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Impact of International Trade and Trade Duties on Current Account Balance of the Balance of Payment: A study of N-11 Countries

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ARTICLE DETAILS	ABSTRACT
<p>History Revised format: February 2020 Available Online: March 2020</p>	<p>This study is aimed to investigate the impact of international trade and trade duties upon the current account balance of the balance of payment of N-11 countries. Two constituents of each factor have been considered for the purpose of analysis. For International trade, import (IMPT) and export (EXPT) of goods and services have been considered whereas, for trade duties, taxes on international trade (TOIT) and customs and other import duties (CID) have been taken as the research variables whereas, current account balance (CAB) has been taken as the dependent variable. For the purpose of analysis panel data of N-11 countries for 27 years from 1990 to 2016 has been tested using different econometric technique such as Panel unit root test, Panel co-integration test, Hausman test, Panel regression analysis and Panel causality analysis. The results demonstrate that overall research variables are co-integrated and having long term relationship and affecting each other in the conventional manner. Notably, it is observed via results that in case of N-11 countries the CAB itself is the regulating factor and all other factors are adjusted according to the movement of CAB. The study provides recommendations for the rectification of current account deficit position and also provides scope for future research as well.</p>
<p>Keywords Current Account Balance (CAB), International Trade, Trade Duties, Import (IMPT), Exports (EXPT), Taxes On International Trade (TOIT), Custom and Other Import Duties (CID.)</p>	
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1. Introduction

In the present time of globalization, liberalization of trade has been significant issue for governments and policy makers around the globe, particularly for developing countries. Trade liberalization tends to

accelerate the growth and development of economy through advancement in technology and specialization. It is largely believed that through international trade, countries specialize in goods and services by creating a competitive environment through promotion of new technologies help to create competitive and comparative advantage. Conclusively, human welfare would be increased as there would be a variety of products of low prices yet enhanced quality available for the consumers (Gupta & Choudhry, 1997)

Even though, liberalization of trade generally seems to be of great advantage for the growth of economy, its effect shows considerable variations on country to country basis and associated with various conditions pertaining to the structural and institutional framework of the economy (Chang, Katlani and Loayza, 2009).

Core value of trade openness is to uphold growth of economy by achieving static and dynamic benefits of trade through improved ways of resource allocation; increased competition; an inflow of knowledge and investment and a rapid pace of accumulation of capital and technological advancement. Trade barriers and anti-export biasness will hamper the growth of exports lower than the productive capacity. Barriers to import tend to decrease the efficiency, but on the other hand, they prevent the balance of payments from adverse impact. It is a general concept that liberalization of trade will increase the growth of exports along with imports but on the other hand having significant consequences on the balance of trade and the balance of payments keeping in view the prices of traded goods as another important factor to have effect on these two. Openness to trade may boost the growth of supply side as well but in case of worsening of balance of payments, growth would have unfavorably affected from the aspect of demand reason being that the deficits of payments generated from liberalization of trade are unstable and would be difficult to rectify through mere changes in relative prices or forex rates. (Khan and Zahler, 1985).

When the countries around the globe are having their respective domestic industries and domestic markets, in that case it is necessary to observe regulatory controls before they can interact with the highly competitive global market environment. Domestic industries and markets require protection and support in order to safeguard them from any strict competitive move such as dumping. Furthermore, countries are required to carefully monitor the issues such as depletion of their natural resources and pricing control etc. in connection with the international trade they undergo globally.

Nearly all countries, at least up to a certain extent, regulate their trade interactions with the international market by means of Trade Laws, Taxes and Tariffs which are referred to as Import and Export Duties. The aim is to bring into operation fair and safer trade practices which can also meet the ethical requirements as well. Tariffs get affected by economic, financial and political outlook of the Governments along with the mutual relationship between the trading countries.

Generally a specific percentage of the value of the commodity is set as the custom duty. The percentage based value of custom duty ensures that it gets adjusted automatically with the fluctuation of the international market prices. In addition to customs duty, additional/special duty are also applied such as certain fixed value per measuring unit of quantity of the commodity, with a view to regulate the export or import, or for the purpose of collection of revenue and several different circumstances related to international trade and relevant matters of the country.

These trade duties are aimed at generation of revenue, application of regulatory policies and protection of general outlook of the economy. They can be of retaliating nature on one hand or can be based on mutual trade agreement or understanding with trade partners on the other hand.

The current account balance has always been a vital subject of interest and attention for many researchers around the world as it is a direct indicator related to the trade activities carried on among different countries internationally. Currently, there are several studies present related to this topic but according to my knowledge and observation majority of the studies are based on developed countries such as U.S, China, Japan and different American and European countries. For instance Chernyak, Khomiak and Chernyak (2013) investigated the balance of payment crisis in their research about Next-11 Eastern European countries, Weixian (1999) studied the dynamic relationship between China's trade balance and macroeconomic variables, Médici and Panigo (2015) investigated the existence of association in foreign asset formation (FAF) and terms of trade (TOT) with monthly data of Argentina, Pacheco-López (2005) studied the impact of liberalization of trade in the era of mid-1980s pertaining to the liberalization related to the North American Free Trade Agreement (NAFTA) on nonoil exports, imports, and the balance of trade in Mexico, Malhotra, Rus, Kassam (2008) analysed the effectiveness of antidumping (AD) duties pertaining to the agricultural sector of US for restricting trade with data related to U.S.

However, effect of international trade along with trade duties taken as the main determinants of current account balance, is still largely an unaddressed domain with a very few researches available where these determinants are considered for investigation. Moreover, the studies addressing this topic for N-11 countries are also very rare. As a group of N-11 countries which includes, Turkey, South Korea, Mexico, Iran and Pakistan, are considered as a rapidly developing economies and the extant of literature has not shown any evidence where an attempt to identify the impact of trade and trade duties on the current account balance of the balance of payment for N-11 countries is studied. Therefore, this research is an attempt to fill this gap.

This study is important in order to identify the nature and magnitude of impact each of the N-11 countries could have on their respective current account balance of the balance of payments due to implication of international trade and trade duties. Both these variables have vital role in the economy of any country. Insight knowledge of these variables may enable the country to adopt such measures in an attempt to improve the position of current account balance of the balance of payments of its economy. Therefore, results of this study could be vital enough to recognize the impact of international trade and trade duties upon the current account balance of the balance of payments of the N-11 countries collectively as a group.

Scope

This study tends to investigate the impact of only 2 variables i.e. international trade and trade duties, both having two constituents, on the current account balance of the balance of payments of the N-11 countries keeping in view the limited data and time available for the purpose of research whereas in a totally dynamic economic environment there would be a number of other factors that could be affecting the current account balance of the balance of payments of the said countries. Therefore, the true impact of these variables, apart from other factors, on the current account balance of the balance of payments could only be observed in an isolated environment which seems quite impossible to manage.

Moreover, unbalanced panel data is available for trade duties for almost all countries except few and data for Nigeria is completely unavailable for trade duties. Conversely the data of imports, exports and current account balance is completely available for all countries. So the analysis through E-Views software has been performed considering missing values as zero. The software has automatically adjusted the observations accordingly, enabling the performance of econometric test in order to drive meaningful conclusions thereof.

2. Literature Review

There are two most significant measures of the foreign trade of a country. One is current account balance and the other is net capital outflow. A current account balance is usually observed in two states i.e. a surplus or a deficit. Surplus of current account balance denotes the value of net foreign assets of a country's (i.e. assets minus liabilities) in any particular period under consideration, conversely a current account deficit represents the opposite position of surplus where liabilities exceeds assets.

Payments, pertaining to both private and government sectors are accounted for the purpose of calculation. The reason why it is known as the current account is because consumption of goods and services generally pertains to the current period. In economics, current account balance of a country is one of the three components of its balance of payments, the other two are the financial account and the capital account. The current account comprises of the balance of trade, net primary or factor income (difference between foreign investments earnings less payments made to foreign investors) and net cash transfers taken place in a particular interval of time.

The current account balance can be defined in a precise manner as the difference between monetary value of the goods and services produced domestically and the aggregate demand of the goods and services (can also be called as absorption). The current account is said to be in surplus state when absorption is less than income and referred to be in a deficit position when the condition is such where absorption exceeds income. (Egwaikhide, 1997).

Besides current account balance, another related important concept which is also one of the most eminent components of the international trade is the trade barriers. Trade barriers are referred to as the restrictions, observed by regulatory authority or government of a country on foreign trade.

These barriers can be of several different forms including tariffs and non-tariff barriers to trade, subsidies, quotas, import and export licenses, devaluation of local currency, embargoes, voluntary restraints on exports and other sorts of trade restrictions. Yeh, 1999 suggested that a country should have an optimum level of tariff for the welfare of the state which is having an increasing growth rate.

3. Theoretical Background

One of the most debatable topics among the researchers is that whether or not open economies excel swiftly as compare to the closed economies? A large number of empirical studies give positive response to this question in favor of open economies. The reason behind favoring the trade liberalization is fairly based on the results of these empirical studies, claiming that, consistently higher growth rates have been observed in the economically outward-oriented countries than the ones with inward-oriented economic setup (Yanikkaya, 2003).

Early studies demonstrate contradictory conclusions upon this matter. As far as export side is concerned, a number of studies expressed that countries having liberalized economic setup have improved their export performance (Ahmed, 2000, Bleaney, 1999, Joshi and Little, 1996, Helleiner, 1994, Weiss, 1992, Thomas et al., 1991). There are some other studies which provide evidence for the presence of some extent of association between growth of export and trade liberalization (Jenkins, 1996, Greenaway and Sapsford, 1994, Shafaedin, 1994, Clarke and Kirkpatrick, 1992, Agosin, 1991, UNCTAD, 1989).

For the import side, great number of researches concluded that a strong positive relationship is present between trade liberalization and growth of imports, keeping in view the impact of income and relative price changes upon imports (Mah, 1999, Bertola and Faini, 1991, Melo and Vogt, 1984). The lowering down of import barriers will demonstrate an effect of direct and continuing nature on growth of imports which will subsequently lead towards increase in domestic income in the future.

A small number of studies have been found which deal with the influence of trade liberalization on the balance of payments or the trade balance. Khan and Zahler, 1985 studied the impact of trade and financial liberalization on the South American economies of Argentina, Chile and Uruguay. It was found out that although there is increase in trade volume but serious unfavorable condition occurred for current account of the balance of payments, and adjustment was required to finance the deficits because capital flows that were generated by differentials in interest rate, were insufficient to do so. The conclusion entails here in this case was that, without separating the impact of volume and price changes, in terms of value, imports excel swifter than the exports do.

Ostry and Rose, 1992 considered 5 different sorts of data sets without considering imports and exports or other aspects of liberalization separately and observed the presence of statistically insignificant association between changes in tariffs and the real trade balance. UNCTAD, 1999 has investigated the impact of liberalized trade on the trade balance for 16 countries for 26 year's period from 1970 to 1995 by using techniques for evaluation of panel data, and concluded to have significant negative association between trade balance and trade liberalization.

In studies related to liberalization of trade in developing countries, utmost consideration has been given in finding out its affect on economic growth performance of export, employment, inequality in wages and the distribution of income not much emphasis has been given to observe the impact of liberalized trade upon imports, the balance of trade and the current account of the balance of payments. These areas are of equal importance for inquiry purpose, because if the growth of imports increases more than exports due to liberalization of trade, this may result in growth constrains in countries, having below the growth productive potential, due to serious implications of balance of payments. It means that on one hand where in the liberalized trade, growth from the supply side is promoted by means of more efficient resources allocation, on the other hand increase in demand may stay constrained unless corrective measure were taken, such as depreciation of currency or deficits financing through sustainable capital inflow, in order to maintain a equilibrium between imports and exports.

4. Empirical Studies

Bown and Crowley (2007) investigated by means of empirical analysis that whether import-restricting trade policy implied by a country could possibly make distortions for the exports of a specific country to other countries. Data for this investigation was based on use of antidumping measures and trade safeguarding remedies by USA over the period of 10 years i.e. from 1992–2001 exercised over the exports of Japanese product to the third countries. A dataset was constructed for the exports of Japan for almost 4800 products to 37 countries for the period under consideration to assess the impact of import barriers by USA, in this way substantially exploited the variation in the products and time of exports of Japan to 3rd countries. The dependent variable taken was growth of other country's import from Japan where as explanatory variables includes change in, antidumping duties (AD) on Japan and on other countries, safeguarding policies, growth of Japanese and other countries GDP, growth of countries openness etc. Statistical techniques used for the purpose of analysis include GMM, fixed effect model and econometric model. Results and approach of this study are constrained by some limitations. The export responses of only a single US trading partner were assessed here. It would be notable to consider that whether US trade policy is having same implications in general on the other trading partners or the trade policy shows some variations on country to country basis.

Bussiere (2013), in this study, aimed to present, with the help of a set of dynamic discrete choice models, that in how much in advance the explanatory variable send signals before the actual anticipated happening of crisis situation. The article examined, using a conditional logit model, the role of country fixed effects in both cases i.e. with the dependence of state and in individual capacity. This study presented results from model having four specifications: static, dynamic, static with fixed effects and dynamic with fixed

effects. The research considers monthly panel data from 1990 to 2001 of 27 countries, consisting of 8 Latin American, 9 Asian and 10 Eastern European countries. Crisis index was taken here as the dependent variable, whereas independent variables such as debt ratio, current account, Govt. budget balance, real exchange rate, lending boom measure, real growth rate and contagions across emerging markets are considered. Early indicators were supposed to detect crises in advance before time seemed to be performing comparatively better if the objective is to forecast the crises in a specific time frame; however, it was difficult to predict the accurate starting date of the crisis. Collectively, the selected economic variables tend to forecast the crises included the growth rate of credit to the private sector ratio of short-term debt to international reserves, contagion from other countries, the over appreciation of the nominal effective exchange rate (with respect to trend).

Calderon, Chong, Loayza (2002) in their study used a wide range of stable macroeconomic data set pertaining to deficits of current account and other variables pertaining to national income, focused on developing economies. Annual panel data of 44 developing countries including, 21 Latin American & Caribbean countries, 5 East Asian and the Pacific, 4 from Middle East and North Africa, 3 South Asian, and 11 Sub-Saharan African was assessed for a period from 1966-94. Statistical techniques such as OLS regression analysis, trend analysis and correlation analysis were used for the purpose of evaluating the data to draw meaningful conclusions out of it. Deficit of current account as a % of gross national disposable income is taken as dependent variable where as independent variables included domestic output growth, public and private savings, real effective exchange rate, terms of trade, black market premium, balance of payment controls, OECD's output growth, and international real interest rate. The results showed that increase in domestic growth, appreciation in real exchange rate and deterioration of terms of trade caused the current account deficit to increase, whereas decrease in international real interest rate creates an increase in the current account deficit. Contrarily rise in the rate of growth of industrialized nations and public saving rates tend to reduce the deficit of the current account.

Chambers and Lopez (1993) compared the positive implications of ad valorem and fixed-price distortions for an open economic setup. The model presented here consists of a basic open economic setup with a single variable factor of production i.e. labour, and two products i.e. agricultural and non-agricultural goods. Production of agricultural commodity had been taken as the fixed factor. The analysis was performed by means of derivative model. This paper addressed significant contradictions between the beneficial impact of ad valorem interventions and fixed-price export protection interventions which the previous studies have ignored to do so. The results expressed that in the case of ad valorem tax, the fall in global price is not as eminent as with the distortion of fixed price due to reduction in the growth of domestic agricultural yield whereas domestic demand rise by more than in the case of fixed-price. This is because the domestic markets were insulated from world-price changes by the fixed-price regime, the elasticity of export supply just tends to determine whether immiserization occurs in case of ad valorem which is not observed in case of fixed-price.

Chernyak, Khomiak and Chernyak (2013) discussed the appearance and evolution of the balance of payments crisis in this paper. For the purpose of this research, data for next 11 Eastern European countries were considered for the period from 2000 to 2012. Exchange market pressure index has been taken as the independent variable where as indicators of the crisis included in the ratio with GDP such as reserves, current account, foreign direct investments, exports, imports, trade balance, monetary base. Econometric techniques such as probit, logit and OLS regression were applied. The result of analysis showed that variation in the share prices was significant for East European countries. It proves that ejection of foreign capital from markets of emerging countries could be a prominent initiator of the balance of payment crisis. The prime purpose in long-term period, is the diversification of the sources of capital's inflow and

maintaining the direction of exports in such a way that will help in minimizing the impact of crisis in the position of balance of payment.

Christiansen, et al. (2009) empirically investigates the external balance of low income countries. For the purpose of analysis data of 134 countries was considered for a period from 1980–2006 for macroeconomic variables namely real exchange rates, current accounts, and net foreign assets. The data set included variety of indicators of these variables. The statistical techniques utilized for analysis of data includes mainly empirical analysis along with OLS regression analysis and unit root test as well. The result of this study explained that, a favorable term of trade tends to rectify the position of current account and appreciate the real exchange rate, but the rise was mainly due to the variation in the price of exports. Some of the initial findings demonstrate that there is dependency of the effect of shocks in income on the current account may be due to the position of initial net foreign assets. Recommendations were given for further research depending on the availability of data of improved quality in order to have better understanding thereof.

Ianchovichina, E. (2004) investigated the duty drawbacks on imported intermediate inputs and investment goods utilized in exports production purpose. An empirical multi-region general equilibrium model was presented in which the implications of reforms in policy are differentiated based upon the orientation of trading firms. The model is useful for the analysis of liberalization of trade in the context of drawbacks of duties. The study undergoes through the investigation of China's WTO accession by employing Version 5 GTAP database (Dimaranan & McDougall, 2002), aggregated to 25 sectors and 20 regions starting from 1997 to post-accession tariffs. the results expressed that failure to account for exemptions of duty will suppose to overstate the rise in aggregate trade flows of China by 40% and welfare of China by 15%. This demonstrates that exemptions of duties in China have substantially reduced the border protection prior to the accession of WTO.

Jeon (2009) empirically investigated the authenticity of Thirlwall's Law both directly and indirectly in China during the period of reforms i.e. from 1979–2002. For the indirect test, firstly a demand function pertaining to aggregate import was estimated for income elasticity of import demand, afterwards, comparison was made between the actual rate of GDP growth with the predicted rate calculated by means of the estimated income elasticity of import demand. In the direct test, Thirlwall's Law was investigated by analyzing the existence of co-integration between rate of growth of GDP and of exports. Econometric techniques such as "bounds test approach" suggested by Pesaran et al. (2001) for co-integration analysis, OLS regression analysis, Analysis of variance (ANOVA) had been utilized for the purpose of analysis. Results of the study showed that in the context of an open economic setup, favorable position of balance of payments allows rapid growth of economy, which, according to Verdoorn's Law, leads towards faster growth in productivity. Moreover it also implied that the foreign demand of Chinese goods played a vital role in the growth of Chinese economy. Therefore a demand-side approach is the reason behind growth of Chinese economy because, the need for the factors of production pertaining to the supply-side such as the progress in technical abilities and growth of labor force are mainly due to the conditions in the demand-side driving the supply-side to meet the demand.

Lane and Perotti, (1998) studied the impact of movements in various constituents of fiscal policy in short-term period on the imports, exports and balance of trade, through a panel data set comprising of 17 OECD countries for a tenure from 1960 to 1995. The independent variables utilized in this study include variables pertaining to fiscal policy such as wage government consumption (CGW), nonwage government consumption (CGNW) and cyclically adjusted labor taxes (TAX). Whereas, ratio of trade balance to GDP is considered as the dependent variable. OLS regression and t-statistics were used as the statistical tools for the purpose of analysis. The results showed that the transformation in government's wage

consumption having significant impact on the external account and the impact gets even stronger under flexible rates of exchange, which is aligned with the operativeness of a short-run transmission mechanism of fixed-price. The results also pointed out that, fiscal policy can play a vital part in the development of reforms designed for the betterment of external account.

Loria and Fujii (1997) in their article aimed to express that the external barriers to the economic growth of Mexico had notably been intensified due to the application of structural reforms for a period covering from 1950 to 1996. Calculation of the external barriers to growth was performed by means of Harrod multiplier of foreign trade. The results showed that, the indicators of external factors hampering growth, particularly in manufacturing domain, had been dramatically intensified during the period considered in this study for the purpose of analysis. Moreover, external restrictions that caused the deindustrialization in the country consequently caused GDP and growth rates to drop, generating trade deficit. Increased level of trade deficit had been financed by means of inflow of short term capital at higher interest rates which was found to be not viable in the medium-term period. So, the sustainable revival of the Mexican economy not only required the expansion of exports, but also the avoidance of demand for imports in excess level.

Mah and Kim (2006) studied the association of macroeconomic variables with several empirical evidences of antidumping duties in Korea. Half yearly data of antidumping duties in Korea taken from the 1st six months of 1987 to the last six months of 2003 had been utilized. The statistical techniques that were used for the purpose of analysis included unit root test, Johansen's co-integration test, error correction model, Augmented Dickey Fuller test. The finding of this study showed that tools of protectionism such as antidumping duties caused the overall economic activities in Korea to slowdown. The implications of antidumping duties despite the level of development of economy in the current time may not be considered optimal for the global trading system. This study express that investigation of antidumping duties may lead towards the reduction of imposing country's national income, It implies that process of implementation of antidumping duties should be carried with cautions through investigation process by the countries planning to impose it.

Malhotra and Malhotra (2008) investigated that whether antidumping (AD) actions in the pharmaceutical industry of India have prevented trade transactions from countries whose name were there for the purpose of dumping. The data consist of all AD petitions initiated in the pharmaceutical industry during the tenure starting from 1992 to 2002 where value and quantity of imports was the dependent variable while trade restrictions (antidumping) and trade diversions were the independent variables. Ordinary Least Square OLS regression technique was used for the purposes of estimation and analysis. The results showed that anti dumping duties resulted in restriction of imports from countries that were having their names in the petition. It was implied that the foremost benefit of protectionist measure was obtained by the domestic producers rather than foreign producers. Furthermore significantly, the results also implied that, this could be a critical issue of concern for consumers, who would have to sustain the load of elevated prices as a consequence of protectionist measures on imports.

Malhotra, Rus, Kassam (2008) analysed the effectiveness of antidumping (AD) duties on the agricultural sector of US for countering trade. Data for investigations of antidumping of U.S., was considered for the tenure of 1990 to 2002. Ordinary least squares estimation, fixed effect and GMM model is used for the purpose of analysis. Results of the study confirmed the presence of vital association between antidumping duties and imports and effectiveness of antidumping duties in the protection of agricultural producers of the U.S. Analysis indicated that antidumping measures resulted in the expected manner by counteracting imports from countries having their names on the petition thus benefiting with deflecting a little trade to countries not having their names on the petition. The occurrence of this whole phenomenon was depended

upon granting of petition and imposition of duties. It is debatable that whether trade remedy laws, specifically legislation pertaining to antidumping, came out to be effective in fulfilling this objective. The investigation in this article is an attempt to provide even more information upon this concern.

Médici and Panigo (2015) analyzed the association of foreign asset formation (FAF) with the terms of trade (TOT) in the nations characterized by unbalanced productive structures (UPS). For the purpose of research monthly data of Argentinean economy from January 2003 to October 2011 has been utilized. Statistical technique used in this research is called Global Search Regression (GSREG) which is a software stata code that allows selection of model automatically for time series, cross-section, and panel data regressions. The results of the analysis showed that, improvements of TOT in UPS is not having any ambiguous impact on the BOP-constrained rate of GDP growth because effects of their favorable balance of trade had been relieved to an even overwhelming level by their adverse impact by means of the capital account. The results depicts a low near to nil effects of TOT on BOP constraints created by way of quasi-rent developed in the export sector of a UPS affirms the existence of a positively favorable relationship in TOT and FAF of emerging countries.

Nwani and Island (2006) investigated the long-run determinants of dynamics of the balance of payments of Nigerian economy for tenure from 1981 and 2002. Econometric techniques such as co-integration and mechanism of error correction were used for the purpose of analysis. The determinants of balance of payments taken in this research included exchange rate, inflation rate, balance of trade, trade openness, real GDP growth, external debt growth and terms of trade. It was derived that all the determinant variables except balance of payment itself, depicts non-stationarity. The results also indicated that balance of payment express co-integration with all the identified determinant variables, suggested that fluctuations in the position of balance of payment in Nigerian economy occurred due to the extent of openness to trade, burden of external debt, movement of exchange rate and domestic inflation. The results demonstrate that a decrease in fiscal deficits, increase in domestic production by means of private investment, inflation management and controlled capital market integration were the steps required to prevent the adverse swings in the position of balance of payment of Nigeria.

Pacheco-López (2005) studied the impact of liberalization of trade pertaining to the mid of 1980s from the liberalization alleged with the North American Free Trade Agreement (NAFTA) on nonoil exports, imports, and the balance of trade in Mexico for tenure from 1970 to 2000 estimated using an autoregressive distributed lag (ARDL) procedure to provide long-run estimates association in the independent and dependent variables. The results showed that trade liberalization in the mid -1980s had a favorable effect upon the performance of export and import growth with the same level, but response of imports came earlier than exports. On the other hand NAFTA showed significant impact on growth of import while having insignificant impact upon the exports due to the degree of the liberalization of trade which has taken place already. In spite the performance of Mexico being one of the leading exporters the considerable fact is the equilibrium between the levels of imports and exports and the level of current account balance of the balance of payments because this is something which have its impact on the creditworthiness of a country, sustainability of growth and the ability to borrow. Trade liberalization must be accompanied with governmental policies which are aimed to coordinate with the industrial and trade policy to achieve both internal and external equilibrium at the same time.

Paulino (2002) analyses the diminishing impact of tariff and non-tariff barriers on the dynamic panel data of 22 selected developing countries pertaining to imports for tenure from 1976–98. TSCS techniques have been used in the assessment of the impact of reforms pertaining to trade on the growth of import on average, and across regions. Primarily in this paper, it was examined as to what extent measures related to trade affect growth of import in developing countries. Import growth had been taken as the dependent variable where as independent variables include import tariff and trade liberalization. The conclusion

provides empirical evidence suggesting that the removal of trade policy distortions significantly affect the growth of import in the positive manner. Consequently due to liberalization of trade, the excessive growth of import put serious stress on policy implications, particularly for the position of balance of payments and balance of trade, because in majority of the cases imports grow faster than exports, resulting in imbalances in trade. A great number of developing countries suffered from balance of payments crises had revealed the extent to which balance of payments positions inhibited growth rates. In most of the cases, trade policy reforms were lacking strategy to promote export. Liberalization should be handled in such a way that a sustainable balance of payments position could be maintained; otherwise it is easy that the benefits obtained by liberalization can be adjusted by losses of real generated resources, for the purpose of corrections in the position of balance of payments.

Paulino and Thirlwall (2004) investigated panel and times series/cross section data to analyze the impact of liberalization of trade on growth of export, import, the balance of trade and payments for a selected sample pertaining to 22 developing countries for a period covering from 1972 to 1997. The variables involved in the study included the rate of export duty (dx) which is the ratio of revenue arising out of export duties to the value of exports and the rate of import duty (or implicit tariff, dm) which is revenue arise from imports in the ratio with the value of import. This study involves statistical techniques such as Hausman test, heteroscedasticity test and correlation analysis. The outcomes of this study showed that liberalization of trade drive to a rapid growth of imports as compared to exports, this could be a critical issue with respect to the position balance of payments of countries that may restrict the growth below the potential of productivity. The liberalization showed positive effect on growth of imports whereas negative effect was observed on the trade balance and balance of payments. These effects are greater in the countries having more protection. Obtaining the correct balance between the growth of import and export in the process of trade liberalization can be as vital as achieving the right sequencing for it.

Samiei (1990) attempted to test for the importance of financial constraints in the determination of the oil-exporting countries' imports. Balance of payments constraint is an important determinant of the imports of a less developed country (LDC) therefore the analysis included less developed countries LDCs and OPEC countries for a sample size consisting of 29 years from 1956 to 1984. The econometric analysis is based on methods of estimating models of markets in disequilibrium. For this purpose discrete and smooth-switching models are estimated and compared. OLS regression had also been used as one of the statistical techniques for the purpose of analysis. The analysis was based on some simplifying assumptions including the complete exogeneity of the oil-exporters' terms of trade, the omission of exchange rates variations etc. The results support quite strongly the importance of financial constraints in determining trade. Although there are certain limitations and computational difficulties in the analysis process nevertheless the fact was strongly established that when the bloc is divided into high-absorbing and low-absorbing subgroups, the former is suggested to have faced financial constraints more often than the latter in the period under consideration.

Wang (2004) assessed the association of countervailing duties (CVD) import tariffs, foreign export subsidies and under imperfect competition. These protectionist measures were imposed with a view to counter the subsidization of foreign export, which hampers the competitiveness of domestic firms, whereas the import tariffs were implied in order to exercise protectionism or for the purpose of revenue generation. The said paper utilizes the quasi linear utility function for the purpose of analysis. The study considered the trade policy system in which import tariff were determined on priority basis as compared to the foreign export subsidies and the determination of CVD takes place subsequent to the subsidization of foreign export, resultantly CVD determination can be segregated from the import tariff. In the earlier studies the CVD was expressed as a constituent of the import tariff whereas, actually the CVD and the import tariff have their own different purposes. To separate determination of CVD from the import tariff

and assess the function of CVDs in trade policies, This study expressed that the determination of import tariff takes place prior to the export subsidy, because the optimal level of CVD is dependent on the existing import tariff level; the position of an optimal CVD of more than 100% may occur if the current import tariff level has been forced to fall to a significantly low level, for instance as per the requirement of the GATT. Secondly, the optimal level of CVD can/ cannot determent the level of export subsidy as furnished by the foreign government when the current level of import tariff is significantly high/ low. Thirdly, the optimum level of import tariff is so outrageous that the optimum level of CVD becomes zero and thus driving the subsidization of foreign export to commence. Finally, upon examination of the impact of export policies implemented by the exporting countries for the purpose of determination of CVD, it turned out that a reduction in the level of subsidy of an exporting country confirm the chances of imposition of a CVD upon the exporter residing in another country where no corresponding actions were taken by the government.

Weixian (1999) studied the dynamic nature of association found in balance of trade of China with its macroeconomic variables such as real exchange rate, domestic and foreign output, and domestic and foreign supply of money for the tenure from 1986 to 1996. The (ADF) unit root test and Granger Cointegration test were used for the purpose of estimation and analysis. The results of the tests and estimation confirmed the presence of J-curve in China. Devaluing the local currency pump up the import prices in comparison with the exports and so causing the improvements in the trade balance. There could be deterioration of the balance of trade at initial stage, but, gradually, increase in exports and imports elasticities elevates the expectations of improvement of balance of trade. Balance of trade of China does not show co-integration with a variety of variables which include the exchange rate. China began liberalization of its exchange rate in order to get in harmony with the international markets; exchange rate policy had been aimed to maintain the currency value. Thus, China needs to improve the quality of its export products along with reduction in its production costs and further strengthen its international trade strategy in order to have a balance in its foreign trade.

Yanikkaya (2003) studied the impact of growth of a large number of measures having on openness to trade. Panel data, for more than 100 developing and developed countries, was considered for application of cross-country regressions for tenure from 1970 to 1997. Trade openness was measured into two vast categories: one is trade volumes and other is trade restrictions. Measures of trade openness consist of variables such as U.S. trade openness, population densities and trade openness itself. Whereas, measures of trade restrictions include bilateral payments arrangements, total import and export duties, taxes on international trade and quantitative limitations on payments. Statistical outcomes for various measures for volumes of trade depict the presence of a significant favorable association between openness to trade and level of growth. Statistical outcomes for trade barriers showed contradiction with the conventional view of impact of escalation of restrictions to trade, which pointed out towards the existence of an unfavorable association between growth and barriers to trade. The said outcomes are fundamentally derived from developing countries so, they are in line with the predictions as mentioned in the empirical reviews pertaining to growth claiming that in some circumstances, trade restrictions may actually benefit the developing countries.

5. Data and Methodology

For analyzing the effect of international trade and trade duties on current account balance of the balance of payment of N-11 countries following estimation model was used.

$$CAB = \alpha + \beta_1 IMPT + \beta_2 EXPT + \beta_3 TOIT + \beta_4 CID$$

Where,

CAB = Current account balance of the balance of payment
IMPT = Import of goods and services
EXPT = Export of goods and services
TOIT = Taxes on international trade
CID = Custom and import duties

Data spanning over 27 years from 1990 till 2016 for next eleven (N-11) countries which includes Bangladesh, Egypt, Indonesia, Iran, Mexico, Nigeria, Pakistan, Philippines, Turkey, South Korea and Vietnam was obtained from the World Bank. For cross section dependence CD-test was applied and CIPS second generation panel unit root test was used to check for the order of the series and later cointegration test was performed for testing of the long-run association between the studied variables.

Panel regression analysis has been performed by using fixed or random effect model which depends upon the outcomes of Hausman test. This test is used to examine the extent of connectivity between dependent and independent variables or how well the independent variables be able to explain the dependent variable.

5.1 Causality Analysis

Causality analysis is used for assessing the relationship exists between dependent and independent research variables whether it is bi-directional or uni-directional.

Ho: Variable A does not granger cause on variable B.

H1: Variable A does granger cause on variable B.

Prob value of the results decides the acceptance or rejection of any of the given hypothesis. Value on or below 10% is considered significant and results in acceptance of alternate hypothesis H_A and rejection of null hypothesis H_0 . Opposite will be the case when the prob value turned out to be more than 10%.

5.2 Research Variables and their Operational Definition

There are basically three research variables used in this study, one is international trade having two components namely import of goods and services and exports of goods and services (both taken as % of GDP), second is international trade duties having two components i.e. taxes on international trade (taken as % of revenue) and custom and other import duties (taken as % of tax revenue) and the last one is current account balance of the balance of payments (% of GDP). All these variables are defined as follows.

5.3 Current Account Balance

The current account balance is one of the two constituents of the balance of payments of a country whereas the second component is the capital account thereof. It composes of the balance of trade (resultant net balance after subtraction of total value of imports from exports of goods and services), the net factor income (resultant net balance after subtraction of payments made to foreign investors for domestic investments from the return on investments generated abroad and obtain by local citizens) and net cash transfers, all these constituents are accounted in the local currency unit (LCU). Positive balance or surplus of current account depicts that the country becomes a net creditor for the rest of the world whereas opposite is the case with negative balance or deficit of current account. The ratio of the current account balance to the Gross Domestic Product (or % of GDP) serves as an important indicator of the extent competitiveness of the country on international level.

5.4 International Trade

International trade represents the interchange of goods, services and capital across the international borders and territories. Any product been sold to the international market is referred to as export inversely any product that has been bought from the international market is referred to as an import. Imports and exports of goods and services of a country are the constituents of its current account of the balance of payments.

5.5 International Trade Duties

International Trade duties are a form of tax collected on International trade i.e. imports and exports of certain goods, services or transactions by the government of a country generally through customs authorities. It is by and large calculated according to the value of the goods that are imported or exported. In line with the context, trade duty may also be observed as customs duty, tariffs and taxes on imports, export duties etc.

5.6 Descriptive Statistics

Table 4.2

	CAB	IMPT	EXPT	TOIT	CID
Mean	0.026	29.744	28.388	7.179	8.891
Median	-0.540	25.340	25.260	4.060	4.050
Maximum	32.540	91.060	93.620	32.560	43.240
Minimum	-16.550	0.000	0.000	0.000	0.000
St. Dev.	5.147	15.041	14.996	8.443	11.193
Observations	297	297	297	297	297

Source: Author's estimation

In the above table 4.2, the average of each variable is represented by its mean. In this study three variables namely current account balance (CAB), import (IMPT) and export (EXPT) of goods and services are expressed in terms of % of GDP whereas taxes on international trade (TOIT) is represented by % of revenue and custom and import duties (CID) is expressed in terms of % of tax revenue. The mean of CAB is 0.026 which denotes a surplus of 0.026% in the overall CAB of N-11 countries. Similarly, IMPT stands for 29.74% of GDP, EXPT at 28.388 % of GDP, TOIT at 7.179% of revenue and CID at 8.891 % of tax revenue.

5.7 Panel Unit Root Test

Table 4.3 Summary of unit root tests

Method	I(0)		I(1)	
	C	C & T	C	C&T
CAB				
Levin, Lin & Chu t*	0.001	0.087	0.000	0.000
Im, Pesaran and Shin W-stat	0.000	0.005	0.000	0.000
ADF - Fisher Chi-square	0.003	0.017	0.000	0.000
PP - Fisher Chi-square	0.011	0.009	0.000	0.000

IMPT				
Levin, Lin & Chu t*	0.116	0.123	0.000	0.000
Im, Pesaran and Shin W-stat	0.199	0.046	0.000	0.000
ADF - Fisher Chi-square	0.145	0.053	0.000	0.000
PP - Fisher Chi-square	0.202	0.069	0.000	0.000
EXPT				
Levin, Lin & Chu t*	0.637	0.648	0.000	0.000
Im, Pesaran and Shin W-stat	0.817	0.349	0.000	0.000
ADF - Fisher Chi-square	0.681	0.376	0.000	0.000
PP - Fisher Chi-square	0.628	0.267	0.000	0.000
TOIT				
Levin, Lin & Chu t*	0.020	0.446	0.000	0.000
Im, Pesaran and Shin W-stat	0.044	0.296	0.000	0.000
ADF - Fisher Chi-square	0.141	0.147	0.000	0.000
PP - Fisher Chi-square	0.055	0.201	0.000	0.000
CID				
Levin, Lin & Chu t*	0.229	0.970	0.020	0.457
Im, Pesaran and Shin W-stat	0.240	0.816	0.000	0.000
ADF - Fisher Chi-square	0.462	0.879	0.000	0.000
PP - Fisher Chi-square	0.251	0.599	0.000	0.000

Source: Author's estimation

The results of above table 4.3 exhibit the summary of 4 methods of unit root test for both intercept and trend & intercept at level and first difference at lag 1. The results are based on the prob values of all 4 methods which should be less than the level of 10% in order to be considered as significant enough to reject the null hypothesis H_0 which claims that data has a unit root problem i.e. having trends and is not stationary. Here the values show that out of all 5 series/ variables, only CAB has stationary results at level, both on intercept and trend & intercept, but as we moved towards 1st difference the remaining variables also show stationary results at trend and trend & intercept favoring the acceptance of alternative hypothesis that the data is stationary and now it has not contain any trends or unit root problem thus rejecting the null hypothesis. The results of unit root test give indication that the series of variables might exhibit a valid long term association and so in the next step co-integration between variables is tested.

5.8 Panel Co-integration Test

Table 4.4 – Pedroni's co-integration test results

AR coefs	Individual	Individual intercept &	No intercept
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	intercept	individual trend	or trend
Panel	Prob values		
v-Statistics	0.457	0.844	0.348
rho-Statistics	0.269	0.581	0.267
PP-Statistics	0.001	0.000	0.004
ADF-Statistics	0.002	0.000	0.008
Weighted Panel	Prob values		
v-Statistics	0.718	0.969	0.584
rho-Statistics	0.459	0.854	0.448
PP-Statistics	0.006	0.010	0.020
ADF-Statistics	0.008	0.000	0.021
Group	Prob values		
rho-Statistics	0.850	0.981	0.807
PP-Statistics	0.015	0.011	0.015
ADF-Statistics	0.019	0.000	0.018

Source: Author's estimation

In 1999 and 2004, Pedroni recommended the testing of both parametric and non-parametric long run variances pertaining to kernel estimation. The Pedroni's co-integration test has been implied because it allows all three specification i.e. No intercept or trend, individual intercept, individual intercept and individual trend whereas, Kao test allows individual intercept only. In the above table 4.4, null hypothesis (Ho) for all the eleven testing variants at 10% level of significance is that there is no long term co-integration present between research variables. Conversely, alternate hypothesis (HA) exhibits the presence of a long term relationship between the variables.

The above table 4.4 express that the prob value of majority of the above variants, at all three specifications, is less than the 10% level of significance which affirms the acceptance of alternative hypothesis that there is presence of long term association within the research variables and they are co-integrated with each other. With these results we can move towards further analysis.

5.9 Durban-Wu-Hausman test

Table 4.5

	Chi-Sq. Statistics	Chi-Sq. d.f.	Prob.
Cross section random	0.000	4	1.0000
Period random	0.000	4	1.0000

Source: Author's estimation

The above table shows that prob value of cross section random is above 10% level of significance therefore null hypothesis gets accepted here and alternative hypothesis gets rejected which represent that

random effect model would be more suitable for the purpose of further analysis rather than fixed effect model.

5.10 Panel regression analysis

Table 4.6

Variable	Coefficient	t-Statistic	Prob.
IMPT	-0.663	-11.474	0.000
EXPT	0.693	13.270	0.000
TOIT	-0.008	-0.129	0.897
CID	0.021	0.480	0.631
C	-0.053	-0.058	0.953
R-square	0.619	Adjusted R-Square	0.559
F-Statistics	10.414	Prob (F-Statistics)	0.000

Source: Author's estimation

The above table 4.6 demonstrates that significance of each research variable by means of their respective prob values. The values are significant at 10% level of significance or below it. Here prob values of IMPT and EXPT represent to be significant which depicts material impact of these two variables upon current account balance. On the other hand prob values of TOIT and CID turned out to be greater than 10% level of significance which illustrate that they are not having considerable impact upon the CAD. The signs of coefficients show the nature of relationship between independent and dependent variables. In the above table IMPT and TOIT are expressing negative relationship with CAB whereas the other two variables i.e. EXPT and CID are showing positive association with CAB.

The value of R-square demonstrates the extent of movement caused in the value of dependent variable by the reason of independent variable. The value of R-square in the above table represent that 61.9 % of variation in the CAB is explained by the four independent variables. Further on, the value of adjusted R-square i.e. 55.9 % exhibits the same thing but it is adjusted for the number of variables and here it only slightly differs from the value of R-square because of less number of research variables used in this study. The value of prob (F-Statistics) depicts that in combination, all independent variables are having a significant impact on the dependent variable.

5.11 Panel causality analysis

Table 4.7 Granger causality test results

Null Hypothesis:	F-Statistic	Prob.
IMPT does not Granger Cause CAB	0.844	0.359
CAB does not Granger Cause IMPT	3.245	0.072
EXPT does not Granger Cause CAB	1.416	0.234
CAB does not Granger Cause EXPT	6.151	0.013
TOIT does not Granger Cause CAB	0.036	0.848
CAB does not Granger Cause TOIT	0.212	0.645
CID does not Granger Cause CAB	0.614	0.433
CAB does not Granger Cause CID	0.504	0.478
EXPT does not Granger Cause IMPT	6.539	0.011

IMPT does not Granger Cause EXPT	15.254	0.000
TOIT does not Granger Cause IMPT	1.299	0.255
IMPT does not Granger Cause TOIT	0.002	0.959
CID does not Granger Cause IMPT	0.085	0.770
IMPT does not Granger Cause CID	0.289	0.591
TOIT does not Granger Cause EXPT	2.476	0.116
EXPT does not Granger Cause TOIT	0.095	0.757
CID does not Granger Cause EXPT	1.038	0.309
EXPT does not Granger Cause CID	1.049	0.306
CID does not Granger Cause TOIT	0.470	0.493
TOIT does not Granger Cause CID	0.025	0.874

Source: Author's estimation

The above table 4.8, pertaining to Granger causality analysis, tends to describe the existence of bi-directional causality between dependent and independent variables. The result demonstrates that at 10% level of significance and lag 1, except CID and TOIT, CAB Granger cause remaining two research variables i.e. a uni-directional association exist between CAB & IMPT and CAB & EXPT, beside it, a bi-directional association exists between IMPT and EXPT.

6. Conclusion

This study has been carried out with an intention to assess the impact of international trade and trade duties on current account balance of the balance of payment of N-11 countries. For the purpose of analysis, collection source of the data is the data bank of the World Bank from 1990 to 2016 for all N-11 countries. Findings from previous literature reviews implicate that current account balance is linked with several economic variables such as exchange rate, terms of trade, quantity and price of import & exports and trade duties. These variables are economic policy tools which take action to regulate the level of current account balance of an economy because current account balance holds great importance in identifying the economic health and general outlook of a country. Paulino and Thirlwall (2004) reported that liberalization of trade or leniency in trade formalities drive towards rapid growth of import and export both but import grows by more than the export which exhibit negative impact on the economy by impairing the positing of current account balance. Paulino (2002) also suggested that balance should be maintained in the import and export of an economy for the sustainability of the current account balance otherwise the benefit received from exports will be consumed in rectifying the adverse impact of imports on the current account balance. A number of studies concluded that trade restrictions are helpful in rectifying the adverse position of the current account balance but on the other hand hampering the growth of the country implying trade barriers. In the current study under consideration, several econometric techniques have been performed for the purpose of analysis and drawing out some meaningful conclusion thereof. Firstly, unit root test was performed to check the stationary characteristics of the data and it was obtained by the summary of all 4 methods namely, Levin, Lin & Chu t, Im, Pesaran and Shin W-stat,

ADF - Fisher Chi-square, PP - Fisher Chi-square, that the data is stationary and do not contain unit root problem at 1st difference. Afterwards, panel co-integration test was performed to evaluate the existence of long term association between the research variables and found out that variables are having long term relationship with each other. After that Hausman test was performed to find out whether fixed or random effect model would be suitable for further analysis and the results came out in the favour of random effect model which gives the signal to proceed with the panel regression analysis the result of which, confirmed the significance of IMPT and EXPT for effecting the CAB unlike TOIT and CID which found to be not having significant impact upon the CAB. Last but not the least panel causality analysis was performed via Granger causality analysis and obtained the results that except TOIT and CID, CAB is uni-directionally effecting the remaining two variables i.e. IMPT and EXPT, moreover a bi-directional relationship also found between IMPT and EXPT. The overall result of the analysis is sufficient to such extent enabling the establishment of a reasonable conclusion that there is association between CAB and the other research variables in some way or the other. But the important point to be noted here is that CAB turned out to be the ruling factor here and the other factors are adjusted according to the position and direction of the CAB which means that CAB itself is the prime indicating factor which is necessary to be considered before making any sort of changes in the regime of international trade of a country.

7. Recommendations

The prime cause this paper is to identify the impact of international trade and trade duties on current account balance of N-11 countries. The group of N-11 countries included countries like South Korea, Mexico, Turkey, Iran and Pakistan, which are considered as rapidly developing economies having promising economic potential. Besides other internal and external factors, current account balance is one of the main indicators affecting the overall volume and quality of international trade of these countries. Adverse current account balance could be a critical problem for the economies of N-11 countries therefore following recommendations can be given for rectification of current account balance in order to smooth out the international trade process of these countries.

1. First and foremost recommendation is that there should be balance between imports and exports of these countries. Excess of any one of them could be hazardous for the economic health of the country (Paulino 2002). Too much import is harmful for domestic industries and will direct the local consumption towards imports. Too much export is also harmful for domestic consumers because it results in shortage of goods and services for local consumption causing domestic inflation.
2. Trade barriers are also an option for the rectification of current account deficit. Trade barriers include duties, taxes and quota etc, but caution should be applied before applying any sort of trade barrier because there are great chances that the implying country may have to face the retaliation in this regard and it may hamper the economic growth of the country (Mah and Kim, 2006).
3. Devaluation of local currency is the most common and comparatively easy to implement technique used by many economies around the world which help in recovering the adverse position of the current account balance. Devaluation of local currency causes exchange rate gap to increase with respect to other currencies which makes the export more profitable and imports more expensive and so directing the inward flow of foreign exchange which gradually improves the position of the current account balance (Weixian, 1999).
4. Price control can be considered as a significant policy tool for rectification of current account deficit because when domestic general price level decreases it will shift the local consumption from imported products towards domestic goods and services which on one hand relieves the pressure of imports and on the other hand provide the availability of low cost raw material for exports. Thus the increase in exports and decrease in imports will result in improvement in the position of current account balance.

5. It is highly recommended for the developing countries to conduct smart trade with the developed countries in such a way, to export those goods and services in whose generation they are comparatively competent, in exchange of latest technology and techniques which will not only improves their quality of exports but also enables them to provide better quality products domestically which gradually shifts consumer preferences towards local goods rather than imported goods.

8. Future Recommendations

In this study, impact of trade and trade duties has been assessed over current account balance with the help of 4 constituents of these two prime variables, due to time and resource constraints. Practically there are lot more other variables, such as exchange rate, interest rate, price controls, terms of trade and other economic policy tools, which effect the current account balance in some way or the other so they also need to be accounted for on a extended scale in order to understand the true dynamics of the current account balance. Moreover, availability of complete and correct data is also a challenge for the purpose of achieving results which can be genuinely translated to reflect the true position of the current account balance. There are data constraints with respect to developing countries which restrict the research on many of their domains. If there is possibility for the availability of data from their local and internal sources it would be a major achievement in connection with the assessment of their socio economic problems and to drive remedies thereof because lots of researches are available in context with the developed countries where as developing countries lags behind in this aspect due to unavailability of adequate data.

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