



THE IMPACT OF GLOBAL ECONOMIC INTEGRATION IN REDUCTION OF INCOME INEQUALITY IN DEVELOPING COUNTRIES: EVIDENCE FROM BANGLADESH

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ABSTRACT

Economic Integration is the core corner of Globalization which has effect on inequality and poverty specially in developing countries. This paper focus on income inequality evidence from Bangladesh using one of the major sectors of Globalization (i.e. Economic Integration). The researcher conducted Time series data and KPSS test to identify the units root among the representative variables and the Vector Error Correction Model to tie the short-term behavior of the variables and the Johansen-Juselius (1990) maximum likelihood approach to assess the presence of cointegration of the variable which reveals the long-term link of the variables. We have found a positive and beneficial capital labor ratio and output labor ratio. Foreign Direct Investment (FDI) output ratio shows a negative impact on output labor ratio. Furthermore, we have found negative relationship between income distribution and real GDP, openness, regime dummy and FDI output ratio which means managed floating exchange rate contributing to increase inequality.

KEYWORDS: Globalization, Trade Openness, FDI, Income Inequality, KPSS, GDP, floating exchange rate, Bangladesh.

JEL Classification: F14, F21, F62, C22, O15

I. INTRODUCTION

Globalization is not a new phenomenon, there are three waves of modern globalization, the first of which started more than 100 years ago and it was beneficial mostly for Africa, Asia, and Latin America. Unlike the first wave, the second wave occurs in the favor of developed nations, such as European, North American countries, and Japan, as well¹. From an economics standpoint, globalization is the unrestricted flow of capital, products, and services beyond national boundaries.

Global Economic Integration is a major part of Globalization. However, the consequences of Economic integration through Globalization bring some important question in case of quality of growth.

According to Heshmati (2003), there is significant variation in the extent of the globalization process over time and between nations and regions, which leads to development disparities. This highlights the need for research to identify the causes of these disparities and quantify their scope and effects. Since the start of the 1980s, a number of developing nations have opened their economies to global markets and pursued trade liberalization. The controversial issue is whether this process contributing to widening the income disparities within the developing countries or not. Within-country inequality has increased in several emerging nations since the 1980s. The widening wealth disparity has occurred at the same time that nations have become more globally exposed. Within-country inequality has increased in several emerging nations since the 1980s.

China's income disparity has remained stubbornly high in recent years. China's income disparity is comparable to that of Latin American nations like Mexico, which have comparatively high levels of inequality. Only a few Asian nations are included in this group, including Nicaragua and Peru, however they are still below Brazil and Honduras. Dobson and Ramlogan (2008) provided some evidence that the idea of Kuznets curve is consistent in case of Latin America, that is Inequality rises until a certain degree of openness is achieved, at which point it starts to decline.

In this paper researcher have used Labor productivity and Income Inequality as dependent variable and measures them by using Output-Labor Ratio and Gini Coefficient respectively.

Now researcher represents the trend of Labor Productivity and Income Inequality in Bangladesh using respective data from 1977-2010 using Figure 1 Labor productivity or output-labor ratio (Y/L) refers the productivity of labor which can be expressed as the ratio of output to labor i.e. output per worker or as output-labor ratio (Y/L), while Gini coefficient (following the name of Corrado Gini, an Italian statistician who originated this metric.) represents the degree of income inequality we use here. A popular indicator of inequality, the Gini coefficient ranges from 0 to 100. (Higher value reflecting higher inequality and lower value indicate more equality).

FIGURE 1 : TREND OF LABOR PRODUCTIVITY AND INCOME INEQUALITY IN BANGLADESH

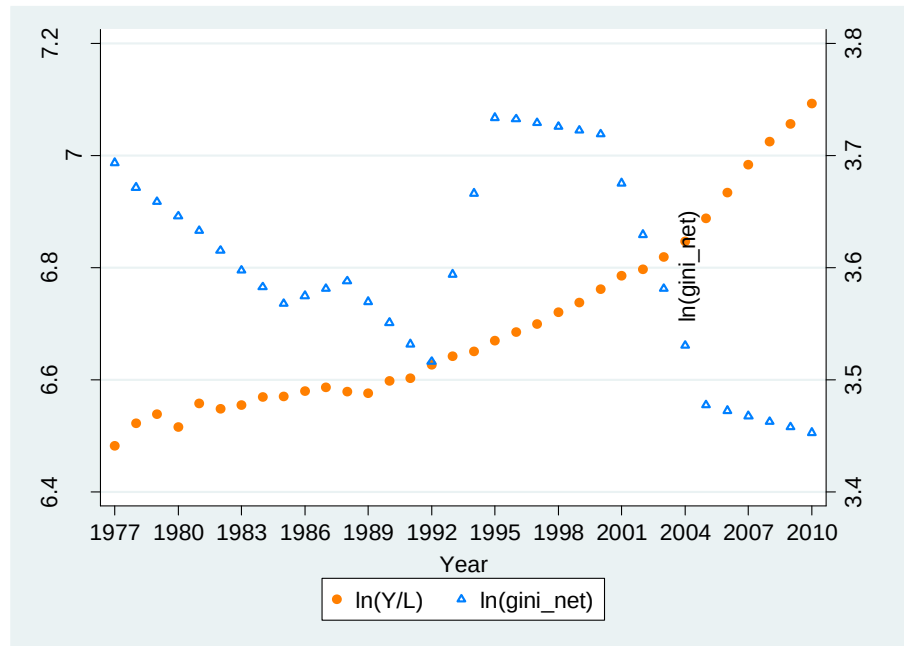
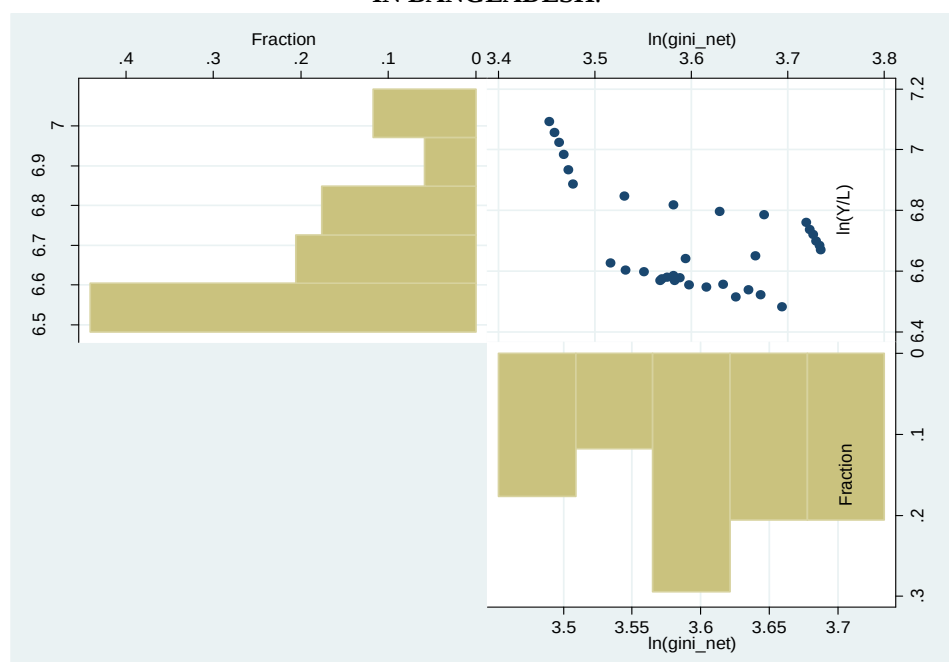


Figure 1 shows that there is a increasing trend in labor productivity in Bangladesh from 1977 to 2010. However the value of Gini coefficient is representing curvilinear trend and represents from the beginning of 1977 it starts to fall sharply therefore after 1980 there was a small fluctuation but after 1990 it starts to increase sharply and reaches to the peak situation in 1993-1994 whereas after 2000 it starts to sharply fall again.

FIGURE 2: RELATIONSHIP BETWEEN LABOR PRODUCTIVITY AND INCOME INEQUALITY IN BANGLADESH.





According to Figure 2, the value of the Gini coefficient and labor productivity are negatively correlated, meaning that a nation's income inequality decreases as labor productivity rises. According to the above figure, from 1977 to 2010 40 percent workers' productivity is \$665 per annum (in 2010 constant US dollar). In maximum cases, the Gini coefficient is about 36.6 in Bangladesh.

II. MOTIVATION OF THE STUDY

1. However, there are few empirical studies conducted before on inequality issue perspective of Bangladesh using the variable of economic integration and globalization.
2. The labor productivity trend in Bangladesh is positive but the distribution of income is not equal. Therefore, we use labor productivity which affects the economic growth and relates it to the income and earning inequality.
3. Researcher wants to see which determinant of global economic integration affects the inequality.

III. OBJECTIVES OF THE STUDY

1. To calculate the impact of international economic integration on the nation's labor productivity and income inequality using trade, foreign direct investment, the capital-labor ratio, and real GDP.
2. To evaluate the effect of exchange rate regime on labor productivity as well as income distribution.
3. To determine which combination of factors has a positive impact on the economy by raising worker productivity and closing the income gap, as well as which ones have a negative impact.

IV. HYPOTHESIS

1. According to Kuznets' inverted U-curve hypothesis (Kuznets, 1955), income inequality first increases with GDP before peaking and then declining.
2. FDI, openness, and capital-labor ratio have positive effects on the productivity of labor.
3. FDI, openness, and real GDP have positive effects on equal income distribution.
4. The flexible exchange rate is beneficial for the enhancement of the productivity of labor and contributes to reducing income inequality.

V. LITERATURE REVIEW

Concerns and enquiries have been made about the possible impacts of trade liberalization, one of the pillars of the development paradigm that many developing nations have adopted recently, on growth and income distribution in those nations.

Heshmati (2003) examined the connection between globalization and inequality using a regression analysis. The author discovered that only 7–11% of the differences in income inequality between nations can be explained by the globalization index. By breaking down the overall globalization index into four smaller components, it was discovered that while economic integration raises inequality, interpersonal relationships and technological transfers decrease it. The author also discovered that the geographical variable is crucial in explaining the change in inequality after adjusting for regional heterogeneity.

Dobson and Ramlogan (2008) investigated the connection between trade liberalization and income inequality in Latin America, utilizing a data set of China from 1952 to 2009. Jalil (2011) conducted an empirical analysis of the openness–inequality relationship under the Kuznets curve paradigm utilizing the ARDL approach and five carefully chosen alternative measures of openness. The author discovered a curvilinear correlation between measures of wealth disparity and openness. This suggests that the income inequality grows with the increase of openness and reduces after a certain critical level.

Bryan and Martinez (2008) plotted a picture of an increase in income inequality in the United States in recent decades in their representative article. Furthermore, the article documents periods characterized by a decline in real income for lower income groups. Significant increases in inequality within lower incomes are only observed during the 1980s. The results are particularly stark for income inequality in OECD countries. In contrast, they found no robust impact of globalization on inequality in less-developed nations.

Castro (2008) demonstrated the impact of economic factors like trade, foreign direct investment (FDI), and inflation on inequality under various domestic efficiency scenarios and over time by using dynamic panel data techniques and the estimated household income inequality data set (Galbraith and Kum, 2003). According to the statistical data, trade and inequality are negatively correlated, particularly in nations where there is evidence of domestic efficiency.

Velde and Morrissey (2002) investigated the effects of FDI on wages and wage inequality in five East Asian countries. Using ILO data for wages and employment by occupation, authors do not find strong evidence that FDI reduced wage inequality in five East Asian countries over the period 1985-1998. Alfaro (2003) examined the effect of foreign direct investment on growth in the primary, manufacturing, and services sectors.

However, there are many evidences and paper on this inequality issue, but there is no evidence that any empirical study conducted before with all of the variables in a same paper as this one, especially in case of Bangladesh. Therefore, researcher have conducted the study.

VI. DATA SOURCE AND METHODOLOGY

a. Data Source

The World Development Indicators (WDI), which are produced by the World Bank, provided the annual data used in this study from 1977 to 2010. The Appendix provides a description of the variables.

b. KPSS Test

The KPSS statistic is based on the residuals from the OLS regression of Y_t on the exogenous variables x_t :

$$Y_t = x_t' \delta + \mu_t \quad (3)$$

With the LM statistics defined as:

$$LM = \sum_t S(t)^2 / T^2 f_0 \quad (4)$$

where f_0 is an estimator of the residual spectrum at frequency zero and $s(t)$ is a cumulative residual function such that, $S(t) = \sum_{r=1}^t \hat{\mu}_r$ based on the residuals $\hat{\mu}_t = Y_t - x_t' \delta_{(0)}$. However, the estimator of δ used in this calculation differs from the estimator for δ used by GLS detrending since it is based on a regression involving the original data, and not on the quasi-differenced data.

c. Cointegration Test

In the setting of multivariate vector autoregressive models, Johansen's (1988) maximum likelihood (ML) technique is adaptable enough to take into consideration both short-term dynamics and long-term features.

Let's look at the vector autoregressive (VAR) model of order k in the following p dimensions.

$$X_t = \sum_{i=1}^k A_i X_{t-i} + \mu_t \quad (5)$$

Where μ_t is an independently and identically distributed vector with size $p \times 1$. Concerning the stochastic process:

$\ln Y/L_t = (\ln K/L_t, \ln OPENNESS_t, \ln D_REG_t, \ln FDI/Y_t)$ and,

$\ln GINI_NET = (\ln Y_t, \ln Ysq_t, \ln OPENNESS_t, \ln D_REG_t, \ln FDI/Y_t)$.

According to Johansen and Juselius (1990), an equation should be written as:

$$\Delta X_t = \sum_{i=1}^k \Gamma_i \Delta X_{t-i} + \Pi X_{t-k} + \mu_t$$

Where,

$$\Gamma_t = -(I - \sum_{j=1}^k A_j) \quad \text{and} \quad \Pi = -(I - \sum_{j=1}^k A_j)$$

The rank of Π , represented by r , is an eigenvalue of estimated O , and the elements of λ will be determined by $\Delta = 1/L$, where L is the lag operator and I is the $n \times n$ identity matrix.

Two tests for the quantity of unique cointegrating vectors are put out by Johansen. The Trace test computes the test statistic to test (against a general alternative) the null hypothesis that there are at most r cointegrating vectors.

$$\lambda_{trace}(r) = -T \sum_{i=r+1}^p \ln(1 - \lambda_i) \quad (5)$$

In this case, each in $(\hat{1}) \lambda$ will be equal to zero (since $\log 1 = 0$), and λ_{trace} will also be equal to zero. However, the farther the estimated eigenvalues are from zero, the more negative is each of the expressions and the larger the λ_{trace} statistic.

In the maximum eigenvalue test, the null hypothesis of r cointegrating vectors is tested against the alternative of $(r+1)$ cointegrating vectors by calculating the test Statistic.

$$\lambda_{max}(r, r+1) = -T \ln(1 - \lambda_{r+1}) \quad (6)$$

Again, if the estimated eigenvalue, λ_{r+1} , is close to zero, λ_{max} will be small, and the null hypothesis that the number of cointegrating vectors is r will not be rejected.

VII. OVERVIEW: ECONOMIC INTEGRATION, TRADE OPENNESS, FDI AND INCOME INEQUALITY IN BANGLADESH

For ten years after gaining independence in 1971, Bangladesh pursued an industrialisation strategy based on import substitution. An anti-export bias resulted from trade policies that were predicated on high tariffs and quantitative import restrictions. Beginning in the middle of the 1980s, the main goal of trade liberalisation was to reduce and eventually eradicate anti-export bias in order to establish a neutral trading regime. Import prohibitions and quantitative limits were lifted as the main means of liberalising the import regime (Munshi 2012). The 1980s Industrial Policy and Trade Policy statements acknowledged the need for increased efficiency and global competitiveness, faster export-oriented industry growth, a liberalised market-based competitive structure, disinvestment in public sector businesses, a reduction in regulation and control along with tariff rationalisation, and coordination of export and industrial policies (Nath and Mamun, 2006).

In general, the degree of income disparity has increased throughout Bangladesh's history due to the acceleration of economic expansion since the early 1990s, but it eventually began to decline. A commonly used indicator of inequality, the Gini coefficient (named for the Italian statistician Corrado Gini, who developed it) assumes values between 0 and 100, where a lower value denotes greater equality and a higher value indicates greater inequality.

According to the World Bank (2012), compared to other developing Asian nations (such as Malaysia, the Philippines, and Thailand), Bangladesh's income inequality was not particularly high in the early 1970s and did not significantly expand. At present, the country has a value of Gini index 32 and it has seen an increase in inequality since early 1990s. Inequality reached its peak situation in 1995 and exists constantly till 2000 with highest value of Gini coefficient that was 41 out of 100. Surprisingly after 2000 value of Gini started to fall slightly and come to the lowest point of the history at 2008, 2009 and 2010.

The pattern of openness, economic growth, and income inequality in Bangladesh from 1977 to 2010 is shown in Table 1 along with the compound growth rate. The rise in foreign trade and foreign direct investment (FDI) flows, particularly following trade liberalization, may indicate the extent of the nation's economic integration with the rest of the globe. From the beginning to the present, the trade-to-GDP ratio—which is typically referred to as openness—has grown. The ratio of FDI to GDP, which was just 0.61 in 1978–1979 and dropped to -0.65 percent in 1990–1999 before rising dramatically to 0.88 between 2000 and 2010, indicates the importance of FDI to the Bangladeshi economy. Rapid economic expansion has coincided with an increase in commerce and inward foreign direct investment. The rising level of real GDP may indicate that Bangladesh's economy expanded more quickly.

Table - 1
OPENNESS, FDI AND INCOME INEQUALITY IN BANGLADESH

Year	Compound growth rate in percentage			
	Trade/GDP ^a	FDI/GDP ^a	Real GDP ^a	Gini ^b
1977-2010	0.28	0.23	4.55	-0.35
1978-1979	-0.65	0.61	5.93	-1.72
1980-1989	-0.31	0.26	3.77	-0.75
1990-1999	0.61	-0.65	4.64	1.77
2000-2010	-0.92	0.88	5.74	-0.82

Note: ^a The World Development Indicators provided the data.

^b SWIID Version 5.0 (2014)

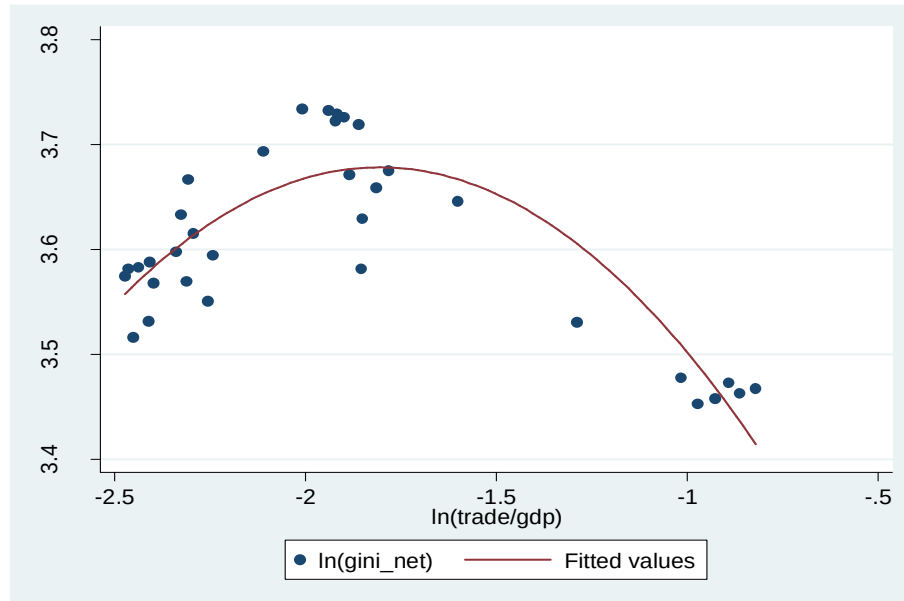
Foreign trade and FDI is the two main factors of economic growth for a country. However, trade liberalization in Bangladesh is significantly responsible for the country's recent progress and poverty reduction, according to Ahmed and Sattar (2004). They look at both aggregate and disaggregate data and conclude that while poverty reduction has slowed down throughout the 1990s, trade liberalization's faster pace has had a significantly greater influence on growth.

Income distribution is focused by the value of Gini coefficient in the representative table. Which shown that at the starting point of 1978-79 the value of Gini coefficient was so high but after that period it starts to fall slightly reflecting the decreasing of income inequality. But Since 1990 to 1999 Gini reached its highest value meaning that the higher level of inequality exists within the income of the country's people. After 2000 value of Gini started fall and come down 0.88 within 2000-2010 indicating lower value of Gini index.

We can resort to Kuznets' inverted U-curve hypothesis when discussing the connection between trade openness and income inequality. According to Simon Smith Kuznets (1955), there is a general correlation between

income disparity and per capita income. According to his theory, income disparity first increases with trade openness and economic development, but it then declines as economic development advances. Thus, the link between average income, measured by GDP per capita, and income inequality takes the form of an inverted U-curve. Without a doubt, one of the most significant claims ever made regarding inequality and progress is the Kuznets inverted U-curve hypothesis (Moran, 2005). The above table's representative data also lends credence to the Kuznets inverted U-curve hypothesis, as the Gini index reached its peak (value of 41) in the early years of trade liberalization and then began to decline sharply after 2000, reaching its lowest value of 0.88 between 2000 and 2010. As proposed by Kuznets, the shape of the link between trade openness and income inequality will be an inverted U-curve. In this section, we show the relationships between trade openness and income inequality graphically in Figure 1 and FDI inflows and income inequality graphically in Figure 2.

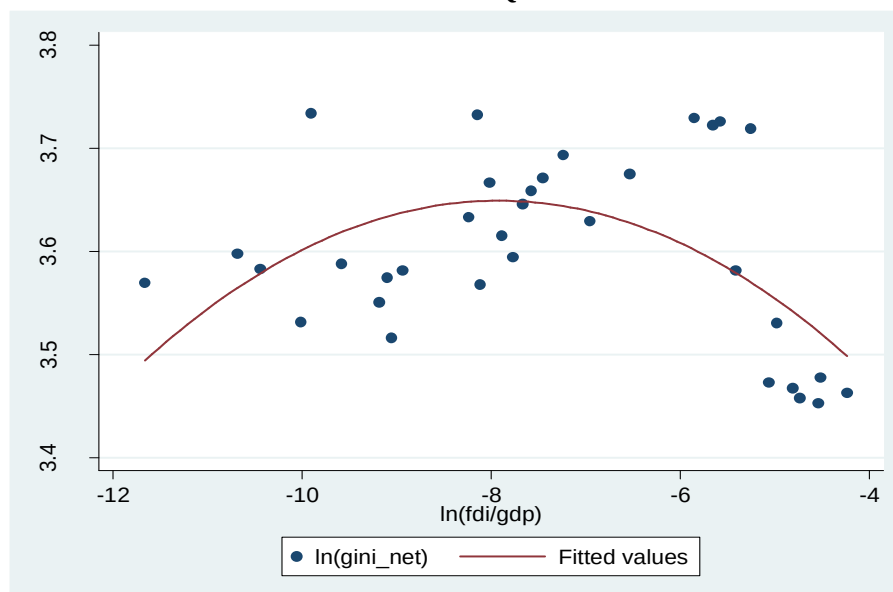
FIGURE- 3: TRADE OPENNESS AND INCOME INEQUALITY IN BANGLADESH



Using the Gini coefficient in the first figure, Figure 3 shows the relationship between trade openness and income inequality in general form. In the second image, the same relationship is plotted in logarithmic form.

These numbers lend credence to Kuznets' inverted U-curve theory, which holds that income disparity increases with economic progress at first but then declines as the economy reaches more advanced phases. The connection between FDI and income inequality is depicted in Figure 4.

FIGURE -4: FDI AND INCOME INEQUALITY IN BANGLADESH



The two figures above first demonstrate a positive correlation between FDI and income disparity, but after a while, inequality begins to decline as FDI flow increases.

VIII. THEORITICAL FRAMEWORK AND ANALYSIS

Researcher has developed two model to identified the effect of capital, labor-ratio (K/L), trade openness (Trade/GDP), flexible exchange rate regime (D_REG), FDI-output ratio (FDI/Y), real GDP (Y), and real GDP square (Ysq) on output-labor ratio (Y/L) or labor productivity and income inequality (GINI_NET). Two models are specified as :

Model – 1

$$Y/L = f(K/L, OPENNESS, D_REG, FDI/Y)$$

Empirical Model:

$$\ln Y/L_t = \beta_1 + \beta_2 \ln K/L_t + \beta_3 \ln OPENNESS_t + \beta_4 \ln D_REG_t + \beta_5 \ln FDI/Y_t + u_t \quad (1)$$

Model – 2

$$\text{Analogously, suppose, } GINI_NET = f(Y, Ysq, OPPENNESS, D_REG, FDI/Y)$$

Empirical Model:

$$\ln GINI_NET = \alpha_1 + \alpha_2 \ln Y_t + \alpha_3 \ln Ysq_t + \alpha_4 \ln OPPENNESS_t + \alpha_5 \ln D_REG_t + \alpha_6 \ln FDI/Y_t + v_t \quad (2)$$

In model-1 researcher incorporate output labor ratio (Y/L) as dependent variable and explanatory variables are capital labor ratio (K/L), trade openness (trade/gdp), Regime dummy (D_REG), FDI output ratio (FDI/Y). Here we collect all of the data from World Development Indicator (WDI) and real GDP of the country divide by the total number of labor to express as labor productivity (Y/L). Total capital also divided by the total number of labor to express as capital labor ratio (K/L). Trade/GDP, explore the trade openness where Trade reports volume of trade or summation of export and import. By adding regime dummy as an explanatory variable, we hope to evaluate the impact of the country's flexible exchange rate regime on income inequality and labor productivity. The FDI output ratio was calculated by dividing the total FDI input by the total output (Y). This model was created with the intention of estimating how these independent variables affect labor productivity (Y/L).

In model-2 model researcher included GINI_NET as dependent variable where GINI_NET represents the value of Gini coefficient. Named for the Italian statistician Corrado Gini, the Gini coefficient is a widely used measure of inequality that ranges from 0 to 100 (higher values indicate greater disparity, while lower values suggest greater equality). The explanatory variables are same as model-1 except two variables. Here we comprise Real GDP (Y) and Real GDP Square (Ysq) and exclude capital labor ratio (K/L), all of the data collected from World Development Indicator (WDI) as well

Empirical Result

The results show that, with the exception of two variables, all variables are significant and non-stationary at the level (both with and without trend). In the first difference, the variables under consideration are stationary and statistically insignificant when the trend is taken into account. The outcome offers a foundation for the variables' long-term relationship.

TABLE -2: UNIT ROOT TEST RESULTS

Variables	KPSS Statistics			
	Without trend		With trend	
	Level	1 st difference	Level	1 st difference
lnY/L	- 6.0940*** (4)	- 6.6479 (4)	- 6.1176*** (2)	- 6.2855 (4)
lnK/L	- 4.5367*** (4)	- 4.6822 (4)	- 4.1912(4)	- 4.5404 (4)
Ln Openness	- 0.8880*** (1)	- 0.9880 (0)	- 0.2893*** (1)	- 1.0087 (0)
lnFDI/Y	3.076*** (1)	3.3804 (4)	3.3447*** (1)	3.3646 (2)
LnY	- 6.2600*** (4)	- 6.8283 (4)	- 6.3032*** (2)	- 6.4170 (4)
LnYsq	1.5538*** (4)	0.9807 (4)	1.4954*** (2)	1.4047(4)
Ingini	- 4.6440 (2)	- 4.4847 (1)	- 4.6754** (2)	- 4.5450 (1)
In D_REG 2	- 0.5316*** (1)	- 0.4597 (0)	- 0.4725*** (1)	-0.4955 (0)

Note: (i). **, and *** show that, accordingly, the relevant null hypothesis is rejected at the 5% and 1% significance levels. (ii) The AIC-selected lag length is displayed in all brackets.

The cointegration test result is shown in Table 2, and we have integrated Johansen-Juselius' (1990) maximum likelihood approach to examine the long-term equilibrium relationship among the variables under consideration. We determine that the time series variables of Bangladesh's output-labor ratio. According to statistics at the 1% significance level, the null hypothesis of no cointegration, or $r = 0$, is rejected in the J-J test. For example, up to

$r \leq 1$, both and surpass the critical value at the 1% significance level. As a result, a long-term association between the significant variables has been discovered.

TABLE - 3 : MODEL - 1 JOHANSEN COINTEGRATION TESTS

H_0	H_A	λ_{trace}	λ_{max}
$r = 0$	$r = 1$	159.8589**	90.8531**
$r \leq 1$	$r = 2$	69.0058**	37.5762**
$r \leq 2$	$r = 3$	31.4296**	18.2192
$r \leq 3$	$r = 4$	13.2104*	11.9261
$r \leq 4$	$r = 5$	1.2844	1.2844

Notes: (i) is the quantity of cointegration vectors. (ii) There are four lags. The hypothesis is rejected at the 1% and 5% significance levels, respectively, as indicated by the symbols ** and *. Reports from Johansen-Juselius Table 3 Bangladesh's income inequality is the result of cointegration. At least at the 1% significance level, the representative results show that the null hypothesis of no cointegration, or $r = 0$, is rejected in terms of statistics. For example, up to $r < 1$ at the 1% significance level, statistics surpass the critical threshold.

TABLE-4: JOHANSEN COINTEGRATION TEST FOR MODEL – 2

H_0	H_A	λ_{trace}	λ_{max}
$r = 0$	$r = 1$	131.7072**	53.3913**
$r \leq 1$	$r = 2$	78.3159**	31.7931
$r \leq 2$	$r = 3$	46.5228**	22.4901
$r \leq 3$	$r = 4$	24.0327	12.7638
$r \leq 4$	$r = 5$	11.2689	10.1225
$r \leq 5$	$r = 6$	1.1464	1.1464

Notes: (i) represents the quantity of cointegration vectors. (ii) There is a lag of 2. (iii) At the 1% significance level, "***" indicates that the hypothesis is rejected. According to Table- 4, for the overall sample, the capital labor ratio ($\ln K/L$), the Trade openness (Trade/GDP), and the regime dummy ($\ln D_REG\ 2$) are positively affecting the output labor ratio ($\ln Y/L$), while the FDI output ratio ($\ln FDI/Y$) is negatively affects the output labor ratio ($\ln Y/L$). At the 1% and 5% significance scales, every coefficient is statistically significant.

TABLE -5: JOHANSEN NORMALIZATION IMPOSED FOR MODEL - 1

	$\ln Y/L$	$\ln K/L$	$\ln Openness$	$\ln D_REG\ 2$	$\ln FDI/Y$
Normalized β	1	-0.3143***	-0.0980***	-0.0434**	0.00970**
Asymptotic- p value	-	0.000	0.000	0.024	0.011

Notes: *** and ** indicates significance at 1% and 5% respectively.

From Table -5 we found positive result of capital labor ratio ($\ln K/L$), the trade openness (trade/GDP), and the regime dummy ($\ln D_REG\ 2$) with output labor ratio ($\ln Y/L$). That means by adopting and rising these variables enhancement of the productivity of labor is possible, which is consistent with economic theory but the doubt comes from the negative relationship between FDI-output ratio ($\ln FDI/Y$) is negatively affects the output labor ratio ($\ln Y/L$).

It is evident from earlier studies that host nations can benefit greatly from foreign direct investment (FDI). FDI provides a source of outside funding, boosts income, and aids in the growth of new sectors, particularly in developing nations. So, the ultimate result is accelerating the economic growth through higher GDP growth rate. There are many examples and empirical result to support this concept. But at this case, for our respective country we found that FDI Output ratio (FDI/Y) offers a negative relationship with the output labor ratio (Y/L). Which indicate that by the increase of FDI host country facing negative output growth by their production function. It can create a doubt about the empirical reliance of this paper but there are some evidence and papers to support these findings.

TABLE 6 : JOHANSEN NORMALIZATION IMPOSED FOR MODEL - 2

	$\ln gini$	$\ln Y$	$\ln Ysq$	$\ln Openness$	$\ln D_REG$	$\ln FDI/Y$
Normalized β	1	-31.6598***	0.6361***	-0.1049*	-0.2441***	-0.0800
Asymptotic- p value	-	0.000	0.000	0.099	0.001	0.000

Notes: *** and * indicates significance at 1% and 10% respectively.



Table-6: represents real GDP ($\ln Y$), trade openness (trade/gdp), regime dummy ($\ln D_REG$), FDI output ratio (FDI/Y) positively effects the income inequality in Bangladesh. While only Real GDP square ($\ln Ysq$) is negatively affecting the income inequality. That is by the rising of trade openness, real GDP, and adopting floating exchange rate system the country facing higher income inequality.

It is a controversial outcome that trade openness, higher output and higher FDI inflow has a negative effect on the value of GINI coefficient. There are some empirical evidences also in favor of these findings. For instance, Lee (2014) discovered a conditional association between trade openness and poverty and inequality, but financial globalization also raises income inequality and poverty overall. A significant contributing element to the escalation of economic disparity among Indian states is the country's trade openness. Since Bangladesh, our representative nation, shares many traits with India, this paper supports its conclusions.

The main finding of Székely and Samano's (2012) medium-run perspective on the relationship between trade openness and inequality in Latin America over the last three decades (using data from 1980 to 2010) is that higher trade openness is linked to concurrent increases in inequality in the region.

A relationship of long-term equilibrium is shown by the presence of cointegration between variables. Disequilibrium could, however, occur in the near future. The short-term behavior of the variables can now be estimated using the error term in the cointegrating relation. We use vector error correction models (VECM) to examine causality's direction.

Only in the output-labor ratio do the adjustment parameter coefficients in Model-1 have the expected sign and are statistically significant; in the capital-labor ratio, the expected sign is absent but the coefficients are statistically significant. An annual correction of 34% of the deviation from the long-run equilibrium level is possible, according to the value of -0.34. With the exception of the FDI-output ratio and Gini_net, none of the adjustable parameter coefficients in the Model 2 example are significant. However, the FDI output ratio is not shown by Gini_net, which shows the expected distribution. According to the value -0.09, it is possible to correct 9.5% of the departure from the long-term equilibrium level in a year.

IX. CONCLUSSION AND RECOMMENDATION

This study reflects the impact of Global Economic Integration on output labor ratio which is the basement of an economy and the income distribution of country's people which is a latest burning concern for developing countries, using the Variable of trade openness, FDI output ratio, exchange rate regime, real GDP, square root of real GDP, capital labor ratio. In our representative Model-1, the researcher discovered that the capital-to-output ratio is positively and advantageously impacted by trade openness, the fixed exchange rate regime, and the capital-to-labor ratio. Which infer that, managed floating system is better for growth of output labor ratio compare to fixed exchange rate system. FDI output ratio also shows a negative impact on output labor ratio apparently it seems to be unrealistic however, by the previous research it is found that the country who is mostly primary goods exporter and producer may face such situation like Bangladesh. So, if the country can produce and export manufacturing products the FDI output may affect positively on labor productivity. At this case the producer and exporter have to come forward.

However, our estimated model-2's explanatory variables, with the exception of the exchange rate regime and the square root of real GDP, have all shown a negative correlation with income distribution. Meaning that fixed exchange rate system contributes to reducing income inequality whereas managed floating exchange rate system is a contributor of inequality. The negative effect of other variable on inequality indicates that Trade Openness, FDI Output ratio, and real GDP increase the income gap of the country. Which is a matter of thinking in this era of globalization. So, attention needs on our trade policy. Government and policy maker need to give more attention on the negative effect of exchange rate regime and further research is necessary to take proper policy. To being benefited from the global economic integration we also need proper absorptive capacity to use the opportunity.

REFERENCE

1. Aitken, B., Harrison, A., (1999). Do domestic firms benefit from FDI? Evidence from Venezuela. *American Economic Review*, 89 (3), pp. 605 – 618.
2. Alfaro, L., (2003). *Foreign Direct Investment and Growth: Does the Sector Matter?*. Harvard Business School. Morgan: Boston.
3. Amelia U., Paulino, S., (2012). *Trade, Income Distribution and Poverty in Developing Countries: A SURVEY*. United Nations Conference on Trade and Development (UNCTAD). [On line]. Available at: <http://www.unctad.org>.



4. Berthélemy, J., Démurger, S., (2000) .Foreign direct investment and economic growth: theory and application to China. *Review of Development Economics*,(2), pp. 140 – 155.
5. Castro, G. A., (2011).The Effect of Trade and Foreign Direct Investment on Inequality: Do Governance and Macroeconomic Stability Matter?. *economía mexicana nueva época*,(xx),1. PP. 181-219.
6. Chowdhury, A., Mavrotas, G., (2003). FDI and growth: what causes what?.WIDER conference on Sharing global prosperity. WIDER, Helsinki, Setembro 1 to 18.
7. Dobson, S., Ramlogan, C., (2008). Is There An Openness Kuznets Curve? Evidence From Latin America. Discussion paper in Economics. Discussion paper No. 2008/10.Nottingham Business School, Nottingham Trent University :UK.
8. Dollar, D., Kraay, A., (2002). Spreading the Wealth. *Foreign Affairs*, 81(1), pp.120–33.
9. Dreher, A., Gaston, N., (2008). Has Globalization Increased Inequality? *Review of International Economics*, 16(3), pp. 516–536.
10. Fahmida, L., (2012). A project submitted in partial fulfillment of the requirements for the degree of Professional Master in Banking and Finance. Asian Institute of Technology School of Management. Thailand.
11. Ford, R., (2008). Foreign direct investment, economic growth, and the human capital threshold: evidence from US states. *Review of International Economics*, vol. 16 (1), pp. 96 – 113 24.
12. Frederick, S., (2014). The Standardized World Income Inequality Database. Working paper, SWIID Version 5.0, October 2014.
13. Ghose, A. K., (2001). Global economic inequality and international trade. International Labour Office Geneva. Employment paper 2001/12.
14. Gourdon, J., (2007). Openness and Inequality in Developing Countries: a New Look at the Evidence. [on line]. Available at: <https://halshs.archives-ouvertes.fr/halshs-00557117>.
15. Halmos, K., (2011).The Effect of FDI, Exports and GDP on Income Inequality in 15 Eastern European Countries. *Acta Polytechnica Hungarica*.Vol. 8, No. 1.
16. Hansen, G., (2006).On the casual links between FDI and growth in developing countries. *World Economy*,29 (1), pp. 21 – 41.
17. Herzer, D., Nunnenkamp, P.,(2008).FDI and Income Inequality: Evidence from Europe. Kiel Institute for the World Economy, Kiel Working Paper No. 1675.
18. Heshmati, A., (2003). The Relationship between Income Inequality and Globalization.[on line] Available at: <http://www.wider.unu.edu>. [Accessed 12 august 2016].
19. Im, H., McLaren, J., (2015). Does Foreign Direct Investment Raise Income Inequality in Developing Countries? A New Instrumental Variables Approach.Project work,Department of Economics.University of Virginia:USA.
20. Jalil, A. (2012). Modeling income inequality and openness in the framework of Kuznets curve: New evidence from China. *Economic Modelling*, 29 (2012) pp .309–315.
21. Kevin, A., Martinez, L., (2008). On the Evolution of Income Inequality in the United States.*Economic Quarterly*, (94),2.pp.97–120.
22. Koojaroenprasit, S., (2012).The Impact of Foreign Direct Investment on Economic Growth: A Case Study of South Korea. *International Journal of Business and Social Science*, (3),21.
23. Li, H., Zou, H., (2002). Inflation, Growth, and Income Distribution: A Cross-Country Study. *Annals of Economics and Finance*, (3),85–101.
24. Lim, G. C., Paul D.,(2014). Income Inequality, Trade and Financial Openness. Joint RES-SPR Conference on Macroeconomic Challenges Facing Low-Income Countries. International Monetary Fund.Washington DC: US,30–31 January. 2014.
25. Meschi, E., Vivarelli M.,(2007). Discussion Paper on Globalization and Income Inequality. Discussion Paper No.2958.The Institute for the Study of Labor (IZA) Bonn:Germany.
26. Mohammad A., Hossain, (2011). Trade Liberalisation and Wage Inequality in the Bangladesh Manufacturing Sector. *Bangladesh Development Studies*, Vol. XXXIV,No.3.
27. Moran, T., (1999). Foreign direct investment and development: a reassessment of the evidence and policy implications, OECD. *Foreign Direct Investment, Development and Corporate Responsibility*.Paris: OECD.
28. Munshi, F., (2012).Does openness reduce inequality in developing countries? Panel data evidence from Bangladesh. *The Singapore Economic Review*, [e-journal] 57(2).[http:// DOI: 10.1142/S0217590812500129](http://DOI:10.1142/S0217590812500129).
29. Naguib, C., (2015).The Relationship between Inequality and GDP Growth: an Empirical Approach. .Luxembourg Income Study (LIS), asbl. LIS Working Paper Series.
30. Nath H.K., Mamun, K. H.,(2006).31st Annual Meetings of the Missouri Valley Economic Association in Nashville and the 75th Annual Meeting of the Southern Economics Association .Washington D.C.: United Nation, 18-20 November. 2005.
31. Nunnenkamp, P., (2004). To what extent can FDI help achieve international development goals?. *World Economy*,27 (5), pp 657 - 677 26.
32. Omran, M., Bolbol, A., (2003). Foreign direct investment, financial development and economic growth: evidence from Arab countries. *Review of Middle East Economics and Finance*, 1 (3), pp. 231 – 249.
33. Ozturk, I., (2007). Foreign direct investment – growth nexus: a review of the recent literature. *International Journal of Applied Econometrics and Quantitative Studies*, 4 (2), pp 79 – 98.



34. Sen, H., (1998). *Different arguments for and against the role and impact of foreign direct investment on the development potentials of developing countries: an overview*. *Journal of Economics and Administrative Sciences*, 13 (1), pp. 181 – 190.