THE RELATIONSHIP BETWEEN TRADE OPENNESS AND INCOME INEQUALITIES

The Relationship between Trade Openness and Income Inequalities:
Empirical Evidences from Pakistan

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ABSTRACT

It is largely believed that income inequalities can be decreased by opening up the less developed economies to the global market. This study attempted to examine the presence of significant link between trade openness and income inequalities for Pakistan using annual time-series data from 1972 to 2008. The dependent variables used in this study are Gini Coefficient for income inequality while foreign direct investment (net inflows), trade openness, worker's remittances, real interest rate and urban population are used as explanatory variables. For this purpose, we have used multivariate Johansen (1998) and Johansen and Juselius (1990) Maximum Likelihood Cointegration Approach and a Vector Error Correction Model (VECM) and the expected empirical findings are not in support of the conventional thinking that opening up of the Pakistan economy to the global world has significant influence on the distribution and inequality of income.

Keywords: Trade Openness, Income Inequality, Unit Root Testing, Multivariate Co integration Approach, Vector Error Correction Model, Pakistan.

1. INTRODUCTION:

The influence of openness on the level and distribution of income have received extensive attraction among academics and policy makers specifically in less developed economies in last two decades. It was believed that economic broadness established a competitive atmosphere which resulted in quality products leading to the economic growth. The new growth theory suggests that openness broaden the market, induct an increase in advancement, reallocates employment to new sectors that require more human capital and increases knowledge flow between economies. Trade openness can be explained as a fast economic interaction between economies driven by liberalization of trade, investment and capital flows as well as technological changes[1].

Nissanke and Thorbecke (2004) states that openness is a necessary but not a sufficient condition for successful development of world. They claimed that economic broadness tends to be linked with higher volatility and economic shocks, which influence the poor households harder and deepen poverty and income inequality during the Asian financial crisis. However, it has been resulted in rising rate of inequality both in established and less developed economies. The empirical evidence suggested that the last two decades have brought down growth and increasing inequalities for various economies. Therefore, from Cornia's points of view, openness is the basic reason of consecutive increase in income inequality between individuals in different areas. In favor of this, it has been found that openness has a direct link among income inequality and the production outsourcing processes.[2]

During the 1980s and 1990s many countries opened up their economies and enhanced their trade volume and at the same time income inequalities appeared to be large in different areas of the world.

Table 1:

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[1] Torres (2001)
[2] Cornia 1999, pp1

Gini Index: Decade Averages Per Region:

Region	Average Gini 80s	Average Gini 90s
East Asia and the Pacific	36.4	38.2
Latin America and the Caribbean	28.2	34.4
Eastern Europe and Central Asia	47.2	51.3
Middle East and North Africa	39.4	38.0
South Asia	31.8	35.3
Sub-Saharan Africa	46.4	49.4
North America	32.9	34.0
Western Europe	27.8	29.2

Source: Calculated averages from Gini data in WIID (2004).

Pakistan along with other less developed economies adopt an import substitution strategy. In the last two decades, many less developed economies have support economic openness as a development strategy. Generally openness resulted in larger gross domestic product (GDP) as compared to its impacts on income inequalities. The distributional effects of openness are noteworthy in less developed economies, where inequalities are large and there are huge vulnerable populations. (Topalova 2007)

The Relationship between Trade Openness and Income Inequality:

According to the neoclassical theory of international trade (Heckscher-Ohlin model and one of its theorems the Stolper-Samuelson theorem 1941)[3] economic openness will resulted to enhance the real and nominal return on the abundant factor and inversely a decrease in the real and nominal return on the country's scarce factor. Thus, in economies with large supply of cheap and unskilled worker (usually the less developed economies), openness will influence to enhance the real and nominal wages of those labor thus leading to reduce income inequality.

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[3]The Stolper-Samuelson theorem, linking factor price changes to trade openness assumes that goods of a particular industry are perfect substitutes and that costs of production rely on wages of factors whose supply in each country is fixed.

On the other side, economies with huge supply of physical and human capital (usually the developed countries), openness will resulted to enhance in the real and nominal income of the owners of those factors (i.e.; highly skilled workers). In short, according to the Stolper-Samuelson theorem, openness will lead to decrease income inequality in less developed economies and an increase in it in developed economies.

Secondly, according to Heckscher-Ohlin model openness has direct influence on the real incomes of the poor, this would enable these people to make loans and enhance their investment which would reduce inequality in the long run. Thirdly, openness often resulted into expansion of industries in different sectors within a country and reduction in output in other regions. This could influence employment and wages in various areas, which in turn effect income distribution.

Fourthly, openness may alter the demand for female or male labor for example, if textile out put increases because of openness, it may raises the demand of female labor as compare to male labor. If there is a general discrimination in skill level among male and female worker, openness causes larger demand of either skilled or unskilled worker that also influence gender inequality.

A Brief Review of Openness and Income Distribution in Pakistan:

Like many other less developed economies, Pakistan is also involved in structural reforms. Economy is moving towards free trade, privatization, deregulation and liberalization policies. Pakistan is paying attention on competitive trade from last two decades by adopting import substitution policies with huge tariff rates and non-tariff barriers (Chaudhary 2004). Total trade volume was 1300.5 million dollars in 1972 as compared to 35,155 million dollars in 2005. There is sharp increament in total trade of Pakistan from 2003 to 2005 due to liberalized approach of Pakistan towards trade by deducting tariffs from about 200 percent to just only 25 percent in 2002. Over the last three decades, income inequalities in Pakistan followed unequal path. The Gini coefficient rises from 0.312 in 1972 to 0.406 in 2006.

1.2 Statement of Problem:

One of the most sparking aspects of openness is that how much poor people from less developed economies gain from it. Pre openness economists were of the view that poor people obtained enough from global trade while some others were of the view that an unbalanced part of benefits from global trade goes to the people who can't lies in poor. Ravallion (2004)

states that openness is decreasing absolute poverty if one accepts that trade do not affect inequality but enhances economic growth. Trade will have detrimental influence on poor people as the benefits of openness go to rich people. This is favored by the fact that approach to new technologies favors skilled and trained labor rather than unskilled.

1.3 Research Question:

According to new theories, economic openness could decreases the salaries of inefficient labor even in a labor intensive economy, thereby increasing the gap among the rich and the poor. Moreover, if openness increases economic growth in the long run and decreases poverty, the adjustment might be expensive with the burden falling unequally on the poor only (Banerjee and Newman 2004).

It is widely observed that the expenses associated with trade openness during recessions influenced the less developed economies more as compared to its advantages during boom was not equally distributed. There is a question mark regarding the influence of openness on income and its distribution, it is also important to realize the elements which determine it. Whether trade has a direct influence or not, based on the pattern of growth followed by the countries and global economic policy.

1.4 Objectives of the Study:

The main focus of this research is to determine the nature of the link among trade openness and income inequalities. The core focus of this study is to apply the co integration approach of Johansen (1998) and Johansen and Juselius (1990) in order to examine the effect of trade openness and income distribution for Pakistan.

  ➢ To analyze the link between trade openness and income inequality for Pakistan (1972 – 2008).

1.5 Hypothesis:

H_0 = There is No relationship between Trade openness and Income inequality in Pakistan.

H_1 = There is a relationship between Trade openness and Income inequality in Pakistan.

2. LITERATURE REVIEWS:

Mundell (1957) explored that foreign direct investments (FDI) in less developed economies has effective influence on decreasing inequalities by enhancing general rise in the capital amount.

Which ultimately means that the marginal physical product of labour raises as a result of this increase, real wages as well as nominal wages are raised and decreasing inequalities.

Tsai (1995) assessed the statistically significant relation among foreign direct investment (FDI) and income inequalities that might adopt most of the geographical difference than the deleterious effect of FDI in an inequality and to the extent that FDI enhanced more uneven distribution of income in the host less established economies.

Feenstra and Hanson (1997) found that foreign direct investments flows widen inequalities in Mexico from 1975 to 1988. The reason behind these inequalities were the huge movement of capital to the established economies which created a large demand of skilled worker which directly increases relative wages earned by this labor force. While on the other side, the relative wages earned by the unskilled labor had deteriorated in the less developed economies which enhanced inequalities.

Spilimbergo, Londono and Szekely (1999) assessed the relation among factor endowments, trade and personal income distribution. They found that land and capital intensive economies had un balance distribution of income as compare to skill intensive economies, which had more balance income distribution. They also found that the impact of broadness on inequalities based on factor endowments. Bigsten (1999) found the elements that influenced income distribution and poverty in Uganda and found that it would become internationally competitive in sectors outside the traditional goods exports.

Ghose (2001) used the data of 96 countries from 1981 to 1997 and concluded that income inequalities had been increasing with in countries but at the same time it had been reducing internationally. Mugerwa (2001) was of the viewed that trade openness can not only be the reason for high poverty and inequality. Internationally-backed reforms collasped due to lack of institutions, favorable domestic situations or ability to negotiate for foreign aid more efficiently in Sub Saharan Africa.

Kentor (2001) estimated the impact of two aspects of globalization such as, foreign capital dependence and economic openness on population growth, inequality and economic development from 1980 to 1997 of 88 less developed countries. Results shown that foreign capital dependence had direct impact on inequalities, increases fertility rates, raises population growth and stagnated economic development. In contrast, openness has long-term direct impacts on development. Dollar and Kraay (2001) explored the impact of trade openness on inequality and poverty. They found that the strong direct impact of trade on growth and an

increment in growth rates leads to improve incomes of the poor and concluded that trade openness moves the economies towards faster growth and poverty deduction in poor nations.

Calderon and Chong (2001) assessed the external sector and income inequalities and found that the intensity of capital controls, the exchange rate, the type of exports, and trade volume influences the long run income distribution for inter dependent economies by grouping the data in 5 year averages from 1960 to 1995 using dynamic panel data approach. Result shown that trade decreases income inequalities but when dummies were involved they found that openness was positively significant for industrial economies and was negatively significant for less developed economies.

Jai (2002) examined the effect of differences in trade values and FDI inflows on the Gini coefficients for Korea. The empirical evidence cleared that income inequalities tends to raise with openness and FDI inflows means globalization tends to deteriorate the situation of income inequalities in Korea which favors the Feenstra-Hanson (1997) hypothesis.

Cornia (2002) argued that income inequalities decreased in various nations between the 1950s and 1970s, this trend had been opposite during the last twenty years for 77 countries. He also reviewed world inequalities behaviors between country and within country. He compared earlier phase of openness (1870-1914) with recent one. During earlier wave of globalization foreign migrations played vital role in balancing the incomes while the present phase could not do so because of increasing restrictions on migration policies in established countries. Technology played the central role in recent phase of globalization as compared to earlier one. He also suggested the traditional reasons of income inequalities (land concentration, uneven approach to education, urban rural difference, and so on) and recent causes of inequality includes the decrease in the labor part during structural adjustment, trade liberalization, the 'financialization' of the economy and the rise in the financial rent between 1982 to 1996.

Heshmati (2003) applied two composite indices of openness based up on the Kearney/Foreign Policy Magazine and principal component analysis in regression analysis to study the link between income inequality and openness for 62 countries from 1995-2001. The indices were decomposed into four components: economic integration[4], personal contact[5], technology[6] and political engagement[7] and the results showed that personal contacts and technology transfers

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[4] Based on 4 variables: trade, foreign direct investment, portfolio capital flows, and income payments and receipts.
[5] Based on 3 variables: international telephone traffic, international travel and tourism, and transfer payments and receipts.
[6] Consists of 3 variables: internet users, internet hosts and secure internet servers.
[7] Consists of 3 variables: number of embassies in the country, number of membership in international organizations, and number of participation in UN Security Council missions during a calendar year.

decreases inequality, while economic integration enhances inequality. Political engagement was found to have no significant impact on inequalities. These indices explain only 7 to 11 percent of the variations in income inequalities among countries.

Velde (2003) found that income can be distributed better with the help of Foreign Direct Investment (FDI) in Latin America by using suitable development policy specifically in the areas of education, training and infrastructure. Rafael Reuveny and Quan Li (2003) analyzed the influence of openness, FDI and democracy on income inequalities for 69 economies from 1960 to 1996 and also perform separate analyses for the established and developing economies. They found that democracy and openness decreases inequalities, foreign direct investments enhances income inequality and financial capital does not influence inequalities.

Nath and Al-mamun (2004) analyzed the trade, growth and inequalities for Bangladesh by applying vector auto-regression (VAR) model. They concluded that trade openness had increased growth in a country and influenced income distribution. Topalova (2004) explored the influence of openness on poverty and income inequalities in various districts of the India. Research cleared that openness increased poverty and poverty gap in the rural districts where liberalized industries were concentrated and the findings showed that a district facing the mean level of tariff changes have 2 percent increment in poverty and 0.6 percent enhancement in poverty depth as compared to rural district that facing no change in tariff.

Wan, Lu and Chen (2005) examined the regional inequalities in China and found that openness constituted direct and substantial part to it and the share improved over time while the capital input and infrastructure were the largest contributors to regional inequality. Kahai and Simmons (2005) used Gini index to assess its relation with openness through controlling structural and social factors. They found that openness was directly related with inequalities for less developed countries but it was insignificant in case of developed countries. Results cleared the alarming increment in income inequalities attached with openness for all countries in the study.

Anderson (2005) explored that openness influences income inequalities in less developed economies by effecting assets, spatial and gender inequalities. He also pointed that many time series analysis found that economic broadness had enhanced the demand of skilled labor but many panel studies found that openness had low effect on income inequality. He was of the opinion that the impact of broadness on inequalities through the relative demand for skilled worker had been offset through different channels.

Basu (2006) reviewed the existing evidence on trade openness and world inequalities within and across economies and argued that they both were inter related. He discussed alternative methods to overcome large poverty and inequality. He viewed that curbing these within a country needed global cross countries policies that we do not have and advocated the setting of global steps to co ordinate such policies.

Figini and Santarelli (2006) found the link between openness and poverty for less developed economies by using standard indices of trade openness, financial openness and privatization and relative and absolute poverty indices averaged over five and ten years. They concluded that openness had not significantly influenced relative poverty; however financial openness tends to be related with higher poverty.

Silva (2007) examined the differential impacts of trade openness in two different regions of Mozambique[8] and the results cleared that the impacts of agricultural trade orientation[9] on regional inequalities were mixed. In south of Mozambique, the orientation toward vegetables traded within the country had increasing inequality effects. While, in north of Mozambique, the orientation toward exported crops had dampening inequality impacts. These mixed results imply a complex link between trade openness and inequalities that differs by region and the trade types. Study suggested that regional trade and development policies taken into account historical, political, and geographic differences within countries would addressed the trade related impacts on unequal development efficiently as compare to national policies.

Jaumotte, et. al. (2008) concluded that openness resulted into a decrease in inequality. While, financial globalization (foreign direct investment) enhanced inequalities in a group of countries. Tian, Wang & Dayanandan (2008) assessed the influence of openness in terms of GDP per capita, FDI inflows and the percentage of government spending on social insurance on distribution of income in China from 1978 to 2006. Results shown that openness and FDI inflows improved income inequality and distribution in China while, government spending on social insurance decreases inequalities and economic growth had not contributed directly to reduce income inequality. The worsening of income inequalities must be occurred by unbalanced establishment and thus various advancement policies and strategic options should be considered in order to reduce inequality.

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[8] The more established southern portion and the more isolated region north of the Zambezi River.

[9] Degree to which area's population is involved in the production and sale of cash crops and vegetable crops.

Chaudhry, Hussain and Hasan (2009) estimated the impact of trade openness on income distribution for Pakistan using GINI coefficient as dependent variable while foreign direct investments, trade openness and remittances were used as explanatory variables from 1972-2005. They found that foreign capital penetration either through investment or remittances had inverse effect on income inequalities and it would be cleared that opening up of the economy was effective for income distribution.

Mills (2009) gave a review of present research that relates openness to inequality. A theoretical model formulated the procedure relating openness and inequality and show that how it enhanced inequality within established nations and reduced inequality within less developed countries. It concluded with the details of different research in this special issue and put them within the broader literature.

Georgantopoulos and Tsamis (2011) investigated the effect of openness on income distribution using Ordinary Least Squares (OLS) for Hungary on Gini coefficient, foreign direct investments FDI as percentage of GDP, trade openness measured by exports + imports as a percentage of GDP and workers remittances for the period of 1990 to 2009. The empirical results shown that trade openness, foreign direct investment and remittances had negative effect on GINI. Study concluded that foreign capital penetration through investments and remittances had positive impact on distribution of income which enhancing liquidity, decreasing poverty and indirectly increasing growth. Sharp inflow of remittances in 2003 and increasing trend of FDI in 2004 because of numerous economic transformation and deregulation had significant positive effect on income distribution.

Bashir and Khan (2011) applied multivariate cointegration and vector error correction technique on trade openness (Imports + Exports) as a share of GDP, head count ratio for poverty and Gini-coefficient for income inequality to examine the link between trade liberalization, poverty alleviation and inequality for India from 1970-2009. Results indicated that openness enhanced income equalities in the short-run while, in long run income inequality inversely influenced openness. Study contradicted the predictions of the Stolper-Samuelson theorem, showing no influence of trade openness on inequality in India. Results further shown that inequality reduced the trade of the economy. Because of rising inequalities the part of middle class in the income lowered resulting into shortage of small and medium size business along with less demand for imports. So, openness should not be a reliable substitute for poverty reduction.

Faustino, H. & Vali, C. (2011) used static and dynamic panel data analysis by using openness, FDI, GDP per capita, unemployment, long term unemployment, inflation and total listed domestic companies to explored the link between income inequality and trade openness in the

24 OECD economies from 1997 to 2007. Results cleared openness had inverse influence on income inequality and also confirmed the Kuznets hypothesis of direct link among inequality and economic growth. Fixed effect gave insignificant estimates for FDI which was positively linked to openness. Unemployment and inflation enhanced inequalities in OECD economies in static analysis but insignificant in dynamic analysis.

MacDonald and Tariq Majeed (2011) explored the influence of openness on inequality and poverty from 1970 to 2008 using a panel data from 65 developing economies. Study found that openness does not play any effect on income inequalities while, FDI and inflation exerted a direct influence on inequalities that implies globalization does not had a favourable impact on income distribution.

Székely & Sáman (2012) explored openness-inequality relationship for Latin American economies using tariff rates, year of schooling, real interst rates, gross capital formation, employment and arable land per capita from 1980 to 2010. They found that the increases in inequalities throughout the 1980s and 1990s have been almost totally counteracted by the improvements during the first decade of the twenty-first century as, 75 per cent of the deterioration in income distribution was reversed.

3. METHODOLOGY:

Several studies claimed that openness decreases poverty (Dollar and Kraay 2002; Neutel and Hesmati 2006). On the other side, different researches states that trade openness badly influence the poor and threaten employment and living standards of the poor. For instance, Anwar (2002) was of the view that openness did not reduce poverty and inequality in Pakistan.

Income inequalities in established economies are often at high level as well, which is related to foreign specialization (Atkinson 1999). On the other side, an inverse openness-inequality link can be obtained from standard trade models (Rodriguez and Rodrik 2000; Srinivasan and Bhagwati 1999), although these models are considered to be problematic by Kremer and Maskin (2003). However, there are various economies where inequality reduced when they opened up their economies. Sala-i-Martin (2002a, 2002b) and Lindert and Williamson (2001) found little evidence on openness inequality relation.

To study the effect of trade openness on income distribution in terms of Gini coefficient for Pakistan we use trade openness proxy of (Imports + Exports) as a percentage of GDP while GINI Coefficient has been included for income distribution, a summary statistic of the Lorenz Curve. The value of 0 represents absolute equality, while the value of 100 absolute inequalities.

Others Explanatory variables involved in this study are foreign direct investments (Net Inflows)[10], workers remittances and compensation of employees received (Remit), real interest rate (IR) and urban population (Urban popu). The global trade volume has increases with foreign investment due to the broadness of domestic markets and total trade is also an indicator of the country's integration into the economy (Kentor, 2001). Inflow of foreign remittances also performs a main part in economic openness by integrating a country's economy with the global wealth. We also included Dummy Variable of 1990 in our model for Financial and Structural Reforms.

In order to investigate the impact of openness on income distribution the following model equation will be estimated;

$$Gini_t = \alpha_0 + \alpha_1 FDI_t + \alpha_2 \operatorname{Re} mit_t + \alpha_3 TO_t + \alpha_4 IR_t + \alpha_5 UrbanPopu + \varepsilon_t \quad \text{Eq}\rightarrow 1$$

Where,

Gini Coefficient shows the Income Inequality as the Dependent Variable in the study.

FDI Shows the Foreign Direct Investments Net Inflows at period t.

$\operatorname{Re} mit$ Shows the Workers Remittances and Compensation of Employees Received at period t.

TO Shows the Trade Openness at period t.

IR Shows the Real Interest Rate at period t.

$UrbanPopu$ Shows the Urban Population at period t.

ε Is the Error Term at period t.

Note: Detailed descriptions of all variables are given in Appendix with data sources.

Data Sources:

To explore the effect of trade openness on income distribution and poverty the secondary data of Pakistan is used for the estimation purposes over the period of 1972 to 2008 from various sources including

  ➢ International Financial Statistics of International Monetary Fund (IMF's).

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[10] Measures the extent to which foreign capital penetrates into a country.

➢ World Development Indicators (WDI).

➢ World Income Inequality Database (WIID)

➢ State Bank of Pakistan (SBP)

In independent variables, natural logarithms of income per capita are taken because the data is in Rs. Million. However Trade Openness, Worker Remittances received and FDI (Net inflows) taken as % of GDP. While, Urban population taken as % of total population.

4. EMPIRICAL ANALYSIS AND FINDINGS:

The first step in cointegration analysis is to test the stationarity of variables. It shows that all the variables incorporated in this study are found to be stationary at first difference I(1).

Table 2:
Results of Unit Root Test:

Variables	Level		1st difference	
	Intercept	Trend and intercept	Intercept	Trend and intercept
FDI	-1.915105 (-2.945842) Lag (1)	-3.456239 (-3.544284) Lag (1)	-4.064431* (-2.948404) Lag (0)	-3.930614* (-3.544284) Lag (0)
GINI	-2.810827 (-2.945842) Lag (1)	-3.002305 (-3.544284) Lag (1)	-4.823771* (-2.948404) Lag (0)	-4.747061* (-3.544284) Lag (0)
IR	-2.283080 (-2.945842) Lag (0)	-1.634967 (-3.544284) Lag (0)	-6.087254* (-2.948404) Lag (0)	-6.450637* (-3.544284) Lag (0)
TO	-2.081907 (-2.945842) Lag (1)	-3.010872 (-3.544284) Lag (1)	-6.115155* (-2.948404) Lag (0)	-6.057858* (-3.544284) Lag (0)
Remit	-1.714048 (-2.945842) Lag (0)	-2.186067 (-3.544284) Lag (0)	-5.142801* (-2.948404) Lag (0)	-5.147217* (-3.544284) Lag (0)
UrbanPopu	0.452656 (-2.945842) Lag (1)	-1.200200 (-3.544284) Lag (1)	-4.193904* (-2.948404) Lag (0)	-4.130255* (-3.544284) Lag (0)

The cointegration relationships between Gini, Foreign Direct Investments (Net-Inflows), Remittances Received, Trade Openness, Real Interest Rates and Urbanization has been investigated assuming linear trend in data with an intercept in cointegrating equation using the estimation technique. Table 3 reports Johansen (1998) and Johansen and Juselius (1990) Maximum Likelihood Cointegration Results. We can reject the null hypothesis of no cointegrating vector in favor of Three cointegrating vectors under Trace statistics (λ trace) and Two cointegrating vectors under Maximum-Eigen value (λ max) statistics in six time series at 5 percent level of significance.

Table 3:
Results of Johensen Cointegartion Test:

Sample (adjusted): 1974-2008, included observations: 35 after adjustments

Trend assumption: No deterministic trend (restricted constant)

Series: GINI FDI Remit TO IR UrbanPopu

Exogenous series: D90

Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.719323	136.7631	103.8473	0.0001
At most 1 *	0.654029	92.29380	76.97277	0.0021
At most 2 *	0.555064	55.14482	54.07904	0.0400
At most 3	0.285270	26.80095	35.19275	0.2990
At most 4	0.232270	15.04619	20.26184	0.2237
At most 5	0.152593	5.795093	9.164546	0.2072

Trace test indicates 3 cointegrating eq(s) at the 0.05 level

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.719323	44.46929	40.95680	0.0193
At most 1 *	0.654029	37.14898	34.80587	0.0258

At most 2	0.555064	28.34386	28.58808	0.0537
At most 3	0.285270	11.75476	22.29962	0.6787
At most 4	0.232270	9.251098	15.89210	0.4074
At most 5	0.152593	5.795093	9.164546	0.2072

Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Under the assumption of no deterministic trend in data and intercept and no trend in cointegration equation, we can obtain the equation which is normalized for inflation to obtain meanings from the coefficients are given below;

$$Gini_t = 5.2198 - 0.2444FDI_t + 0.02565\,\text{Re}\,mit_t + 0.05319TO_t + 0.6620IR_t + 0.1032UrbanPopu_t$$

T Val = 4.0707*   4.9471*   2.5008**   5.970*   2.153**   2.978**

[Values in parenthesis showing t statistics values]

Note: * and ** indicate the level of significance at 1% and 5% respectively.

Normalized coefficients with T value shows that all the independent variables reflect significant and standardized relationships. The coefficient of Trade Openness carries a positive sign and statistically significant at 1 percent level of significance, which shows that a 1 percent increase in trade openness brings about 0.0531 percent increase in income inequalities. It is because of the high level of imports as compare to exports in Pakistan trade volumes, imports constitutes of consumer's goods which directly enhances income inequality.

This finding is supported by the empirical results of Kentor (2001), Ghose (2001), Mugerwa (2001), Topalova (2004), Wan, Lu and Chen (2005), Kahai and Simmons (2005), Hussain, et. al. (2009), Bashir and Khan (2011), Székely and Sáman (2012). There is significant positive long run relationship among income inequalities and trade openness in Pakistan and coefficient cleared that 1 percent increment in trade openness increases inequalities by 0.0531 percent. This confirms the rejection of our null hypothesis. While, Calderon and Chong (2001), Reuveny and Quan Li (2003), Jaumotte, et. al. (2008), MacDonald and Tariq Majeed (2011) Faustino and Vali (2011), Georgantopoulos and Tsamis (2011) found negative influence of openness on income inequalities.

The coefficient of foreign direct investments (net inflows) carries a negative sign and statistically significant at 1 percent level of significance and shows that a 1 percent increase in foreign direct investments (net inflow) brings about 0.2444 percent decrease in income

inequalities. This finding is in line with Mundell (1957), Velde (2003), Jaumotte, et. al. (2008), Chaudhry, Hussain and Hasan (2009) and Georgantopoulos and Tsamis (2011) found that FDI (net inflows) has significant negative effect on income inequalities. When investment raises in the economy, employment opportunities increases which reduces income inequalities. While Feenstra and Hanson (1997), Tsai (1995), Jai (2002), Rafael Reuveny & Quan Li (2003), Tian, Wang & Dayanandan (2008) MacDonald & Muhammad Tariq Majeed (2011) found that FDI (net inflows) has significant direct influence on income inequalities means enhances uneven income distribution.

The coefficient of remittances (received) carries a positive sign and statistically significant at 5 percent level of significance and shows that a 1 percent increase in remittances (received) brings about 0.02565 percent increase in income inequalities which means income inequalities raises due to remittances (received) because these are used for consumption purposes not for investments purposes. This finding is not in line with Chaudhry, Hussain and Hasan (2009) and Georgantopoulos and Tsamis (2011) because these studies found that remittances (received) have significant negative effect on income inequalities.

The coefficient of interest rate carries a positive sign and statistically significant at 5 percent level of significance and shows that a 1 percent increase in interest rate brings about 0.6620 percent increase in income inequalities. When interest rate increases, investment reduces which ultimately decreases employment opportunities in the economy and resulted into larger income inequalities. The coefficient of urbanization carries a positive sign and statistically significant at 5 percent level of significance and shows that a 1 percent increase in urban population brings about 0.1032 percent increase in income inequalities. When large number of people migrated to cities, employment opportunities contracted in the economy which ultimately resulted into uneven distribution of income.

Table 4:

Vector Error Correction Estimates:

Sample (adjusted): 1974 2008						
Included observations: 35 after adjustments						
Standard errors in ( ) & t-statistics in [ ]						
Error Correction:	D(GINI)	D(FDI)	D(REMIT)	D(TO)	D(IR)	D(U)
CointEq1	-0.227045	5.654527	51.25931	1.108327	0.438961	0.131811
	(0.12865)	(2.95450)	(17.8914)	(9.20416)	(0.54140)	(0.54735)
	[-1.76487]	[1.91387]	[2.86503]	[0.12042]	[0.81078]	[0.24081]
R-squared	0.429590	0.543695	0.563445	0.311215	0.397459	0.622717
Adj. R-squared	0.156785	0.325463	0.354658	-0.018204	0.109287	0.442277
Sum sq. resids	0.011601	2.845511	104.3472	27.61604	0.095551	0.097662
S.E. equation	0.022458	0.351735	2.129985	1.095763	0.064455	0.065163
F-statistic	1.574716	2.491356	2.698661	0.944739	1.379244	3.451108
Log likelihood	90.54776	-5.744752	-68.77942	-45.51620	53.64735	53.26492
Akaike AIC	-4.488443	1.013986	4.615967	3.286640	-2.379849	-2.357995
Schwarz SC	-3.955181	1.547248	5.149229	3.819902	-1.846586	-1.824733
Mean dependent	0.001114	0.066571	0.128429	0.063286	-0.023889	0.305714
S.D. dependent	0.024457	0.428266	2.651439	1.085924	0.068294	0.087255
Log likelihood	83.02541					
Akaike information criterion	1.369977					
Schwarz criterion	6.124898					

Vector error correction mechanism (VECM) term represents the speed of adjustment back to the long run relationship among the variables. Table 4 presents the results of the error correction model for Pakistan under study for Income Inequalities with Trade Openness

The estimated coefficients show the immediate impact of different independent variables i.e.; (foreign direct investments net inflows, trade openness, remittances received, real interest rates and urbanization) on Gini. The coefficient of the ECT of Gini carries the negative sign and statistically significant at 10 percent level with the speed of convergence to equilibrium of 22.7045 percent. This means that, whenever there is any disturbance in the system in the long

run, in every short-run period, a 22.7045 percent correction to disequilibrium will take place. More specifically, ECT coefficient shows that a deviation from the long run equilibrium value in one period is corrected in the next period by the size of the coefficient. This indicates the stability of the model.

<div align="center">5. CONCLUSION:</div>

The paper has major focus to access the association between openness and income inequalities for Pakistan. The finding doesn't favor the conventional wisdom that opening up the country into the foreign markets has not impressive distributional influence on the income inequality in Pakistan. The study found that foreign capital penetration through investments inflows has inverse influence on income inequalities in Pakistan but due to political instability and inconsistent economic policies, FDI was not allowed to rise considerably.

The other dimension of economic broadness not supports the conventional wisdom in case of Pakistan such as; interest rate, urbanization and remittances also seems to be helpful in decreasing income inequalities but since last twenty years these factor increasing considerably. Due to increased inequality the part of middle class in the income reduced resulting into shrinkage of small and medium size business along with less demand for imports. Although, theoretically free markets should provide the opportunities for poor but the postulated link between openness and income inequality is missing in reality. Openness should not be viewed as a reliable substitute for poverty reduction and even distribution of wealth. The explanation may be that reduced tariff and removal of non-tariff barriers are likely to augment the imports and decrease in employment and output of potential industries.

The study also has few policy implications for less established economies especially for Pakistan. Due to reallocation of resources from non-tradable sector to tradable sector, the adjustment costs overcome the advantages of openness. So in an effort to balance the macroeconomic stability government has to deduct the social expenditures or impose new taxes which make it impossible to obtain the benefits of openness.

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Table of Variables Descriptions

Code	Variable	Definitions	Formula	Units	Sources of Definitions and Data
TO	Trade Openness	Value to which countries allow trade with other countries. Broad economies generally have higher opportunities, at the same time they also face competition from others economies Trade Openness is the sum of exports and imports of goods and services measured as a share of gross domestic product.	(Exports+ Imports) ÷ GDP	% of GDP	WDI, World Bank national accounts data, and OECD National Accounts data files.
FDI	Foreign Direct Investments (Net Inflows)	Sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments.	inflows (new investment inflows less dis investm--ent	% of GDP	WDI, World Bank national accounts data, and OECD National Accounts data files.
Remit	Workers Remittances and Compensat--ion of employees Received	Comprises of current transfers by migrant workers, wages and salaries earned by nonresident workers. Remittances are current private transfers from migrant workers resident in the host country for more than a year. Migrants' transfers are the net worth of migrants who	Sum of three items Workers' remittances , compensati on of employees, and migrants' transfers.	% of GDP	WDI, World Bank national accounts data, and OECD National Accounts data files.

IR	Real Interest Rate	are expected to remain in the host country for more than one year that is transferred from one country to another at the time of migration. Compensation of employees is the income of migrants who have lived in the host country for less than a year. The lending interest rate adjusted for inflation	Current Bank Discount Rate – CPI	Per Annum	International Financial Statistics and data files using World Bank data on the GDP deflator.
Urban Popu	Urban Population	People living in urban areas as defined by national statistical offices.	Calculated using World Bank population estimates and urban ratios from the United Nations World Urbanization Prospects.	% of Total Populat--ion	WDI, World Bank national accounts data, and OECD National Accounts data files.
Gini	Gini Coefficient	Gini index measures the extent to which the distribution of income or consumption expenditure among individuals or households within an		Coeffic--ient OR Index	Surveys of Pakistan Economy & World Income Inequality Database

		economy deviates from a perfectly equal distribution.			