



Munich Personal RePEc Archive

# **Relative Factor Return Gaps in Labour Markets and Global Integration**

Mamoon, Dawood

Institute of Social Studies

May 2007

Online at <https://mpra.ub.uni-muenchen.de/3045/>

MPRA Paper No. 3045, posted 01 May 2007 UTC

# Relative Factor Return Gaps in Labour Markets and Global Integration

Dawood Mamoon  
Institute of Social Studies (ISS)  
PO Box 29776  
2502 LT, The Hague, The Netherlands  
[Mamoon@iss.nl](mailto:Mamoon@iss.nl)

May2007

## ABSTRACT

We estimate the role of openness and integration in welfare generation in a cross country framework. Once controlling for institutions, openness is generally associated with increased wage inequalities across nations. However the results for trade policy are mixed. Decrease in import taxes increase wage inequality, whereas decrease in export taxes has an egalitarian effect. The results are applicable only to the larger sample of developed and developing countries. If the sample is restricted to developing countries, protection by means of export and import taxes is good for unskilled workers as higher trade taxes seem to put a downward pressure on the wage gaps between skilled and unskilled. The results highlight the bottle neck faced by both developing and developed countries in WTO talks which have not been successful as yet in terms of further decrease in trade taxes. In case this situation prevails, the paper calls for more South-South trade which would enable developing countries to decrease the relative wage gaps among their labour force.

JEL Codes: O1, N40

Key Words: Redistribution, Inequality, Cross Section Models  
(January 2006)

## 1. Introduction:

To date, most of the countries in our global village have embraced or initiated processes of liberalization. The idea is to follow neo-classical paradigm of free markets in order to achieve variety of economic as well as social objectives, as free markets are assumed to be one of the key catalysts for growth and its determinants. This belief in the efficacy of free markets has also been the basic guiding principle of contemporary globalization.

Many studies have shown that trade is not only the engine of growth but it also sustains it (e.g. Srinivasan and Bhagwati, 2001; Dollar and Kraay, 2004). It is also believed by the proponents of 'free markets' that the countries, developing as well as developed ones, who have opened up their economies more, have achieved better economic performance. For example, developing countries that opened up in the 1990s witnessed faster growth than the rich countries and hence are catching up. On

the other hand it is asserted that the non globalizing part of the developing world is falling further and further behind (Dollar and Kraay, 2004). The accession to global economy has indeed brought prosperity to different areas in the world (Sen, 2002). In contrast with the general perception<sup>1</sup>, there is also some evidence that world poverty and inequality is declining. Sala-i-Martin (2002) in his much publicized paper, has shown the fraction of the world's population below the poverty line (defined as an income of \$2 a day in constant 1985 dollars) has fallen to 18% in 1998 from 44% in 1970, where as overall inequality (Gini-coefficient)<sup>2</sup> has fallen to 0.63 in 1998 from 0.66 in 1970<sup>3</sup>.

Dollar and Kraay (2004) have shown that openness to international trade in particular appears to benefit poor people as much as everyone else. The study pointed out the experience of countries in the Asia and Pacific region (i.e., the Republic of Korea, Singapore, and Taipei, China) which contains a broad range of examples concerning both trade liberalization and poverty reduction. The paper also implied that reforms on average have had little effect on income distribution. Other recent cross country studies also emphasized opening up as necessary policy tool for poverty alleviation. For example, many studies attribute high growth rates achieved by China and India to their opening up in 80s and 90s, whereas the same period is associated with a decline of incidence of poverty from 28% in 1978 to 9% in 1998 in China and from 51% in 1978 to 27% in 2000 in India respectively (see Srinivasam and Bhagwati 2002).

All in all proponents of globalization are confident that free trade carries significant pro poor growth effects. However, the increasing concentration of world poverty in some regions of the world (e.g. Sub Saharan Africa) and instances of rise in spatial inequality<sup>4</sup> in developing countries which have opened up (i.e. China, Vietnam, Mexico, Brazil, Chile, Columbia and Venezuela etc) implies that processes of growth needs a careful evaluation and we have to exhaust all possible channels through which poverty is affected. For example, trade might very well be good for poor because it is good for growth but if trade amplifies inequalities between income groups, it cannot claim to be the harbinger of welfare generation because income distribution is no less a vital determinant of poverty than growth itself.

Behrman et al (2001) noticed that in 7 out of 18 Latin American countries that initiated market reforms in the mid 1980s, inequality has actually increased in recent times. The rest of the economies in their sample showed that inequality was approximately same in 1990s to the levels of 1980s. Jayasuriya (2002), though accepting that liberalization has tended to reduce consumption poverty in South Asia, joins the critics<sup>5</sup> of Dollar and Kraay's findings concerning neutral distributional effects of liberalization.

It is further noticed in many studies that liberalization process in many developing countries seems to be biased against low-skilled labor. The empirical verification in this regard comes mainly from Latin American region primarily because most of the economies in the region undertook rigorous reform policies in the mid 1980s as part of their structural adjustment plans and also witnessed grappling inequality in Post reform periods. Ligovini et al (2001) found out that inequality in Mexico rose sharply between 1984 and 1994 and rising returns to skill labor accounted for 20 percent of

the increase in the inequality in household per capita income. Similarly, Hanson and Harrison (1999) found that the reduction in tariffs and the elimination in import licenses account for 23 percent increase in the relative wages of skilled labor over the period of 1986-1990 thus providing further evidence for the role liberalization played in rising inequality in Mexico. Other country studies on Brazil, Chile, Colombia and Venezuela, also show that skilled workers received increased premiums after liberalization when compared to their unskilled counterparts (World Bank, 2001).

Such empirical evidence contradicts the basic trade theory which suggests that trade liberalization would result in an increase in demand for low-skilled in a developing country, thereby improving the relative earnings of this group compared with the more skilled. The evidence further feeds the fears of Ravallion (2003), who coined the possibility that openness to trade can lead to the demand for relatively skilled labor, which tends to be more inequitably distributed in poor countries than rich ones. He also proposed caution regarding the results of David and Dollar (2004) paper concerning neutral inequality effects of trade reform on the base of latter's methodology and referred to his own empirical work which found that reform process do carry unequal distributional effects.

The rationale for expecting an effect of trade on wage inequality is based on the standard Heckscher-Ohlin-Samuelson (H-O-S) trade model. As Slaughter (2000) puts it: "... [free] trade lowers the real wage of the scarce factor and raises that of the abundant factor compared to autarky" (p. 131). Assuming that developed countries are generally abundant in skilled labor, increasing trade with developing countries, which are unskilled labor abundant, should raise the wages of skilled workers relative to unskilled in developed countries. Where as, the returns to unskilled labor should increase in developing countries with the opening up of trade with developed countries.

In the simple H-O-S theorem an explanation for rising inequality after liberalization can be that developing countries protect the unskilled intensive of the two goods, and not the skill intensive prior to liberalization. So after liberalization the producers of unskilled intensive good face increased costs amid more outside competition in the absence of government subsidies. Thus an increased downward pressure is exerted to the wages of the unskilled labor force employed in the production of that unskilled good.

However, in the real world there are more than two countries, more than two products and sufficiently dissimilar factor endowments across all the countries. A country which is unskilled abundant in a global sense can still experience wage inequality from opening up if that country is skill abundant in the regional sense. There may be a sufficiently wide range of endowments across countries so that different countries make different products – i.e., countries are in different "cones". Thus even if the developing countries produce in similar sectors among themselves, they will have different comparative advantages because patterns of protection might not only reflect they are unskilled abundant globally but also they are unskilled abundant regionally. A middle income developing country, which is unskilled abundant relative to developed countries but skill abundant relative to low income developing countries,

can have a comparative disadvantage in unskilled labor vis-a vis these low income countries and protection of unskilled labor in these middle income developing economies is a natural outcome. Thus when the tariffs are abolished the unskilled labor see fall in their wages. Leamer (1998) provides supporting evidence by showing that world relative labor endowments are much more finely distributed than the simple skill-abundant or unskilled-abundant dichotomy: Countries like Mexico may very well be globally unskilled abundant yet locally skill abundant, where as countries like China may be unskilled abundant both globally and locally. This explains why unskilled labor is protected in Mexico. Wood (1999) argues that the entry of countries like China, India, Bangladesh, Pakistan and Indonesia in the world markets for goods with a high content of unskilled labor in the mid- 1980s has an important impact on income inequality of middle income countries, particularly those in Latin America. His argument is that increased supply of unskilled labor intensive goods changed the structure of supply of goods in the world market, reducing their prices and the return to factors involved in the production of such goods. This harmed the countries which had some comparative advantage in their production. Vos (2003) noted that Latin American exports lost their competitiveness in the global markets after trade liberalization. As a consequence, these countries are pressured to change their production techniques in a search for comparative advantage in the production of goods which use semi-skilled labor, resulting in an increase in the demand for this type of labor and therefore causing wage dispersion.

The paper tries to find the effects of trade liberalization on wage inequality in a cross section setting. The rest of the paper is organized as follows: section 2 presents the data and methodology, section 3 contains the empirical results, and finally section 4 concludes with some policy implications.

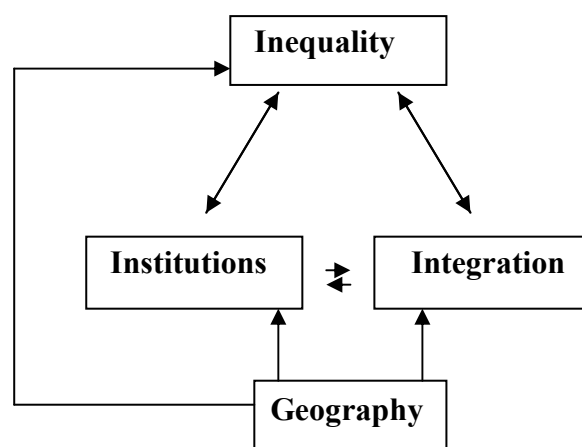
### **Data and Methodology:**

We incorporate not 1 but 8 various concepts of openness and trade policy in our regression model in order to carry out a robustness check for our results on institutions. We have carefully chosen three specific measures of openness. The ratio of nominal imports plus exports to GDP (*llopen*) is the conventional openness indicator (see Frankel and Romer, 1999; Alcalá and Ciccone, 2002; Rose, 2002; Dollar and Kraay, 2003; Rodrik et al, 2004). Two other measures of openness are overall trade penetration (*tarshov*) derived from World Bank's TARS system and overall import penetration (*Impnov*) respectively (see Rose, 2002). Neither of these measures are direct indicators of trade policy of a country, pointing only towards the level of its participation in international trade. There are indicators of trade restrictiveness acting as measures of trade policy (Edwards, 1998; Greenaway et al, 2001, Rose 2002). Import tariffs as percentage of imports (*Tariffs*), tariffs on intermediate inputs and capital goods (*Owti*), trade taxes as a ratio of overall trade (*Txtrg*) and total import charges (*Totimpov*) can all be considered as good proxies for trade restrictiveness and have also been employed in our study. Other measures which capture restrictions in overall trade are non-tariff barriers. We use overall non-tariff coverage (*Ntarfov*) and non-tariff barriers on intermediate inputs and capital goods (*Owqi*) as two proxies for non-tariff barriers (see Rose, 2002). Moreover there is also a trend in the trade literature to use composite measures of trade policy. Edwards

(1998) advocates the Sachs and Warner (1995) openness index (*Open80*) as a proxy for openness.

Many recent studies show that institutions and integration are also endogenous (i.e., Rodrik et al, 2004) whereas there are issues of two way causality between inequality and institutions (i.e., see Keefer and Knack, 2002; Chong and Gradstein, 2004). Chong and Gradstein (2004) find strong evidence of bi-directional causality between institutions and inequality. Inequality may affect the quality of institutions. For example, high inequality will prevent the poor from investing in education or the ruling class may not invest in education so that the poor majority will not be politically active thus undermining the development of necessary social and political institutions. Easterly (2001) and Keefer and Knack (2002) suggests that social polarisation negatively affects institutional quality. The countries with poor institutions are also likely to have high inequality. For example in Russia in the 1990s, a small group of entrepreneurs exploited their political power to promote their own interests, subverting the emergence of institutions committed to the protection of smaller share holders and businesses. According to the Corruption Perceptions Index published by Transparency International, among the transition economies, Estonia is placed 28, and Hungary 31; whereas Russia is placed 79, and Ukraine 83. In these transition economies, weak performance of public institutions, infringement of property rights in favour of influential parties, lower willingness to use courts to resolve business disputes, lower level of tax compliance and higher levels of bribery all have been strongly correlated with inequality (Hellman and Kaufman, 2002). Similarly, in several Latin American countries, the ruling elites, the military and large businesses impeded smaller business interests giving rise to significant informal sector. Chong and Gradstein (2004) have shown that when the political bias in favour of the rich is large, income inequality and poor institutional quality may reinforce each other, indicating endogeneity between the two.

**Figure 1: Endogeneity between Integration, Institutions and Inequality**



Any empirical analysis which takes trade as a pure exogenous factor while analysing its effects on inequality may lead to miss-specification bias. We construct our inequality model in correspondence with the reduced form growth model proposed by Rodrik et al (2004) where trade and institutions are taken as endogenous to each other

as well as the dependent variable which in our case is inequality. See figure 1 for illustration.

Our basic inequality equation would look like:

$$\text{Inequality} = f(\text{Institutions, Integration, Geography}) \dots\dots\dots (1)$$

Here in line with Rodrik et al (2004), we assume geography is a pure exogenous concept.

Much recently Kaufman et al (2002) formulated aggregate governance indicators for six dimensions of governance covering 175 countries. They relied on 194 different measures of governance drawn from 17 different sources of subjective governance data constructed by 15 different sources including international organizations, political and business risk rating agencies, think tanks and non governmental organizations. The governance indicators have been oriented so that higher values correspond to better outcomes on a scale from -2.5 to 2.5. They are categorized as rule of law (*Rl*), political stability (*Ps*), regulatory quality (*Rq*), government effectiveness (*Ge*), voice and accountability (*Va*) and control of corruption (*Ctc*). We add two more political indicators namely democracy (*Demo*) and autocracy (*Auto*) to our analysis from Polity dataset whereas, both ranging from 0 to 10.

To capture inequality we not only take GINI income inequality index (*Gini*) from UNU/WIDER World Income Inequality Database (WIID) but also we employ UTIP-UNIDO Theil measure (*Theil*) calculated by University of Texas Inequality Project (UTIP) which captures wage inequality between skilled and unskilled labour. This is motivated by several considerations. First, comparable and consistent measures of income inequality, whether on a household level or per head basis are difficult, almost implausible and generally fails to provide adequate or accurate longitudinal and cross-country coverage. On the other hand, inequality of manufacturing pay, based on UNIDO Industrial Statistics provides indicators of inequality that are more stable, more reliable and more comparable across countries because UNIDO measures are based on a two or three digit code of International Standard Industrial Classification (ISIC) a single systematic accounting framework. Furthermore, manufacturing pay has been measured with reasonable accuracy as a matter of official routine in most countries around the world for nearly forty years (Galbraith and Kum, 2002).

Corresponding to equation 1, our inequality model based on *Theil index* has 4 equations; whereas each equation corresponds to a different institutional or integration classification. The model specifications for *Gini* contain same 2 equations each with same variable specifications.

$$\text{Theil}_{1i} = \alpha_1 + \beta_1 I_i + \chi_1 \text{Open}_i + \varepsilon_{1i} \dots\dots\dots 2$$

$$\text{Theil}_{5i} = \alpha_5 + \beta_5 I_i + \chi_5 TP_i + \varepsilon_{5i} \dots\dots\dots 3$$

The variable  $Theil_i$  is Theil Index in a country  $i$ ,  $I_i$ ,  $Open_i$  and  $TP_i$  are respectively measures for institutions, general openness in the economy and trade policy and  $\varepsilon_i$  is the random error term.

As we have discussed, there are potential endogeneity problems between institutions and integration and between institutions and inequality itself. To this effect we have first regress our institutional, trade policy and openness proxies on a set of instruments. Frankel and Romer (1999) suggests that we can instrument for openness by using trade/GDP shares constructed on the basis of a gravity equation for bilateral trade flows. The FR approach consists of first regressing bilateral trade flows (as a share of country's GDP) on measures of country mass, distance between the trade partners, and a few other geographical variables, and then constructing a predicted aggregate trade share for each country on the basis of coefficients estimated. Hall and Jones (1999) employed distance from the equator and the extent to which the primary languages of Western Europe are spoken as first languages today as instruments for institutions. Hall and Jones made an argument that the instruments are not correlated with the error term. Acemolgu, Johnson and Robinson (2001) identify the mortality of European settlers as a potential instrument. Using two ex post assessments of institutional quality- risk of expropriation by the government and constraints on the executive- as measures of institutions, they showed that settler mortality is a strong predictor of institutions. However there are two drawbacks for AJR instrument. First, the data is only available for 64 countries. Though Rodrik et al (2004) have extended it to 80 countries; it still covers a relatively low number when compared to 'the extent to which the primary languages of Western Europe are spoken as first languages today' which covers as many as 140 countries. Secondly, according to Glaeser et al (2004b), AJR instrument of settler mortality fails to be orthogonal to the error term. 'Settler mortality is strongly correlated not just with ancient, but also with the modern, decease environment, suggesting that it might be the decease environment, rather than history, that matters for economic development. Secondly settler mortality is strongly correlated with human capital accumulation, suggesting that it cannot be used as an instrument for institutions (Glasear et al, 2004:8).' Thus following Dollar and Kraay (2003) and Hall and Jones (1999), we use 'fractions of the population speaking English ( $Engfrac$ ) and Western European languages as the first language ( $Eurfrac$ )' as an instrument for legal, economic and political institutions. Since we are using years of schooling and adult literacy rate as a proxy for social institutions we looked for instruments which can capture the qualitative and quantitative properties in education sector. Total public spending on education (as a percentage of GDP) and primary public-teacher ratio are the two instruments proposed by Mamoon and Murshed (2005). The former instrument captures the quality of education and the later instrument captures the quantity of education. As in Rodrik et al (2004), we employ 'distance from the equator' as another instrument (proxy for geography) also employed by Hall and Jones (1999).

$$I_i = \sigma_1 + \zeta_1 Eng_i + \theta_1 Eur_i + \vartheta_1 FR_i + \tau_1 Disteq + E_{1i} \dots\dots\dots 4$$

$$Open_i = \sigma_4 + \zeta_4 Eng_i + \theta_4 Eur_i + \vartheta_4 FR_i + \tau_4 Disteq + E_{4i} \dots\dots\dots 5$$

$$TP_i = \sigma_5 + \zeta_5 Eng_i + \theta_5 Eur_i + \vartheta_5 FR_i + \tau_5 Disteq + E_{5i} \dots\dots\dots 6$$



Where  $Eng_i$  and  $Eur_i$  are our instruments for legal, economic and political institutions referring to fractions of population speaking English and European languages respectively.  $FR_i$  is instrument for openness and trade policy.  $Disteq_i$  is proxy for geography showing distance from the equator. At the second stage the predicted values of respective institutional, openness and trade policy variables are employed in the inequality and income share equations.

#### 4. Results:

Table 1 show results of IV augmented regression coefficients for several openness and trade policy proxies when the dependent variable is *Theil Index*. First we would like to mention here that on the line of Dollar and Kraay (2004), we have also found that there is no systematic relationship between changes in trade volumes and changes in household income inequality (*Gini*). So here we only discuss the results based on *Theil Index*.

The results for openness indicators confirm that increased globalisation captured by an increase in the movement of goods and services leads to augmentation in wage inequality. However, the results for trade policy are mixed. The trade policy variables which have a significant relationship with wage inequality are overall trade taxes (*Txtrdg*), total import charges (*Totimpov*) and non tariff coverage (*Ntarfov*). *Totimpov* and *Ntarfov* are negatively associated with wage inequality and the relationship is significant in 8 out of 10 cases for *Totimpov* and 3 out of 10 for *Ntarfov*. The results depict that if a country follow a more open policy by decreasing import taxes as well as non tariff barriers, it will have a positive effect on wage inequality. In developed countries, wage inequality is a phenomenon caused by increase in outsourcing to the developing countries. Thus high import taxes may be used as a protection policy to provide some kind of breathing space to lower skilled worker who are increasingly loosing jobs to developing country labour force. Increase in wage inequality in developing countries can be linked to lower import taxes or non tariff barriers by suggesting that due to their comparative disadvantage in skilled labor production activities domestically, protection against their unskilled intensive agricultural goods in developed countries and better export possibilities in skill intensive goods like in case of Asian Tigers, China or India, protection of import substitution sector is promoted as a pro growth strategy. Our third significant variable (*Txtrdg*) has a positive relationship with wage inequality and it is significant in 5 out of 8 cases. This suggests that any decrease in trade taxes (export taxes specifically<sup>6</sup>) will lead to a decrease in wage inequality. Promoting exports have an egalitarian effect then accepting imports. Here the conflicting results among different measures of trade policy are due to the fact that decreasing the price for exporting goods may lead to their higher demand following economies of scale argument and thus rise in wages of the most extensively used labor, whereas protection on imports may make more sense considering lack of consensus among developed and developing countries in simultaneously decreasing levels of protection in their import substitution sectors. Decreasing import taxes may have strong political effects for both developed and developing countries if not done simultaneously by both economic groups. That is the reason why World Trade Organisation (WTO) talks have yet to reach a consensus. However, here one may give a policy recommendation that at least decreasing export taxes by any country irrespective of its belonging to any economic group may help to

wage the gap between skilled and unskilled labor because more exports may mean more growth. Decreasing export taxes in a country should also be supplemented by a smart export promotion policy to compete in the international markets. However, one may take caution on this because generally the least developed countries export capacity to developed nations has been curtailed due to high protection in agriculture sector. Developing countries are more able to export semi skilled or skilled intensive goods as can be seen in Indian and Chinese case. Such export patterns are again linked with higher wage inequalities by many country case studies. Here taking developed countries out of the sample may also change our results for  $Txtrdg$  showing decrease in export taxes increasing wage inequality. We find  $Txtrdg$  to be positively associated with wage inequality when sample is reduced to developing countries only. In a scenario where higher exports are positively related with wage inequality in developing countries, more South-South trade under regional agreements may lead to fairer trade outcomes if least developed countries are able to export agriculture goods or primary products to other developing countries who are relatively higher in technological ladder and who are following richer consumption patterns.

### **Conclusions:**

This paper is an attempt to gauge the effect of integration on inequality. We find that openness is generally related with higher wage inequality, though its impact on income inequality is insignificant at best. This result is also in line with recent literature. Our results highlight the fear among developed and developing countries to decrease import taxes which has also lead to the continuous failure of WTO talks as the results show that opening up of protected sectors to increased international competition by revoking import taxes lead to higher wage inequality in both developed and developing countries. There are two solutions though. Either developed countries unilaterally decrease their import taxes on primary products, thus allowing even higher export share of developing countries in these products which would raise the wages of unskilled labour or alternatively more trade is carried out among developing countries which lie in different stages of technological ladder through more refined regional trade agreements.

---

<sup>1</sup> See for example Aisbett (2003) for detailed commentary about the basis of general perception among public that global poverty or inequality is on the rise.

<sup>2</sup> There are three categories of Gini-coefficients. Category 1 inequality takes into account per-capita incomes of the respective countries. In category 2, the per capita incomes are weighted by population size. However category 3 inequality takes into account within country inequalities, which makes it superior to the former categories. Sala-i-Martin (2002) employs category 3 measure of inequality. For a brief commentary on the three categories of inequality see Murshed (2003).

<sup>3</sup> The paper also estimate other popular indexes of inequality i.e., the variance of log-income, two of Atkinson's indexes, the mean logarithmic deviation, The Theil Index and the coefficient of variation. All indexes show the same decreasing trends in inequality over the selected time period. However, Milanovic (2003) argued that Sala-i-Martin made many oversimplifying assumptions and failed to address two basic data problems (too few data to derive countries' income distributions, and sparseness of such data in time). According to Milanovic, Sala-i-Martin ended up by producing a population-weighted inter-national distribution of income augmented by a constant shift parameter and not a distribution of income among world citizens which has made his results dubious. Additionally in his recent paper.

<sup>4</sup> Sala-i-Martin (2002) accepts that despite decreasing trends of Global poverty and inequality levels, there is some increase in within-country disparities

---

<sup>5</sup> Many studies have criticized the results of Dollar and Kraay by raising the apparent weaknesses in their methodology and variable choice. See Ravallion (2003), Amann et al (2002), Srinivasam and Bhagwati (2002).

<sup>6</sup> In trade taxes, the effect of export taxes is more dominant (see Mamoon and Murshed 2005) for details).

## References:

- Acemoglu, D., S. Johnson and J. A. Robinson (2001) 'The Colonial Origins of Comparative Development: An Empirical Investigation,' *American Economic Review*, 91, No. 5, pp. 1369-1401, [http://emlab.berkeley.edu/users/chad/e236c\\_f04/ajr2001.pdf](http://emlab.berkeley.edu/users/chad/e236c_f04/ajr2001.pdf)
- Aisbett, E. (2003) 'Globalization, Poverty and Inequality: are the criticisms vague, vested, or valid?' NBER Pre-Conference Paper, NBER Pre-Conference on Globalization, Poverty and Inequality Oct 24-25.
- Alcala, F. and A. Ciccone (2001) 'Trade and Productivity,' CEPR Discussion Paper No. 3095.
- Amann, E., N. Aslanidi, F. Nixon and B. Walters (2002) 'Economic Growth and Poverty Alleviation: A reconsideration of Dollar and Kraay,' Seminar paper, European Association of development Institutes, Ljubljana, Slovenia.
- Chong, A. and M. Gradstein (2004) 'Inequality and Institutions,' Inter-American Development Bank, Working Paper No. 506.
- Dollar, D. and A. Kraay (2004) 'Trade, Growth, and Poverty,' *Economic Journal*, 114, pp. F22-F49.
- Dollar, D. and A. Kraay (2003) 'Institutions, Trade and Growth,' *Journal of Monetary Economics*, 50 (1), pp. 133-162.
- Easterly, W. (2004) 'The Middle Class Consensus and Economic Development,' *Journal of Economic Growth*, 6(4), pp. 317-336.
- Edwards, S. (1998) 'Openness, Productivity and Growth: What Do We Really Know?' *Economic Journal*, 108, pp. 383-398.
- Frankel, J. and D. Romer (1999) 'Does Trade Cause Growth?' *American Economic Review*, 89(3), pp. 379-399.
- Galbraith, J. K. and H. Kum (2002) 'Inequality and Economic Growth: Data Comparisons and Econometric Tests,' UTIP Working paper No. 21, The University of Texas at Austin, 2002
- Glaeser, E. L., R. La Porta, F. Lopez-de-Silanes, and A. Shleifer (2004) 'Explaining Growth: Institutions, Human Capital, and Leaders,' (PD: Preliminary Draft) [http://www.brook.edu/es/commentary/journals/bpea\\_macro/papers/20040325\\_glaeser.pdf](http://www.brook.edu/es/commentary/journals/bpea_macro/papers/20040325_glaeser.pdf)
- Greenaway, D., W. Morgan, and P. Wright (2001) 'Trade Liberalisation and Growth in Developing Countries,' *Journal of Development Economics*, 67, pp. 229-224.
- Hall, R. E., and C. Jones (1999) 'Why do Some Countries Produce So Much More Output per Worker than Others?' *Quarterly Journal of Economics*, 114, pp. 83-116
- Hanson, G. and A. Harrison (1999), 'Trade and Wage Inequality in Mexico,' *Industrial and Labor Relations Review* 52(2), pp. 271-288
- Kaufman, D., A. Kraay and Z. Lobaton (2002) 'Governance Matters II: Updated Indicators for 2000/01,' Policy Research Working Paper 2772, The World Bank, <http://www.worldbank.org/wbi/governance/pdf/govmatters2.pdf>
- Keefer, P. (2002) 'Polarisation, Politics, and Property Rights: Links between Inequality and Growth,' *Public Choice*, 111(1-2), pp. 127-54

Leamer, E. (1998) 'In Search of Stolper-Samuelson Linkages between International Trade and Lower Wages,' in Susan . Collins (ed), *Import, Exports, and the American Worker*, Washington, D.C. :Brookings Institution Press, pp. 141-202.

Mamoon, D., and S. M. Murshed (2005) 'Are Institutions more important than Integration?' *Institute of Social Studies, Working Paper Series No. 416*.

Milanovic, B., (2003) 'The Two Faces of Globalization: Against Globalization as We Know It,' *World Development*, 31(4), pp. 667-683.

Murshed, S. M., (2003) 'Globalisation is not always good: An Economists Perspective,' *Tilburg Lustrum Conference 2003*.

[www.wider.unu.edu/conference/conference-2003-3/conference-2003-3-papers/Murshed-0307.pdf](http://www.wider.unu.edu/conference/conference-2003-3/conference-2003-3-papers/Murshed-0307.pdf)

Ravallion, M., (2003) 'The Debate on Globalization, Poverty and Inequality: Why Measurement Matters,' *International Affairs*, 79(4), 2003, 739-753

Rodrik, D., A. Subramanian and F. Trebbi (2004) 'Institutions Rule: The Primacy of Institutions Over Geography and Integration in Economic Development,' *Journal of Economic Growth*, 9(2), pp. 131-165

Rose, A., (2002) 'Do WTO Members Have a More Liberal Trade Policy?' *NBER Working Paper 9347*.

Sachs, J. D. and A. Warner (1995) 'Economic Reform and Process of Global Integration,' *Brookings Papers on Economic Activity*, Vol. 1, pp. 1-118

Sala-i-Martin, X., (2002) 'The Disturbing "Rise" of Global Income Inequality,' *NBER Working Paper Series, No. w8904*.

Sen, A., (2002) 'Globalization and Poverty,' *Public lecture, Santa Clara University, California, 29 October*.

Srinivasan, T.N., and J. Bhagwati (2002), *Trade and Poverty in the Poor Countries.*" *AEA Papers and Proceedings* 92 (2): 180-183.

Slaughetr, M.J., (2000) 'What are the results of product-price studies and what can we learn from their differences?' in R.C. Feenstra (ed.) *The Impact of International Trade on Wages*, Chicago, University of Chicago Press, pp. 129-165.

Vos, R., (2003) 'Shocks, Adjustment and Growth Slowdown in Latin America in the 1990s,' *Economic research Seminar, Institute of Social Studies, Den Hague, The Netherlands*.

World Bank, Washington, *A globalized Market – Opportunities and Risks for the Poor: Global Poverty Report 2001*.

Wood, A. (1999) 'Openness and Wage Inequality in Developing Countries: The latin American Challenge to East Asian Conventional Wisdom,' in R.E. Baldwin, D. Cohen, A. Sapir and A. Venables (eds.), *Market Integration, Regionalism and Global the Economy*, Cambridge: Cambridge University Press.

Table 1: IV Augmented Regression Coefficients for Openness / Trade Policy

Independent Variables	Dependent Variable: Theil Index							
	1	2	3	4	5	6	7	8
	( V a )	( R l )	( C t c )	( R q )	( G e )	( P s )	( D e m o )	( A u t o )
Lcopen	0.032 (1.54)	0.036 (1.68)***	0.039 (1.77)***	0.029 (1.39)	0.039 (1.82)***	0.039 (1.78)***	0.041 (1.70)***	0.035 (1.41)
Impnov85	0.001 (2.66)*	0.002 (2.87)*	0.002 (2.88)*	0.002 (2.48)**	0.002 (3.01)*	0.002 (2.86)*	0.002 (2.57)*	0.002 (2.28)**
Impnov82	0.001 (2.68)*	0.002 (2.91)*	0.002 (2.92)*	0.0002 (2.63)*	0.002 (3.06)*	0.002 (2.93)*	0.002 (2.67)*	0.002 (2.41)**
Tarshov85	0.001 (2.84)*	0.001 (3.06)*	0.001 (3.08)*	0.001 (2.66)*	0.001 (3.24)*	0.001 (3.06)*	0.001 (2.75)*	0.001 (2.44)**
Tarshov82	0.0005 (2.62)*	0.001 (2.56)*	0.001 (2.65)*	0.001 (2.44)**	0.001 (2.74)*	0.001 (2.59)*	0.001 (2.20)**	0.001 (1.98)**
Open80s	0.007 (0.51)	-0.033 (-0.41)	-0.025 (-0.28)	-0.062 (-0.08)	0.052 (0.46)	0.030 (0.28)	-0.007 (-0.09)	-0.047 (-0.84)
Tariffs	-0.004 (-0.34)	0.008 (0.80)	0.012 (0.89)	0.007 (1.11)	0.015 (0.55)	0.004 (0.37)	-0.004 (-0.96)	-0.001 (-0.63)
Owti	-0.230 (-1.34)	-0.324 (-1.53)	-0.302 (-1.50)	-0.149 (-0.86)	-0.425 (-1.78)***	-0.366 (-1.63)	-0.136 (-0.96)	-0.058 (-0.49)
Txtrdg	4.810 (1.50)	2.281 (1.84)***	2.504 (1.91)***	4.509 (1.63)	2.986 (1.75)***	2.441 (2.03)**	5.713 (1.46)	4.364 (1.39)
Totimpov	-0.003 (-2.32)**	-0.002 (-1.82)***	-0.002 (-1.70)***	-0.002 (-2.31)**	-0.002 (-1.84)***	-0.002 (-2.04)**	-0.003 (-2.56)*	-0.003 (-2.33)**
Owqi	-0.800 (-1.03)	-1.082 (-0.92)	-1.243 (-0.85)	-0.522 (-0.98)	-1.101 (-0.95)	-1.010 (-0.94)	-0.487 (-1.01)	-0.264 (-0.94)
Ntarfov	-0.002 (-1.64)	-0.001 (-0.82)	-0.0005 (-0.26)	-0.002 (-1.66)***	-0.002 (-1.04)	-0.002 (-1.30)	-0.002 (-2.09)**	-0.002 (-2.12)**

-\*, \*\*, \*\*\* corresponds to 1%, 5% and 10% level of significance respectively.

- Control variables are in paranthesis.

## **DATA AND SOURCES:**

**Altr:** Adult Literacy Rate, Year: 1999, Source: WDI (2002)

**Auto:** Autocracy, Year: 1999, Source: Polity IV dataset

**Ctc:** Control for Corruption, Year: 1997/98. Source: Kaufman et al (2002)

**Demo:** Democracy, (numeric) Range = 0-10 (0 = low; 10 = high), Democracy Score: general openness of political institutions. The 11-point Democracy scale is constructed additively. Year: 1999, Source: Polity IV dataset

**Disteq:** Distance from Equator of capital city measured as  $\text{abs}(\text{Latitude})/90$ . Source: Rodrik, Subramanian & Trebbi (2002)

**Engfrac:** Fraction of the population speaking English. Source: Rodrik, Subramanian & Trebbi (2002)

**Eurfrac:** Fraction of the population speaking one of the major languages of Western Europe: English, French, German, Portuguese, or Spanish. Source: Rodrik, Subramanian & Trebbi (2002)

**Ge:** Government Effectiveness, Year: 1997/98. Source: Kaufman et al (2002)

**Gini:** Coefficient in Percentage Points as calculated by WIDER. Year: 1995, Source: UNU/WIDER World Income Inequality Database (WIID) <http://www.wider.unu.edu/wiid/wiid.htm>

**High10:** Highest Income Decile, Year: 1995, Source: UNU/WIDER World Income Inequality Database (WIID) <http://www.wider.unu.edu/wiid/wiid.htm>

**High20:** Fifth Income Percentile, Year: 1995, Source: UNU/WIDER World Income Inequality Database (WIID) <http://www.wider.unu.edu/wiid/wiid.htm>

**Sch:** Average Schooling Years in the total population at 25, Year: 1999. Source: Barro R & J. W. Lee data set, <http://post.economics.harvard.edu/faculty/barro/data.html>

**Impnov85:** Import Penetration: overall, 1985. Source: Rose (2002).

**Impnov82:** Import Penetration: overall, 1982. Source: Rose (2002).

**Lcopen:** Natural logarithm of openness. Openness is given by the ratio of (nomnal) imports plus exports to GDP (in nominal US dollars), Year: 1985. Source: Penn World Tables, Mark 6.

**Logfrankrom (FR) :** Natural logarithm of predicted trade shares computed following Frankel and Romer (1999) from a bilateral trade equation with 'pure geography' variables. Source: Frankel and Romer (1999).

**Nontarfov:** Non- Taiff Barriers Coverage: Overall, 1987. Source: Rose (2002).

**Open80s:** Sachs and Warners (1995) composite openness index. Source: Rose (2002).

**Owqi:** Non Trade Barriers Frequency on intermediate inputs, Capital goods, 1985. Source: Rose (2002).

**Owti:** Tariffs on Intermediate and Capital Goods, 1985. Source: Rose (2002)

**Ps:** Political Stability, Year: 1997/98. Source: Kaufman et al (2002)

**Rl:** Rule of Law, Year: 1997/98. Source: Kaufman et al (2002)

**Rq :** Regulatory Quality, Year: 1997/98. Source: Kaufman et al (2002)

**Tarshov85:** TARS Trade Penetration: overall, 1985. Source: Rose (2002).

**Tarshov82:** TARS Trade Penetration: overall, 1982. Source: Rose (2002).

**Tariffs:** Import Duties as %age imports, Year:1985. Source: World Development Indicators (WDI), 2002.

**Theil:** UTIP-UNIDO Wage Inequality THEIL Measure - calculated based on UNIDO2001 by UTIP, Year: 1997. Source: University of Texas Inequality Project (UTIP) <http://utip.gov.utexas.edu>.

**Totimpov:** Weighted Average of Total Import Charges: overall, 1985. Source: Rose (2002)

**Txtrg:** Trade taxes / trade, 1982. Source: rose (2002)

**Va:** Voice and Accountability, Year: 1997/98. Source: Kaufman et al (2002)