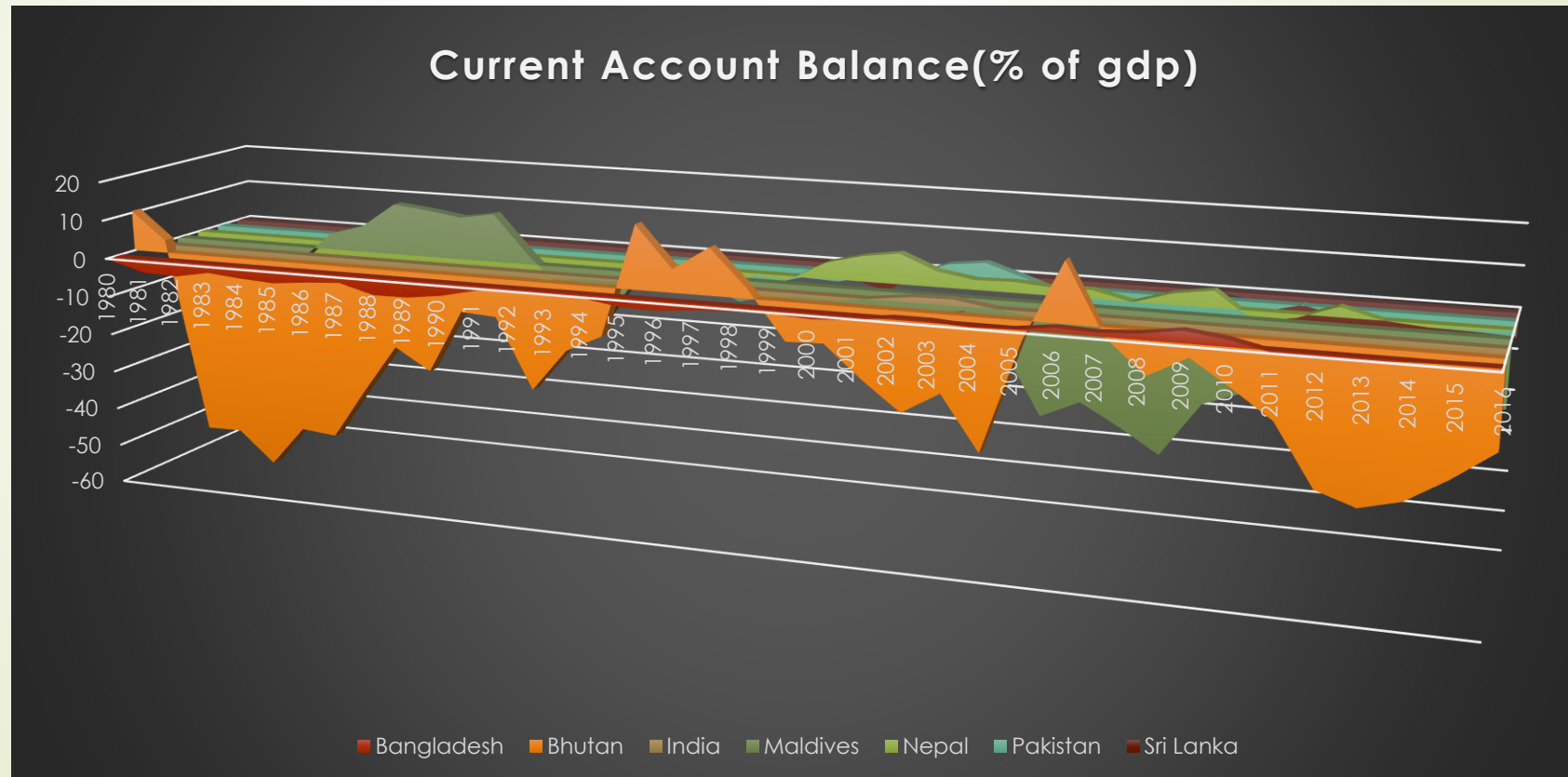
# *Theoretical Background*

- The equation for current Account balance:

$$CAB=(S-I) + (T-G)$$

CAB is a positive fuction of saving and tax revenue but negative function of investment and government spending

- Many theories have been developed involving current account, exchange rate and balance of payments over the years.Two of them are elasticity approach and absorption approach.

- Traditional models such as Keynesian non optimizing models and monetary approach to balance of payments do not take the forward looking agents into account, but Intertemporal approach does.

# Empirical Literature Review

❖ Kahn and knight(1983)

❑ Empirically examined the influences of domestic and external factors on the evolution of current account taking a broad group of non-oil developing countries during the 1970s.

❑ External factors such as decline in terms of trade, slowdown in economic growth in industrial countries and increase in foreign real interest rates and domestic factors such as fiscal deficit and appreciation in real effective exchange rate are relevant in explaining deterioration of current accounts in non-oil developing countries.

# Empirical Literature Review Cont..

❖ Calderon,et al. (2002)

❑ 44 developing economies

❑ Shocks that appreciate the real exchange rate or increase the terms of trade increase current account deficit. They also found that a rise in domestic output growth can generate larger current account deficit.

❖ Bussier,et al.(2004)

❑ 33 OECD AND EU accession countries.

❑ Fiscal balance, the relative income and relative investment positions determine the current account in the medium term.

# Empirical Literature Review Cont..

❖ Garg and Prabheesh (2017)

❑ Autoregressive distributed lag and error correction techniques to examine the domestic macroeconomic and external factors that are responsible for current account behavior in India during the 1997-2002 period.

❑ Effect of exchange rate on current account to be insignificant, oil price volatility and foreign income have positive impact on current account balance.

❑ In favor of twin deficits hypothesis and against Ricardian equivalence.

# Empirical Literature Review Cont..

❖ Sahoo et al.(2015)

❑ Investigated the long run sustainability of current account imbalances in

7 south Asian economies(SAARC countries) using ARDL approach

❑ Current account imbalances of all south Asian economies, except Maldives and Sri Lanka, is unsustainable in the long run.

❖ Das(2016)

❑ Examined the determinants of current account imbalance for developed, emerging and developed countries using dynamic panel GMM.

❑ Current account balance has positive link with trade openness in emerging countries which included several south Asian countries and negative link in developing countries.

❑ Current account balance has significant negative link with net foreign asset, real effective exchange rate.

# Empirical Literature Review Cont..

- ❖ Navaratnam,et al.(2016)

- ❑ Mixed result about the twin deficit hypothesis in south Asia.

- ❑ Budget deficit causes current account deficit for Pakistan and Sri Lanka, the reverse is true for India, Nepal and Bangladesh.

- ❖ Shastri et al.(2017)

- ❑ Existence of triple deficit phenomenon in south Asian region.

- ❑ 1% point strengthening in fiscal balance to gdp ratio is associated with an improvement in current account to GDP ratio of about .38-.50.

# Research Gap

- Investigations have been confined to test whether particular hypothesis (Twin deficit /Triple deficit / Ricardian Equivalence) is true for South Asia or not.

- Few attempts have been made in order to determine the factors responsible for South Asia's current account deficit and the existing ones exhibit contradictory results.

- It is necessary to model the determinants of current account deficit in South Asia, with a special focus about changes in exchange rate on current account deficit.

# Data source and Variables description

## CAB=f (REER, FD,OPEN,NFA, FB, POPgr)

| Variables | Abbreviation | Description | Source |
|---|---|---|---|
| Current Account balance | CAB | Current Account Balance(% of GDP) | WEO |
| Real Effective Exchange Rate | REER | Consumper Price index(CPI) based Real Effective Exchange rate | Darvas(2012) |
| Financial development | FD | Domestic credit to Private Sector(% of gdp) | WDI |
| Trade Openness | OPEN | Ratio of exports plus imports to GDP | WDI |
| Net Foreign Asset | NFA | Net Foreign Asset(% of GDP) | Lane and Milesi Ferretti,External Wealth of Nations Database |
| Fiscal Balance | FB | General Government Net Lending/Borrowing(% of GDP) | WEO |
| Population growth | POPgr | Population Growth(annual %) | WDI |

# Data description

Range of Data: 1980-2016

Sampl observations: 259

# Methodology

Cross Sectional dependence test

| Breusch Pagan LM | Pesaran scaled LM | Pesaran CD | Bias corrected scaled LM |
|---|---|---|---|
| ✓ Suitable whenN is fixed and T→∞ <br> ✓ cannot be applied when N tends to infinite. | ➢ applicable when both T and N tend to infinite <br> ➢ exhibit huge size distortions when T is small but N is large | ✓ A more general test <br> ✓ Developed in 2004 | ➢ proposed by Baltagi, Feng and Kao <br> ➢ More recent test |

# Methodology Cont..

Unit root test

- The first generation tests ignore cross sectional dependence, but the second generation unit root tests take account of dependence

- Pesaran panel unit root test has been applied

- Augmented the standard Dicky –Fuller or Augmented Dicky-Fuller regressions with the cross section averages of lagged levels and first –differences of the individual series.

- Cross sectionally augmented version of the IPS  test :

$$CIPS(N,T) = N^{-1} \sum_{i=1}^{N} t_i(N,T)$$

# Methodology Cont..

Panel Cointegration Test

- Cointegration shows long run relationship

- Requires All the variables to be integrated of the same order

- Pedroni cointegration test has been applied which is a residual based test

- Pedroni presented seven residual based test statistics:Panel and group mean cointegration statistics. The null hypothesis are same but alternative isn't.

- As a robustness check, this study also implements KAO residual cointegration test.

- Data has been demeaned to account for cross sectional dependence

# Methodology Cont..

Long Run Estimation

- Estimate the long run coefficient by CupFM (Continuously updated and fully modified) estimator proposed by Bai et al. (2009).

- CUP estimators are consistent in the presence of cross sectional dependence.

- Superior to LSDV (Least Squares Dummy Variable) and 2sFM (2-stage fully modified) estimators

- CupBC and CupFM estimators have the same asymptotic distribution. $\hat{\beta}_{CupBC}$ does the bias correction only once that is at the final stage of the iteration. However, $\hat{\beta}_{CupFM}$ does the bias correction at every iteration.

- Implements only CupFM along with the Dynamic Ordinary Least Squares estimator(DOLS) to see whether ignoring cross sectional dependence has any implications or not.

# Cross sectional dependence test results

| Variables | Breusch -Pagan LM | Pesaran scaled LM | Biascorrected scaled LM | Pesaran CD |
|---|---|---|---|---|
| CAB | 94.69359*** | 11.37117*** | 11.27395*** | 3.227677*** |
| REER | 253.9140*** | 35.93941*** | 35.84219*** | 11.28545*** |
| FD | 427.4039*** | 62.70949*** | 62.61227*** | 11.92844*** |
| OPEN | 168.9913*** | 22.83555*** | 22.73833*** | 1.323208 |
| NFA | 267.5638*** | 38.04561*** | 37.94839*** | 0.074754 |
| FB | 369.4223*** | 53.76273*** | 53.66550*** | -2.707030*** |
| POPgr | 146.6924*** | 19.39476*** | 19.29754*** | 7.610325*** |

# Panel Unit Root Test Results

| Variables Name | CIPS test | | | Intercept | Intercept+trend |
|---|---|---|---|---|---|
| | Intercept | Intercept+trend | | | |
| CAB | -2.423 | -2.970 | $\Delta CAB$ | -5.638*** | -5.656*** |
| REER | -2.236 | -2.464 | $\Delta REER$ | -5.482*** | -5.547*** |
| FD | -2.163 | -2.235 | $\Delta FD$ | -4.510*** | -4.630*** |
| OPEN | -1.770 | -1.617 | $\Delta OPEN$ | -5.312*** | -5.550*** |
| NFA | -1.093 | -1.444 | $\Delta NFA$ | -4.511*** | -5.369*** |
| FB | -2.453 | -1.708 | $\Delta FB$ | -5.151*** | -5.947*** |
| POPgr | -1.272 | -1.852 | $\Delta POPgr$ | -3.926*** | -4.022*** |

# Panel Cointegration Test Results

| Pedroni Test | Statistic | Prob |
| --- | --- | --- |
| Panel v statistic | 0.830818 | .2030 |
| Panel rho-statistic | 0.983845 | 0.8374 |
| Panel PP-statistic | -1.558857 | 0.0595 |
| Panel ADF-statistic | -1.529303 | 0.0631 |
| Group rho-Statistic | 2.568001 | 0.9949 |
| Group PP-Statistic | -2.844210 | 0.0022 |
| Group ADF-statistic | -2.760920 | 0.0029 |
| KAO test | t-statistic | Prob |
| ADF | -4.857687 | 0.0000 |

# Results of CupFM and DOLS

| Variables | CupFM | DOLS |
|-----------|-------|------|
| REER | 0.031238548*** | 0.024034 |
| FD | -0.074334295*** | -.465067*** |
| OPEN | -0.049941479*** | 0.84064 |
| NFA | 0.075918452*** | -0.066883 |
| FB | -0.43917920*** | -1.109741*** |
| POPgr | -0.72472479** | -3.201646*** |

# *Conclusion*

- Narrowing current account deficit in South Asia is a challenge because it is affected by so many factors

- Contrary to expectations, real appreciation improves current account balance

- Financial development, trade openness, fiscal balance and population growth have positive and significant relationship with current account deficit in South Asia.

- Twin deficit hypothesis is not valid for South Asia.

- Increase in Net Foreign Asset(NFA) helps reduce current account deficit.

# *Policy Implications*
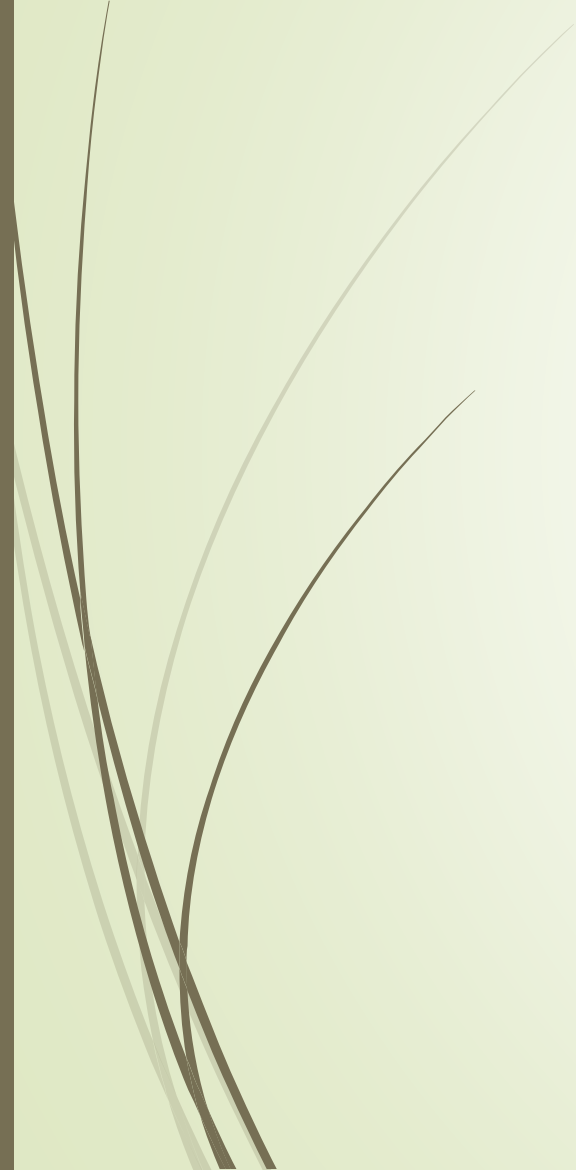
- Promoting intra-regional trade is therefore necessary to reduce the severity of external shocks

- Net foreign asset can be used as a policy instrument to reduce current account deficit

- Each government should improve productive job opportunities for its people and promote policies favorable to labor market so that population growth does not become a burden and create distortions in current account balance.

# Limitations of the study

- Due to the unavailability of sufficient data, some significant factors left out that might address the current account deficit scenario in south Asia

- Future research that investigates the current account balance dynamics incorporating factors such as institutional quality and governance would provide an interesting contribution to the existing literature

*Thank You!*