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2 October 2013

Online at <https://mpra.ub.uni-muenchen.de/50337/>

MPRA Paper No. 50337, posted 02 Oct 2013 11:10 UTC

Inequality, Trade and Development: Evidence from Developing Countries

Dr. M Tariq Majeed*

Abstract

This study analyzes the impact of trade on cross-country inequality using a panel data set from 65 developing countries over a long period 1970-2008. This study differs from the existing literature on distributional impact of trade by explicitly noting the importance of development stage in shaping the link. The analysis shows that the effect of trade on inequality depends upon the level of development of a trade integrating economy. Economies that have a high level of economic development acquire a favourable effect of trade while underdeveloped economies suffer from international economic integration. In sum, trade accentuates not ameliorate inequality in countries with low level of economic development.

JEL Classification: C23, D31 and F41

Key Words: Trade; Development; Inequality; Developing Countries

1. Introduction

This paper studies the relationship between trade and inequality. Inequality has increased substantially all over the world during the last three decades of the twenty first century. The inequality is increasing both within and between countries. Similarly, in recent decades, globalization has also increased substantially- whether measured in trade flows, FDI, capital flows, or offshoring- in both developed and developing countries.

These parallel developments have led to a natural conjecture that increasing inequality is a result of increasing trade and therefore now increasing globalization is considered one of the reasons for the increasing trend of inequality because. Until the 1990s, the main theoretical framework to explain the relationship between trade and inequality was the Heckscher-Ohlin (HO) model. In its simplest form, the HO model predicts that abundant factors have more return in an open

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economy, it means in developed countries it is skilled labour which will benefit more from trade and in developing countries it is unskilled labour which will benefit more from trade.

A number of studies published between 1990 and 2010 have shown that inequality has increased in developing countries as a result of trade reforms (see Berman et. al., 1994; Autor et. al., 1998; Harrison and Hanson (1999) and others). Such a positive impact of increasing trade on inequality has undermined the simple theoretical predictions of the HO model. In other words, increasing inequality with increasing globalization was at odds with simple predictions of the HO model. Another problem with the HO model was that it was unable to explain increasing demand for skilled labour with-in industry.

These findings led researchers to explore for other causes of increasing inequality. One main explanation is skilled-biased technology, which implies that changes in technology are biased towards skilled workers. Some other explanations are the weakening of labour unions, unequal access to schooling, and immigration. Overall, most economists were sceptical of assigning central importance to trade as a main cause of increasing inequality.

The literature was at odds with respect to existing trade theories. This led to new theories, which focus on heterogeneous firms, labour market frictions and incomplete contracts. These new theories provide insights into the effects of trade on income inequality. There are number of ways through which trade contributes to inequality. However, this paper mainly focuses the role of development through which trade contributes to inequality.

In the literature, the role of trade in explaining inequality is mainly generalized for all developing countries. However, developing countries at different level of economic development have different prerequisites to take the advantage of trade. The countries at lower levels of economic development have weak trade unions, labour market frictions, unequal access to schooling among others.

This study focuses trade as main cause of inequality, however the study differentiate between low-income and high-income developing courtiers. We argue that the impact of trade on

inequality can vary depending upon the level of economic development for following reasons. First, countries at lower level of economic development lack domestic conditions, which help poor to take the advantage of trade. Second, parallel markets such as labour and financial market are comparatively underdeveloped in these countries. The better domestic markets help poor to take the advantage of increasing trade.

Since independent affect of trade is not helpful to explain the increasing trend of cross-country inequality, this study focuses the importance of economic development in shaping the link between trade and inequality. In other words, this study attempts to investigate whether the inequality impact of trade depends on the level of economic development.

This study attempts to answer the following questions: First, what it the impact of trade on inequality in developing countries? Second, does the inequality impact of trade vary depending upon different levels of development in developing countries?

Rest of the discussion is structured as follows: Section 2 provides a review of the related literature and theory on the predictors of inequality. Section 3 presents an analytical frame work for the study and section 4 provides a discussion on data and estimation procedure. Section 5 puts forward results derived from the research questions and a discussion on these results. Finally, section 6 concludes and provides policy implications.

2. Literature Review

The framework of Heckscher-Ohlin (HO) model, in its simplest form, predicts that a nation specializes in a product, which requires an intensive use of its abundant factors of production. Since developing countries are abundant with low-skilled labour, they specialize in labour intensive products. The demand and wages for low-skilled labour tend to increase during the process of products specialization based on labour intensive production techniques. Thus, increasing wages help to narrow down the existing inequality gaps.

Nevertheless, predicted lower inequality by the HO model depends on the assumption of similar technologies across countries. If this assumption is dropped then distributional effects of trade also depends on technology diffusion from developed nations to developing nations that generates a skill premium. In contrast to the prediction of the HO model, in this situation the demand and wages for high skilled labour tend to increase. Consequently, wage gaps tend to widen in an open economy (see, for example, Berman et. al., 1994; Autor et. al., 1998).

Robbins (2003) defines technological upgrading as “skill enhancing trade hypotheses”. In the literature, many other studies note the skill-enhancing role of trade through upgrading of technologies in the developing world. For example, Barba et. al., (2002) note that increasing imports allow a developing economy to upgrade its technology through the imports of mature and second hand capital goods. Acemoglu (2003) also argues that trade openness leads to technical upgrading by allowing a rise in the international flows of capital goods. When south rapidly adopted the modern skill intensive technologies, demand and wages of skilled labour increased that, in turn, increased inequalities in developing countries.

Technological upgrading in developing countries not only helps to having better access in the markets of developed countries but also saves the sunk costs of technological innovations. A study by Perkins and Neumayer (2005) points out that a lagged developing country directly jumps on relatively new technology and hence exploits the benefits of late comer.

In an open economy, to have a better access in the markets of developed countries, exports also create incentives for replacement of outdated technologies. Yeaple (2005) shows that exports based on updated technologies yield high profits.

In a case study of Mexico, Hanson and Harrison (1999) observe that firms demand more white collar workers in exporting sectors as compared to non-exporting sectors of production. Therefore, increasing exports widen inequalities. Moreover, Berman and Machine (2004) confirm this positive association between exports and inequality for developing countries. These studies build a positive link between exports and inequality but do not link trade to development. This study fills the gap by developing a link between trade, development and inequality for developing countries.

In a recent study, Majeed (2010b) finds out that trade accentuates, not ameliorates, and that it intensifies, not diminishes, inequality in the case of Pakistan.

2.1: Theory of Inequality Determinants

Having discussed the relationship of trade with inequality, this section provides explanation of some other important causes of inequality.

The most important factor, which explains cross-country variation in inequality, is economic development. Kuznets (1955) predicts a non-linear relationship between inequality and economic development. Inequalities tend to increase at lower levels of economic development but fall at higher levels of economic development due to trickle down effects. Ahluwalia (1976) and Majeed (2010b) support the Kuznets's point of view.

The impact of financial development on income inequality is not yet conclusive in the literatures.¹ There are two arguments in the literature: First, a developed financial system helps in reducing inequalities through providing loans to poor. Second, the impact of financial development on inequality is non-linear because initially financial development favors rich,

¹ See Majeed, 2010a; Majeed, 2013, for a detail discussion on the relationship between inequality and finance.

thereby increasing inequalities. However, over time at higher levels of financial development poor also benefit when more people have access to financial system.

The effect of inflation on inequality is uncertain. It can increase inequalities through its effect on individual income and can reduce inequalities in the presence of progressive tax system. The inequality widening effect of inflation is more pronounced when wages fail to chase increasing price levels. In developing countries, trade unions are weak and minimum wage laws are dysfunctional in the presence of weak institutions. Thus, workers are left with less or no rise in wages, while owners of the firms enjoy benefits of rising prices and get further rich (MacDonald and Majeed, 2010).

The role of government in affecting income inequality is critical. The literature is not showing consensus on the relationship between government spending and inequality. Government spending might help in ameliorating inequality, if government revenues collected through taxes and transfer systems are redistributed in favor of poor. Papanek and Kyn (1986) test the impact of government intervention on inequality and results of their study do not support the contention that government spending reduces inequality. They argue that government intervention often benefits the elite such as the political, bureaucratic and military leadership rather than poor². However, some cross-country studies (see, for example, MacDonald), find the inequality reducing effect of government spending.

It is widely believed that higher population growth is associated with higher income inequality. One of the reasons is that dependency burden may be higher for poor group. Deaton and Paxon (1997) argue that population growth increases the size of families in the poor stratum, thereby increasing dependency burden and inequality. Investment in human capital can be expected to reduce income gaps as higher education improves skills, productivity and labour income.

² For a detailed discussion on government spending, elites and corruption see Majeed and MacDonald, 2010; MacDonald and Majeed, 2011.

3. Methodology

In this section, this study introduces a methodological framework for inequality. Following conventional wisdom of the literature on inequality, initially Kuznets curve has been modelled followed by trade, which is the prime motive of this study, and some key variables.

$$\log Gini_{it} = \alpha_{it} + \gamma_1 \log Y_{it} + \gamma_2 \log Y^2_{it} + \varepsilon_{it} \dots \dots \dots (I)$$

$$(i = 1, \dots, N; t = 1, \dots, T)$$

Log Gini_{it} = it refers to the natural logarithm of the Gini Index.

Log Y_{it} = it refers to the natural logarithm of income per capita, adjusted with PPP.

Log Y²_{it} = square term controls nonlinear conditional convergence across the countries.

ε_{it} = it is a disturbance term

Equation (I) is conventionally used to test for the Kuznets hypotheses. The expected signs for γ_1 and γ_2 are positive and negative respectively.

Equation II includes trade which is main focus of this study.

$$\log Gini_{it} = \alpha_{it} + \gamma_1 \log Y_{it} + \gamma_2 \log Y^2_{it} + \gamma_3 [Trade_{it} / Y] + \varepsilon_{it} \dots \dots \dots (II)$$

According to Stolper-Samuelson theorem the expected sign for γ_3 depends on the comparative advantage of an economy relative to its trading partners.

$$\log Gini_{it} = \alpha_{it} + \gamma_1 \log Y_{it} + \gamma_2 \log Y^2_{it} + \gamma_3 [Trade_{it} / Y] + \gamma_4 [Trade_{it} * Development_{it} / Y] + \varepsilon_{it} \dots \dots \dots (III)$$

Equation III introduces an interactive term for trade and development to asses whether the affect of trade varies depending upon the level of development.

Cross-country inequality variation depends on other factors such as government size, education and population growth. Higher targeted government spending could reduce inequalities given

that rent seeking activities are avoided and government spending enhances the possibilities and opportunities for the poor. A rise in human capital can be expected to narrow down the gap between poor and rich as people with high investment in human capital have less chances to fall in poverty trap. Equation (III) can be rewritten as

$$\log Gini_{it} = \alpha_{it} + \gamma_1 \log Y_{it} + \gamma_2 \log Y_{it}^2 + \gamma_3 [Trade_{it} / Y] + \gamma_4 [Trade_{it} * Developmnd_{it} / Y] + \gamma_5 \log G_{it} + \gamma_6 \log HK_{it} + \gamma_7 \Delta Pop_{it} + \varepsilon_{it} \dots (IV)$$

G_{it} = It is natural log of government spending as proxy for government spending on social setor

HK_{it} = It is measured as secondary school enrolment rate.

ΔPop_{it} = It is percentage change in total population.

ε_{it} = it is a disturbance term

4. Data and Estimation Procedure

The income inequality data may not be comparable across countries due to differences in definitions and methodologies. I use Gini coefficient to measure income inequality, which is one of the most popular representations of income inequality. It is based on Lorenz Curve, which plots the share of population against the share of income received and has a minimum value of 0 (case of perfect equality) and maximum value of 1 (perfect inequality).

To make the data more comparable, this study takes data on variables in the form of averages between two survey years. Per capita real GDP growth rates are annual averages between two survey years. A panel data for 65 developing countries for the period 1970-2008 has been assembled with the data averaged over periods of three to seven years, depending on the availability of inequality data. The minimum number of observations for each country is three and the maximum, nine.

5. Results

Estimation procedure for this study has been proceeded as follows: First, parameter estimates have been obtained for all selected developing countries. Second, parameter estimates have been

replicated using alternative econometric techniques to address the possible presence of endogeneity problem and to assess the robustness of results. Third, interactive effect of inequality and trade investigated.

Table1: Inequality, Trade and Development in all Developing Countries

Independent Variables	Dependent Variable: Inequality					
Log (per capita GDP)	0.82 (4.29)*	0.94 (3.82)*	0.89 (3.55)*	0.87 (3.76)*	0.93 (3.71)*	0.82 (3.09)*
Log (per capita GDP) squared	-0.04 (-3.36)*	-0.04 (-2.74)*	-0.04 (-2.48)*	-0.04 (-2.62)*	-0.04 (-2.59)*	-0.04 (-2.04)**
Trade Openness	0.015 (4.46)*	0.018 (4.93)*	0.019 (5.06)*	0.017 (5.01)*	0.018 (4.81)	0.018 (4.60)
Trade and Dev	-0.002 (-4.70)*	-0.002 (-5.14)*	-0.002 (-5.28)*	-0.002 (-5.16)*	-0.002 (-4.94)*	-0.002 (-4.71)*
Human Capital		-0.004 (-7.22)*	-0.004 (-7.33)*	-0.0004 (-0.59)*	-0.001 (-1.76)***	-0.001 (-1.62)***
HFI			.0003 (0.91)	-0.0003 (-1.00)	-0.0003 (-1.14)	-0.0001 (-0.35)
Population				0.12 (7.21)*	0.095 (6.40)*	0.10 (7.01)*
Government Expenditures					-0.006 (-4.49)*	-0.007 (-5.15)*
Inflation						0.001 (4.04)*
Constant	-0.020 (0.03)	-0.71 (-0.76)*	-0.59 (-0.61)*	-0.85 (-0.97)*	-0.095 (-1.00)*	-0.56 (-0.56)
F Stat	27.40 (0.000)	31.86 (0.000)	26.54 (0.000)	31.75 (0.000)	34.60 (0.000)	33.08 (0.000)
Observations	336	272	268	268	267	267
Countries	65	65	65	65	65	65
R Square	0.22	0.33	0.33	0.45	0.50	0.52

Table 1 reports results for inequality effect of trade in all selected developing countries. The parameter estimate on trade is significant with positive sign implying that trade exerts adverse influence on inequality in developing countries. This finding is consistent with the predictions of theoretical models of technological diffusion and skill premium. However, this positive influence disappears when interactive effect of trade and development is estimated. The combined effect of trade and development is negative and significant implying that trade helps to reduce inequalities in countries, which are at higher levels of economic development. Financial development and

government spending help to decrease inequalities while population growth and inflation tend to worsen inequalities.

Table2: Inequality all developing Countries with Alternative Econometrics Techniques

Independent Variables	Dependent Variable: Inequality					
	2SLS	2SLS	LIML	LIML	GMM	GMM
Log (per capita GDP)	1.50 (4.27)*	1.41 (4.23)*	1.52 (4.28)*	1.42 (4.24)*	1.52 (4.12)*	1.43 (4.06)*
Log (per capita GDP) squared	-.07 (-3.25)*	-.07 (-3.15)*	-.07 (-3.26)*	-.07 (-3.16)*	-.07 (-3.14)*	-.07 (-3.05)*
Trade Openness	0.022 (4.73)*	0.023 (5.28)*	0.022 (4.72)*	0.023 (5.27)*	0.021 (3.81)*	0.022 (4.31)*
Trade and Dev	-.003 (-4.79)*	-.003 (-5.43)*	-.003 (-4.77)*	-.003 (-5.41)*	-.003 (-3.87)*	-.003 (-4.46)*
Human Capital	-0.002 (-2.11)**	-0.002 (-2.31)**	-0.002 (-2.11)**	-0.002 (-2.32)**	-0.002 (-2.50)*	-0.002 (-2.74)*
HFI	-.0003 (-0.93)		-.0003 (-0.94)		-.0003 (-0.95)	
Population	0.092 (5.20)*	0.079 (4.90)*	0.092 (5.20)*	0.079 (4.90)*	0.091 (5.64)*	0.080 (4.78)*
Government Expenditures	-0.006 (-3.90)*	-0.006 (-4.29)*	-0.006 (-3.90)*	-0.006 (-4.29)*	-0.006 (-3.95)*	-0.007 (-4.20)*
Inflation	0.001 (2.27)*	0.001 (2.70)*	0.001 (2.26)*	0.001 (2.69)*	0.001 (2.89)*	0.002 (3.42)*
Constant	-3.56 (-2.62)*	-3.16 (-2.46)*	-3.58 (-2.64)*	-3.19 (-2.48)*	-3.55 (-2.54)*	-3.19 (-2.35)*
Wald	227.52 (0.000)	227.01 (0.000)	227.57 (0.000)	227.10 (0.000)	269.93 (0.000)	241.56 (0.000)
Sargan	1.91 (0.17)	2.21 (0.14)	1.93 (0.16)	2.24 (0.13)		
Basman	1.83 (0.18)	2.13 (0.14)	1.84 (0.18)	2.14 (0.15)		
Hansen					1.35 (0.25)	1.62 (0.20)
Observations	203	207	203	207	203	207
Countries	65	65	65	65	65	65
R Square	0.50	0.50	0.50	0.50	0.50	0.50

Table 2 replicates the benchmark findings using alternative econometrics techniques. The coefficient on trade enters with positive sign in all columns (2-7) implying that independent effect of trade on inequality is positive and significant while combined effect of trade and

economic development turns out to be favourable for trade integrating economies. The inequality effect of trade varies depending upon the existing level of economic development. Thus, trade exerts adverse influence on inequality in countries where development levels are lower while it exerts favourable effects in economies, which are relatively developed. Therefore, our benchmark findings are robust to alternative econometrics techniques.

Table 3 replicates the benchmark findings using regional dummy variables. Although trade causes adverse effect on income inequalities, it is possible that this effect is not consistent across regions. Similarly, combined effect of trade and development may not be consistent across regions. In order to assess the robustness of results to the regional effects seven regional dummies are introduced that are East Asia and Pacific, Europe and Central Asia, Middle East and North Africa, Latin America and Carbine, South Asia and Sub Saharan Africa. Our benchmark findings remain consistent after controlling for regional fixed effects.

Table3: Inequality all developing Countries: controlling for regions

Independent Variables	Dependent Variable: Inequality					
	2SLS	2SLS	LIML	LIML	GMM	GMM
Log (per capita GDP)	1.61 (5.32)*	1.45 (4.62)*	1.61 (5.33)*	1.48 (4.64)*	1.62 (6.39)*	1.43 (5.19)*
Log (per capita GDP) squared	-.08 (-4.27)*	-.08 (-4.14)*	-.08 (-4.28)*	-.08 (-4.15)*	-.08 (-5.14)*	-.08 (-4.65)*
Trade Openness	0.02 (6.07)*	0.014 (3.51)*	0.02 (6.05)*	0.014 (3.50)*	0.02 (5.73)*	0.01 (3.32)*
Trade and Dev	-.003 (-6.04)*	-.002 (-3.52)*	-.003 (-6.02)*	-.002 (-3.52)*	-.003 (-5.78)*	-.002 (-3.31)*
Human Capital	-0.001 (-0.83)	-0.0001 (-0.17)*	-0.001 (-0.84)	-0.0001 (-0.17)	-0.001 (-1.36)	-0.0003 (-0.47)
Population	0.04 (2.07)*	0.025 (1.51)	0.04 (2.07)*	0.025 (1.51)	0.03 (2.39)*	0.02 (1.41)
Government Expenditure	-0.003 (-2.39)*	-0.003 (-2.21)*	-0.003 (-2.39)*	-0.003 (-2.22)*	-0.004 (-2.75)*	-0.004 (-2.75)*
Inflation	0.001 (2.67)*	0.001 (1.80)***	0.001 (2.66)*	0.001 (1.79)***	0.001 (3.55)*	0.001 (2.55)*
Constant	-3.77 (-3.21)*	-2.57 (-2.03)*	-3.82 (-3.23)*	-2.63 (-2.06)*	-3.77 (-3.85)*	-2.47 (-2.20)*
East Asia & Pacific	-0.19 (-6.31)*	-0.20 (-2.26)*	-0.18 (-6.32)*	-0.20 (-2.27)*	-0.19 (-6.65)*	-0.19 (-2.99)*
Europe & Central Asia	-0.28 (-7.41)*	-0.29 (-3.56)*	-0.28 (-7.39)*	-0.29 (-3.57)*	-0.27 (-9.54)*	-0.27 (-5.63)*
Middle East & North Africa	-0.25 (-5.56)*	-0.26 (-2.58)*	-0.25 (-5.57)*	-0.26 (-2.59)*	-0.25 (-6.97)*	-0.24 (-3.28)*
Lat America & Caribbean		0.04 (0.47)		0.04 (0.45)		0.06 (0.85)
South Asia		-0.23 (-2.58)*		-0.23 (-2.34)*		-0.21 (-2.82)*
Sub-Saharan Africa		-0.02 (-0.17)		-0.02 (-0.16)		-0.01 (-0.10)
Wald	441.12 (0.000)	560.15 (0.000)	411.71 (0.000)	559.71 (0.000)	619.88 (0.000)	917.89 (0.000)
Sargan	3.82 (0.15)	3.26 (0.20)	3.90 (0.14)	3.31 (0.19)		
Basman	3.64 (0.16)	3.04 (0.22)	1.83 (0.16)	1.53 (0.22)		
Hansen					3.81 (0.15)	3.13 (0.21)
Observations	207	207	207	207	207	207
Countries	65	65	65	65	65	65
R Square	0.66	0.72	0.65	0.72	0.65	0.72

Table4: Inequality all developing Countries: controlling for regions and time

Independent Variables	Dependent Variable: Inequality					
	2SLS	2SLS	LIML	LIML	GMM	GMM
Log (per capita GDP)	1.42 (4.25)*	1.53 (4.36)*	1.43 (4.27)*	1.55 (4.37)*	1.45 (4.10)*	1.56 (4.23)*
Log (per capita GDP) squared	-.07 (-3.13)*	-.07 (-3.30)*	-.07 (-3.14)*	-.08 (-3.31)*	-.07 (-3.05)*	-.08 (-3.21)*
Trade Openness	0.02 (5.26)*	0.02 (4.74)*	0.02 (5.25)*	0.02 (4.72)*	0.02 (4.15)*	0.02 (3.71)*
Trade and Dev	-.003 (-5.42)*	-.003 (-4.81)*	-.003 (-5.40)*	-.003 (-4.78)*	-.002 (-4.32)*	-.003 (-3.79)*
Human Capital	-0.002 (-2.55)*	-0.002 (-2.37)*	-0.002 (-2.56)*	-0.002 (-2.38)*	-0.002 (-2.98)*	-0.002 (-2.79)*
HFI		-.0004 (-0.94)		-.0004 (-0.95)		-.0003 (-0.94)
Population	0.08 (4.73)*	0.09 (5.07)*	0.08 (4.73)*	0.09 (5.07)*	0.08 (4.46)*	0.09 (5.31)*
Government Expenditures	-0.006 (-3.77)*	-0.005 (-3.30)*	-0.006 (-3.77)*	-0.005 (-3.30)*	-0.006 (-3.53)*	-0.006 (-3.27)*
Inflation	0.001 (2.49)*	0.001 (2.08)**	0.001 (2.48)*	0.001 (2.07)**	0.001 (3.11)*	0.001 (2.55)*
Constant	-3.11 (-2.40)*	-3.59 (-2.64)*	-3.15 (-2.43)*	-3.64 (-2.66)*	-3.20 (-2.35)*	-3.66 (-2.61)*
1980s	-0.10 (-1.08)	-0.09 (-0.74)	-0.10 (-0.82)	-0.10 (-0.74)	-0.10 (-1.56)	-0.09 (-1.55)
1990s	-0.13 (-1.08)	-0.13 (-1.06)	-0.13 (-1.08)	-0.13 (-1.06)	-0.13 (-2.06)**	-0.13 (-1.24)**
2000s	-0.11 (-0.90)	-0.10 (-0.82)	-0.11 (-0.91)	-0.10 (-0.82)	-0.11 (-1.56)	-0.10 (-1.57)
Wald	231.57 (0.000)	232.54 (0.000)	231.72 (0.000)	232.63 (0.000)	263.89 (0.000)	294.40 (0.000)
Sargan	2.87 (0.23)	2.48 (0.29)	2.92 (0.23)	2.51 (0.29)		
Basman	2.72 (0.26)	2.32 (0.31)	1.37 (0.26)	1.17 (0.31)		
Hansen					2.47 (0.29)	2.20 (0.33)
Observations	207	203	207	203	207	203
Countries	65	65	65	65	65	65
R Square	0.50	0.50	0.50	0.50	0.50	0.50

Table 4 replicates the benchmark finding using time related fixed effects. Time dummy variables control time related fluctuations in the data. This is possible that our benchmark findings are not

consistent across different decades. In order to control these effects four dummy variables-1970s, 1980s, 1990s, and 2000s- have been controlled. Our results are robust to the inclusion of time specific effects. The independent effect of trade on inequality is inequality widening while combined effect of trade is inequality narrowing. Therefore, relatively developed economies are in better position to take the favourable effects of trade.

6. Conclusion

This study examines the impact of trade on cross-country inequality using a panel data set from 65 developing countries over a long period 1970-2008. This study differs from the existing literature on distribution impact of trade by explicitly noting the importance of different development levels in shaping the link.

Is trade in developing countries a blessing or a curse? The evidence presented in this paper suggests that the answer to this question is that it is “mixed blessing”: on average trade does widen inequality in our sample of developing countries. However, the good news of the paper is that the size and sign of the impact depends on a level of development that is amenable to policy action.

The results reported in this paper show that the effect of trade on inequality could be either way depending upon the level of development of a trade integrating economy. Those countries that have a high level of economic development seem to acquire a favourable effect while underdeveloped economies suffer. Thus, trade accentuates not ameliorate inequality in countries with low level of economic development.

The analysis implies that poor of the underdeveloped countries suffer from trade and therefore, these countries need more protectionist policies to safeguard the interests of poor while countries at higher levels of economic development may follow more trade-liberalized policies as trade is not harmful for poor in these countries.

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Appendix

Table 5: Description of Variables

Variable name	Definitions and Sources
Per capita real GDP	Per capita real GDP growth rates are annual averages between two survey years and are derived from the IMF, WDI and International Financial Statistics (IFS) databases.
Gini coefficient	It is a measure of income inequality based on Lorenz curve, which plots the share of population against the share of income received and has a minimum value of zero (reflecting perfect equality) and a maximum value of one (reflecting total inequality). The inequality data (Gini coefficient) are derived from World Bank data, UNDP and the IMF staff reports.
Secondary school enrolment	The secondary school enrolment as % of age group is at the beginning of the period. It is used as a proxy of investment in human capital and derived from World Bank database.
Inflation	Inflation rates, annual averages between two survey years, are calculated using the IFS's CPI data.
Credit as % of GDP	Credit as % of GDP represents Claims on the non-financial private sector/GDP and is derived from 32d line of the IFS.
M2 as % of GDP	It represents Broad money/GDP, and is derived from lines 34 plus 35 of the IFS.
Trade Liberalization	It is the sum of exports and imports as a share of real GDP. Data on exports, imports and real GDP are in the form of annual averages between survey years.
HFI	The level of Financial Intermediation is determined by adding M2 as a % of GDP and credit to private sector as % of GDP.