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An Econometric Analysis of the Balance of Payments of Bangladesh

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Abstract:
Balance of payment plays the most important role in a country's economy. As a developing country our performances are not satisfactory. The objective of this analysis is to develop some idea about the balance of payments of Bangladesh. Trade liberalization could lead to faster import growth than export growth and hence the supply side benefits may be offset by the unsustainable balance of payment position. This study uses 36 year observation of GDP, import, export and exchange rate of Bangladesh to estimate their effect on trade balance. Our conclusion is that Bangladesh should relax restrictions on imports more slowly than barriers to exports.
Keywords: Trade balance, Export, Import, Terms of trade, GDP, Exchange rates.

Introduction:
Balance of payment is a statistical statement designed to provide for a specific period of time a systematic record of an economy's transactions with the rest of the world. Its major components are the current account and the financial account. The spending of foreign currency is debit and it is a negative item. It a transaction earns foreign exchange for the nation, it is recorded as a plus item and it is a credit. Generally imports are debits and exports are credit[1].

If credits are more i.e. exports are more than it is a positive sign for the economy and it is known as favorable balance of payment. If debits are more i.e. imports are more than it is a negative sign for the economy and it is known as unfavorable balance of payment. Bangladesh has an unfavorable balance of payment for many years due to dependency on imports.

A part from dependency on imports there are some other reasons:

- Global Recession since 2008.
- Deteriorating law and order situation which stops investment.
- Slow growth of production.
- Low exports
- Electricity shortage/Mismanagement which result in low crops.
- Energy crisis causing low output and closure of many industrial units which reduces the exports.
- Political instability.
- Fiscal policies.
- Trade restrictions in developed countries.
- Limitless Export of primary commodities.
- Depreciation of Bangladeshi Taka.
- Inflation.
- Low foreign exchange remittances.

Balance of payments:
A balance of payments (BOP) sheet is an accounting record of all monetary transactions between a country and the rest of the world. These transactions include payment for the country's exports and imports of goods, services and financial capital, as well as financial transfers. The BOP summaries international transactions for a specific period, usually a year and is prepared is a single currency, typically the domestic currency for the country concerned. Sources of funds for a nation such as exports or the receipts of loans and investment are recorded as positive or surplus items. Uses of funds, such as for imports or to invest in foreign countries, are recorded as a negative or deficit.

[1] Carbaugh, R. J., 2004. International Economics, 6th Edition.

When all components of the BOP sheet are included it must balance that is, it must sum to zero, and there can be no overall surplus or deficit. For example, it a country is importing more than it exports, its trade balance will be in deficit, but the short fall will have to be counter balance in other ways- such as by funds earned from its foreign investment, by running down reserves of by receiving loans from other countries.

While the overall BOP sheet will always balance when all types of payments are included, imbalances are possible on individual elements of BOP, such as the current account. This can result in surplus countries accumulating hoards of wealth, while deficit nations become increasingly indebted. Historically there have been different approaches to the questions of how to correct imbalance and debate on whether they are something governments should be concerned about. With record imbalances held up as one of the contributing factors, to the financial crisis of 2007-2010, plans to address global imbalance are now high on the agenda of policy makers for 2010.

An actual balance sheet will typically have numerous sub headings under the principal divisions. For example, entries under current account might include:

- Trade – buying and selling of goods and services.
- Exports – a credit entry.
- Imports – a debit entry.
- Trade balance – the sum of exports and imports.
- Factor Income – repayments and dividends from loans and investments.
- Factor earnings – a credit entry.
- Factor payments – a debit entry.
- Factor income balance – the sum of earnings and payments.

Especially in older balance sheets, a common division was between visible and invisible entries. Visible trade recorded imports and exports of physical goods (entries for trade in physical goods excluding services is now often called the merchandise balance). Invisible trade would record international buying and selling of services and sometimes would be grouped with transfer and factor income as invisible earnings.

Objectives of the study:

In Bangladesh import, Export, exchange rate, are the most important economic variables in recent times as it helps in balancing of balance of payment. The world is getting globalized. It has both good and bad effects on an economy. But every developing and least developed country is concerned about it and tries to take part in competition and to achieve expected growth and development. The key objectives of the study are as follows:

- To find out the impact of terms of trade on trade balance.
- To find out the impact of GDP and exchange rate on trade balance.
- To show the impact of trade liberalization on trade balance and balance of payment.
- To show the impact of import liberalization and exchange rate on growth.
- To suggest policy measures for the improvement of trade policy.

Review of Literature:

Most of literatures were found in the miniature articles forms on same partial aspects of balance of payment. On the basis of information, collected from the existing articles, an attempt has been made to make an overview of the existing literature.

Developing countries like Bangladesh should relax restrictions on imports more slowly than barriers to exports, This is because it takes longer for exporters to respond to trade liberalization than it does for imports to flood in, potentially causing seriously disruptive balance of payments difficulties[1]**.**

This study is the first major attempt to estimate in a rigorous and systematic way the impact of trade liberalization not only on export growth but also on import growth, the trade balance and the balance of payments. Previous studies have ignored the fact that if liberalization leads to a flood of imports, the balance of payments consequences may seriously disrupt economies because deficits cannot easily be financed.

[1] Hossain, M. A, 2006

Hossain and Alauddin (2005) examine the process of Bangladesh's trade liberalization and its impact on the growth and structure of exports, imports, GDP and other macroeconomic variables with particular emphasis on export. By using econometric investigation based on the ARDL and the ARDL co-integration techniques they empirically found trade liberalization has had a positive impact on the growth, that is, both anti-export bias reduction and import-GDP ratio have significantly impacted on exports in the long run.

Balance of Trade and Bangladesh Economy:

The economy of Bangladesh is constituted by that of a developing country. Its per capita income in 2008 was est. US$ 1500 (adjusted by per chasing power parity). According to the International Monetary Fund (IMF) Bangladesh ranked as the 48^{th} largest economy in the world in 2009, with a GDP of US$ 256 billion. The economy has growth at the rate of 6-7% p.a. over the past few years. More than half of the GDP belongs to the service sector, nearly half of Bangladesh are employed in the agriculture sector.

Remittances from Bangladeshis working overseas, mainly in the Middle East are the major source of foreign exchange earnings; exports of garments and textiles are the main sources of foreign exchange earnings. GDP's rapid growth due to sound financial control and regulations has also contributed to its growth. However, foreign direct investment is yet to rise significantly. Bangladesh has made major strides in its human development index[1].

Methodology of the study:

There are many components that affect the trade balance of an economy and Balance of payment also has many indices. The effects of trade balance can be checked by different ways. In this paper we will examine the effect of some variables especially Balance of payment that effect trade balance by econometric method. The methodology and description of data are as follows:

To explain the influence of balance of payment and other factor on trade balance of Bangladesh we use "Autoregressive model" the sample period for investigation is "1972/73 to 2007/08. The empirical study will employ annual secondary data collected from different sources and they are time series data.

For all types study reliability of data is a crucial issue. The statistical data base system is not strong in our country as a developing country. Careful attention was given while compiling printed materials of the BOI, different government institutions, concerned ministries and concerned corporate offices, research journals, ADB data and statistics, websites and all other sources. All these sources of data are recognized and accepted by all and the provided information has been used widely in the country. So data and information of these sources incorporated in this analysis are reliable.

Empirical Analysis:

Our model is an autoregressive model which is a lin- log function as follows:

$$TB_t = \beta_1 + \beta_2 Ln(TT_t) + \beta_3 Ln(Y_t) + \beta_4 Ln(EXR_t) + u_t$$

We took the logarithm value of all variables except trade balance (TB_t) by using an econometric program, SPSS (Version 14.0), than we have run OLS (Ordinary least square) method.

Because of this study uses the time series data, so Unit Root Test and Co-integration test should be checked out. But the sample size is not large enough to test co-integration as well as unit root test. That's why Unit Root Test and co-integration test are not considered in this study. Estimated results with ordinary least square method has been reported in Table (1):

[1] Asian Development Bank (ADB), (2006)

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Table-1: Regression Results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	22408.010	4263.180		5.256	.000	13724.197	31091.824
	LnTT	1901.002	210.301	1.630	9.039	.000	1472.633	2329.372
	LnGDP	-1706.845	335.451	-.857	-5.088	.000	-2390.135	-1023.554
	LnEXR	-1274.211	199.359	-1.666	-6.392	.000	-1680.292	-868.130

Dependent Variable: TB

From the table-1 it can be said that the estimated coefficients have all expected sign. The coefficient of the terms to trade is 1901.002 implying that a one percent increases of in terms of trade increases the trade balance by 1901.002 percent. Similarly a one percent increase in GDP decreases the trade balance by 1706.845 percent. Again, a one percent increase in exchange rate decrease the trade balance by 1274.211 percent. Here, the `t' value of the coefficient of terms of trade is 9.039, which is significant, that is clear that of terms of trade increase trade balance also increase. Similarly the't' value of the coefficient of GDP is -5.088, which is significant, that is if GDP increase trade balance decrease.

Again, the't' value of the coefficient of exchange rate (EXR) is -6.392, which is significant, that is if exchange rate increase, the trade balance decrease. If all other variables remaining constant, the estimated regression equation is of as follows;

$$TB_t = 22408.010 + 1901.022TT_t - 1706.845Y_t - 1274.211\,EXR_t$$

Table-2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.867(a)	.752	.729	246.02520	.752	32.426	3	32	.000	1.010

a Predictors: (Constant), LnEXR, LnGDP, LnTT

b Dependent Variable: TB

From the table-2 it can be said that the fitted line is reasonably good, where the goodness of fit, R^2 value is 0.752. That is, almost 75.2% of the variation in the trade balance (TB) in Bangladesh is explained by terms of trade (TT), GDP (Y) and exchange rate (EXR). The adjusted R^2 is 0.729 (R^2). The value of d-statistic is 1.010. For n = 36 and k = 3 Durbin-Watson statistic d_L = 1.295 and d_U = 1.654 at 5% level of significance. Since $d < d_U$, so there is statistically significant evidence of positive autocorrelation.

Table-3: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	5888048.053	3	1962682.684	32.426	.000
	Residual	1936908.810	32	60528.400		
	Total	7824956.863	35			

a) Predictors: (Constant), LnEXR, LnGDP, LnTT b) Dependent variable: TB

According to table-3 the value of the F – statistic is 32.426, while the critical values for F are 3.32 at 5% and 5.39 at 1% level of significance which indicates that R^2 is statistically significant. That is the estimated equation is significant

Conclusions and Policy Implications:

The Most successful countries are those where import restrictions have been relaxed more slowly than barriers to exporting. The International Monetary Fund, World Bank and the world trade organization should pay much more attention than they do at present to the balance of payments consequences of trade liberalization when they design their liberalization program. Bangladesh should relax restrictions on imports more slowly than barriers to export. This is because it takes longer for exporters to respond to trade liberalization than it does for imports to flood in, potentially causing seriously disruptive balance of payments difficulties.

In Bangladesh researches find that on average, export growth has increased less than import growth leading to an increase in the trade deficit – enough to trigger financial crisis. The adjustment necessary to rectify the trade deficit has decreased GDP growth below what it otherwise would have been if a balance between export and import have been maintained. These results have important policy implications for the sequencing of trade liberalization to keep a balance between export and import so as to avoid balance of payment crisis. This sequencing is as important as the sequencing of internal and external financial liberalization.

Future expectations:

- Foreign direct investment (FDI) may increase if there is political stability and continuation at policies.
- If the IMF, World Bank and Asian Development Bank release their loans for Bangladesh as promised, than our balance of payment may show some improvement.
- Friends of Bangladesh have promised significant monetary support. It is realizes than it will have a positive effect.
- Imports are expected to decrease. If it happens it will have a positive effect on balance of payment is relying on foreign element and support. If it realizes than balance of payment deficit would decrease, otherwise its future look bleak.

Suggestions:

- Bangladesh must increase its production so that surplus can be exported.
- Bangladesh doesn't need to enter IMF and World Bank programs.
- New water Reservoirs need to made.
- Pro Active Export policy and better marketing of surplus goods.
- Electricity and Gas crisis needs to be solved urgently so that open mills and factories give more production and closed units open again.
- Bangladesh needs a leadership with competence, very strong nerves, clean understanding of the issues and psyche of the other side of the table, ability to negotiate with the super powers and come out with a most suitable package.

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