

Université catholique de Louvain

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“Globalization and inequality: measures and main findings”

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Introduction

In this final work for my Master degree I decided to focus on the link between globalization and inequality. I think this is an interesting topic especially because countries tend to become more and more open to international trade, or at least this is the trend that many developing countries followed during the last decades.¹

This openness has important impacts on many economic variables at the national level and what I find particularly relevant is this effect on inequalities.

In the first chapter of the essay I provide the definitions of globalization and inequalities, listing the possible tools we can use in order to measure these two variables and introducing the relationship between globalization and inequalities, clarifying that all results on this topic have to be taken cautiously, since it is not easy to establish a direct causality.

In the following section, the second chapter, there is an analysis which explores further the consequences of globalization; the basic framework is taken from Saito and Tukutsu paper, written in 2006 with the support of the International Monetary Fund. The economists observe different countries in the Asian continent and structure the research in three subsections, where they focus respectively on the trade policies, the effects of them on demand and supply and finally on prices, wages and employment.

Saito and Tukutsu explain the correlation between these variables through a general equilibrium approach, saying that excess demand or supply would be reflected on good's prices, which would modify the level of production of companies, which has a consequence on the level of employment.

At this point, I focused the attention on a specific country, in order to restrict the very wide research field: I took two papers on India's trade liberalization of 1991.

This is the third and last chapter, I started following a demand and supply model developed by Mehtabul (2009) which considers the increasing skill premium between third and second level education across different ages.

The methodology he follows shows specific fluctuations in the supply of skilled workers, which might explain the increase in the skill premium registered during some periods.

Lastly, to conclude the thesis, I have chosen a paper from Topalova (2005) where she observes at the same Indian Trade Liberalization of 1991 from a different point of view: she bases the analysis on a specific factor model.

In this case we have a cross-regional study, which considers urban and rural areas of India and searches for the different effects of globalization on poverty and inequality measures.

¹ See Topalova (2005); Goldberg and Pavcnik (2006)

Chapter I

1.1 Globalization and its measures

Before speaking about globalization it is necessary to define what we mean with this word, since the concept behind it is quite large and complex. In fact globalization represents the worldwide integration of international trade, investment, information technology and cultures.

There are many individuals involved into this process, such as companies, workers and governments, all active in different markets and part of a mechanism.

The advantages do not only regard the production, in fact once this process is finished globalization opens the possibility to sell the goods at an international level: in different nations and continents, facing different demands and consumers.

Even if during the last decades globalization has occurred at a very high speed, it is not a new concept: in ancient times, traders used to travel long distances to buy rare commodities in order to sell them in their home countries, where they were more required and where people would pay more for them.²

The Industrial Revolution, in the 19th century, brought important steps for communication and transportation, that have made easier to pass the barriers at country borders and increased cross-border trade.

Behind the current globalization boom there are main factors as policy and technology, in fact, through the first one governments sign trade agreements in line with a free market economic system and using technology they achieve a much faster and efficient flow of informations related to trade and finance.

The positive aspects of globalization are counterbalanced by some critics, since it is possible to raise some doubts about the real existence of advantages for developing countries; for example with the North American Free Trade Agreement (1994), many U.S. car manufacturers moved part of the industrial production to Mexico, where labor costs were lower, but the benefits for the receiving country were not so evident.³ Even for the developed country that produce offshore there might be some internal problems: workers in the United States must now compete internationally for jobs.

On the other side countries like China and India showed an enormous growth also due to the offshoring of U.S. and European companies that brought job and technology which were afterwards retained in the country, allowing an improvement in the technology of the capital used for the industry and increasing the standards of life.⁴

Other critics refers to the fact that free trade implies a higher risk of failure for small or family-owned companies, and in general for the middle class, because competition in a global market is tougher.

The same argument can be done relatively to countries, meaning that weaker and smaller countries might have some difficulties which would be transferred also to

² The globalization in the las decades applies to developing countries

³ See Brid. J. C. M., 1996, "Mexico's auto industry after NAFTA: a successful experience in restructuring?", Kellogg Institute for Scientific Studies

⁴ See Wright N., 2009, "China's Emerging Role in Global Outsourcing", China Business Review

others in the same zone, kind of a domino effect, since the trade is more interdependent between each others.

A relevant debate refers to wealth disparities and inequalities; probably part of the explanation of these facts can be searched in the process of globalization.

If we want to quantify and have a measure of globalization there are different available tools; commonly used instruments are based on datas about tariffs and trade barriers.

First of all it is important to define the different types of tariffs: they can be “specific” if there is a fixed fee per unit of imported good not depending from the value of it, or “ad valorem” if the applied fee represents a percentage of the value of the good.

Clearly tariffs have an impact on the prices of goods and that is why they are used for different purposes: one of them can be the protection of domestic employment, in fact the possibility of tougher competition from imported goods can threaten domestic industries, which might have to fire workers or shift production abroad to cut costs, which means higher unemployment; through higher tariffs, the competition would be lower and these companies could keep all the labour force.

Countries may also set tariffs as a retaliation technique, if they think that a trading partner has not played by the rules or it went against the government’s foreign policy objectives.⁵

Tariffs have the effect of reducing trade and raising consumption prices, a similar effect is also the result of technical barriers to trade, which are regulations and standards that countries apply on the products sold on their market. A type of technical barrier to trade are the quality standards: fixed requirements that products must have in order to enter in the country, which aim to protect the consumers.

If used in the wrong way they are generally less transparent and less predictable since they can include unnecessary higher safety requirements, which imply higher costs.⁶

Discussing the effects of tariffs and trade barriers on businesses, consumers and governments over time it is legit to expect that in the short run, the higher prices for goods can reduce the overall consumption. During this period, some businesses will benefit and the government will see an increase in revenue from duties.

Looking at the long term the situation would be different: the businesses may see a decline in productivity due to a lack of competition and may also face a reduction in profits due to the emergence of substitutes for their products.

One more method to measure globalization is related to the level of offshoring: the index is measured as the share of imported inputs in total purchased inputs;⁷

an increase of this variable is normally the result of a bigger flow of input coming from foreign countries, proof of a more open market which makes trade easier.

⁵ See Radcliffe B., 2006, “The Basics of Tariffs And Trade Barriers”, Investopedia

⁶ See Maskus K. and Wilson J., 2001, “Quantifying the impact of technical barriers to trade”, The University of Michigan Press

⁷ See Feenstra and Hanson (2003), Hsieh and Woo (2005)

Part of these imported inputs might come from plants owned and controlled by multinationals that externalize the production through the foreign direct investment. Now that an introduction to the measurement of globalization is given, it is time to search a correlation with the level of inequality, at first explaining what we mean with this word and then showing the methodology to quantify the disparity.

1.2 Inequalities and its measures

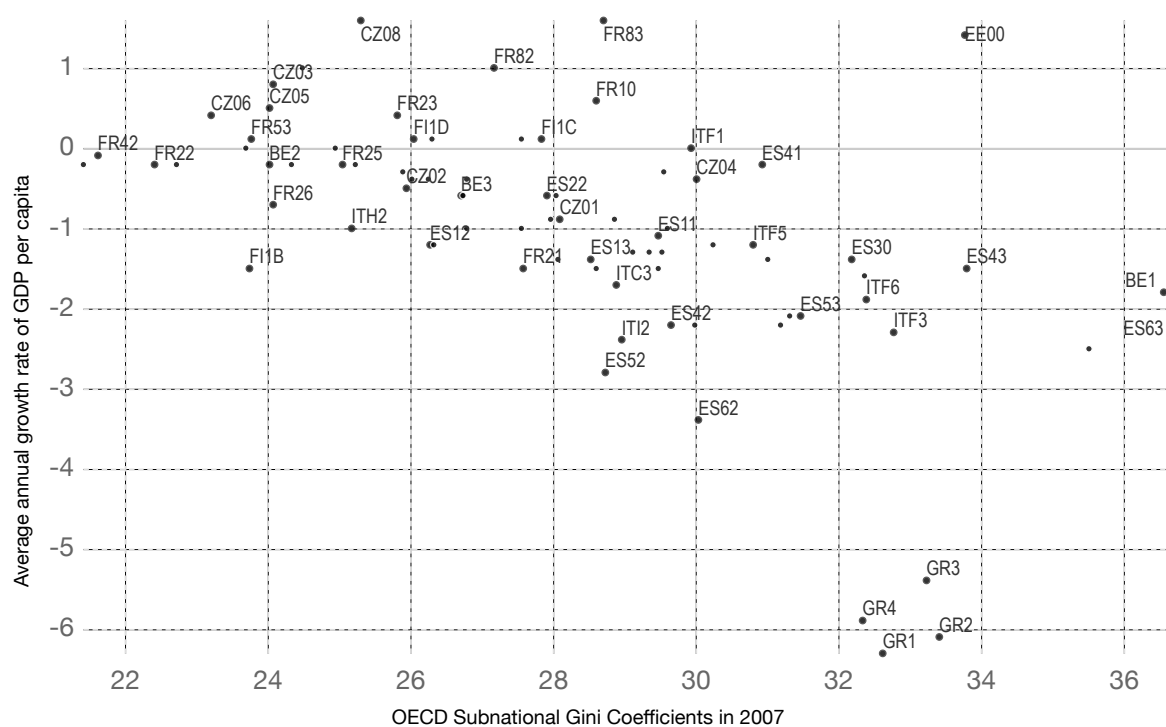
Economically speaking there are different types of inequalities: they can be related to income, pay or wealth. Income inequality refers to all the possible inflow that an individual has, they might be from the job, private investments and other passive incomes; pay inequality is related with the net wage and bonuses coming from the hours of work and lastly wealth inequality that takes in consideration the total amount of assets of an individual or household.

From a theoretical point of view there are contrasting arguments regarding the correlation between inequality and economic growth, bringing up some reasons why inequality should boost the growth and others that should slower it.

In fact it is reasonable to say that due to inequality people could have the incentive to make investments which increase the productivity and thus lead to more economic growth, but on the other side inequality could make the growth tougher because of the political instability and the social dissatisfaction.

Observing the overall effect OECD data shows that there is a negative correlation between inequality and economic growth, that is the result of a study conducted across different subnational regions, within Europe, and also within OECD countries in the Americas.

Figure 1
Income inequality and growth across OECD European regions



Source: OECD based on Royuela et al. (2014)

In the Figure 1 above, each dot represents a different sub-national region.⁸ They are located depending on the two variables: on the vertical axis there is a measure of the average annual growth rate of GDP per capita in the period 2008-2012, and on the horizontal axis there is a measure of inequality in 2007 considering the Gini Coefficients. As we can see, apparently there is a negative correlation: regions with more inequality in 2007 experienced less average growth in the following years. Even with the results of this graph there is no certain proof for the correlation to imply causation, since there are many omitted variables which might be influential in the determination of the factor of growth.

Coming back to the main issue of the paragraph, it is possible to argue that the ideal measure of inequality would be based on comparisons of individuals' well-being over their entire lifetime, probably the best component to give us information about it is consumption. In fact, data on this variable are more reliable than the data on incomes, since they are often underreported in order to avoid taxes.

Even if there are clear advantages to use consumption data, they are not the common method to quantify inequalities, that is because many developing countries do not consistently report expenditures in their household surveys.⁹

The most frequently used inequality indices are the Gini coefficient and the so-called skill premium; the first measures inequality across the whole of society rather than simply comparing different income groups, whereas the second is obtained as the wage gap between skilled and unskilled workers.

The Gini coefficient assumes values between 0, in case everyone got exactly the same, and 1, when one person has everything and everyone else has nothing, in this situation the inequality is at its maximum; so the lower the Gini value, the more equal a society.

One of the issues using this index is that it only captures relative changes: if the incomes of rich and poor people increase by the same rate in the same time, then there is no variation in the Gini index, even though absolute inequality is increasing. That is because doubling their income they will end up having an income gap which is twice the original one.

Another critic refers to the fact that while low numbers represent greater equality, they are not always a perfect indicator of economic health. Nations such as Iceland, Luxembourg and Sweden are all in the .20s, as do several former Soviet nations.

In the first case the numbers are low because residents generally have a high standard of living, while in the latter the close numbers suggest a relatively equal distribution of poverty.¹⁰

Moreover, it is important to notice that the measure taken in consideration by the Gini index is the net income and not the net worth, so in the end the majority of a nation's wealth could be concentrated in the hands of a small number of people keeping a relatively equal income distribution.

⁸ See OECD Income Distribution Database (IDD): Gini; you can select per country and see the specific graph

⁹ See Goldberg P., Pavcnik N., 2006, "Distributional effects of globalization in developing countries" p.10, National Bureau of Economic Research

¹⁰ See Smith L., 2007, "The Gini Index: Measuring Income Distribution", Investopedia Academy Publications

A scenario where some people own stocks that do not pay dividends makes this consideration real: they might have a low individual income but a high net worth.

In order to have a picture of inequality in different countries and to analyze if it increased in the last century or decades there are different methods that we mention here under; but first of all there is the so called “convergence theory”, which should be proven wrong, that provides some arguments in favor of a narrowing gap between poor and rich countries. Its main theoretical point could hold, since it basically relies on the fact that poor countries grow at a faster rate than rich ones, so over time the gap between the two will automatically diminish.

Comparing with data¹¹ we discover that the actual trend is the opposite, inequality between countries has been increasing over the past two hundred years and shows no signs of slowing.

A way to look at this global inequality is to observe the gap between the richest and poorest countries in real income per capita. Using data from the Maddison Project, developed in 2010 at the University of Groningen, we see that in 1960 people living in the world’s richest country were 33 times richer than people living in the poorest country. The analysis was conducted excluding extremely rich countries such as small oil-exporters kingdoms in the Middle East or exotic tax havens, since they are considered as outliers; but even with this consideration, in 2000, after neoliberal globalization had run its course, the gap increased to 134 times richer.

Another way to conduct this type of analysis could look at regional differences, measuring the gap between the GDP per capita of the world’s dominant power, the United States, and that of several regions of the global South.

Using World Bank data, we notice that between 1960 and 2000 the gap for Latin America has grown by 206%, the gap for sub-Saharan Africa has grown by 207%, and the one for South Asia has grown by 196%. Going on with the comparison per region we end up seeing that in 2000, the last year considered, Americans were 9 times richer than Latin Americans, 72 times richer than sub-Saharan Africans and 80 times richer than south Asians.¹² These are just some numbers that give us an idea of the distribution of global wealth, which appears to be quite unequal.

As mentioned above, apart through the Gini index, it is possible to measure inequality with the skill premium, which is defined as the difference of income between skilled and unskilled workers, often also divided as non-production and production workers or blue-collars and white-collars.

In general, this difference of wages can be explained by demand and supply: factors such as development and new technologies imply changes in the demand for skills; on the other side the supply varies depending on the costs of education and on the return of education.¹³

This topic is often analyzed using the Mincerian equation, which gives comparable estimates of the average monetary returns of one additional year of education.

¹¹ Data from the Maddison Project, supported by the University of Groningen

¹² See World Bank, Development Research Group, “GINI index”, World level search field

¹³ See Goldberg P., Pavcnik N., 2006, “Distributional effects of globalization in developing countries” p.13, National Bureau of Economic Research

The concept of schooling as a personal investment was introduced by Adam Smith in the 18th century, it gained importance during the human capital revolution in the 1960s and it is still relevant, suggesting nowadays that each additional year of education provides in average a private rate of return to schooling of about 5–8% per year.¹⁴

1.3 Introducing the relationship between globalization and inequalities

Now that we have listed the elements on which we should focus in order to observe globalization and inequalities, we can compare with datas and see if the theory predicts the reality in a reliable way.

We start taking as examples countries like Argentina, Brazil, Colombia, Chile, India and Mexico during the 1980's and 1990's; in that period the majority of developing countries introduced trade reforms and liberalization of their national markets, opening the borders to foreign direct investment.¹⁵

These countries have served as a testing ground for most empirical research studying the channels through which globalization may have incremented inequality.¹⁶

Chile represents the unique exception of the list since it liberalized its trade regime between 1974 and 1979, but all the others went through this process in the late 80's and beginning of 90's. Some of the countries were already part of the GATT, but did not have reciprocal tariff concessions negotiated; before the reforms of the discussed decade tariff levels were very high, ranging from 117% in India to 23.5% in Mexico. The comparison of average tariffs before and after the reforms shows drastic reductions: 85 percentage points in Chile, 73 percentage points in India, and 12.5 percentage points in Mexico.

This country in particular entered the NAFTA with U.S. and Canada in 1994, after the agreement many U.S. companies shifted low-skill intensive stages of production to Mexico, in fact they used to import the inputs in the developing country, transform them into the final goods exploiting the low cost local workers and finally export the products back to the U.S. where they could be commercialized.¹⁷

As mentioned before, if we want to quantify the level of inequality the common tools are the Gini coefficient and the skill premium; in the following graphs (Figure 2) we can better see the variations of Income Gini coefficient during the analyzed years, in particular for for Brazil, China and Mexico the growth of inequality is evident between the 80's and 90's.¹⁸

¹⁴ See Patrinos H. A., 2016, "Estimating the return to schooling using the Mincer equation" p.1, IZA World of labor

¹⁵ See Goldberg P., Pavcnik N., 2006, "Distributional effects of globalization in developing countries" p.13, National Bureau of Economic Research

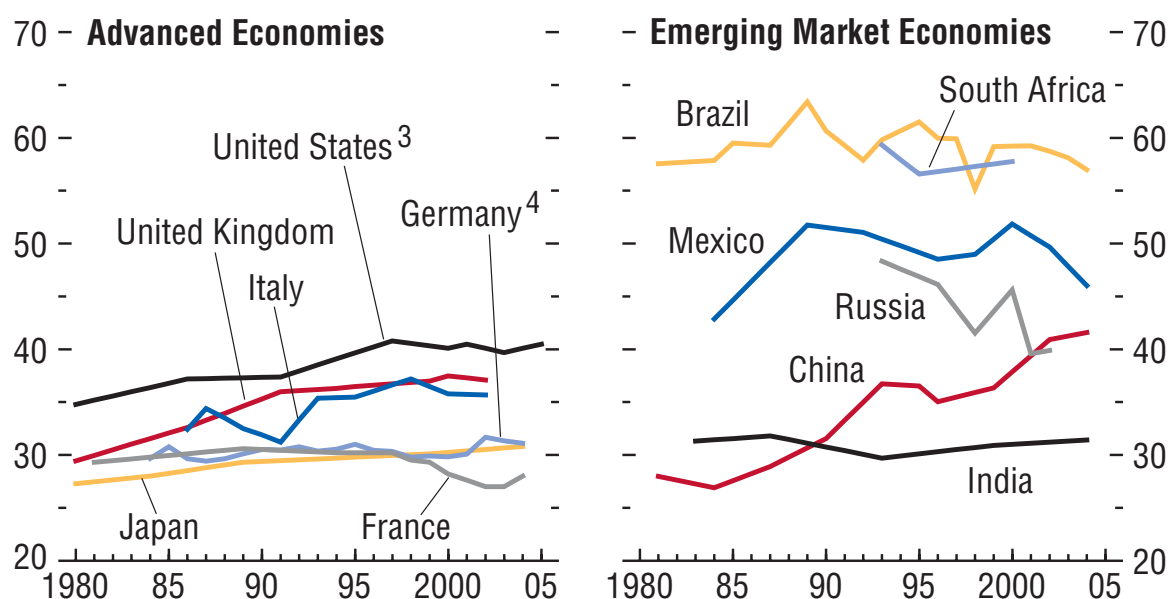
¹⁶ South East Asian countries (South Korea, Taiwan and Singapore) are omitted from the analysis since they underwent trade reforms in the 1960's and 1970's. Unfortunately, neither detailed data on tariffs nor micro surveys are readily available for these countries.

¹⁷ See p.202 of "Offshoring of Goods and Services" - Macmillan Learning - Multiple authors

¹⁸ Income Gini coefficient computed as: average difference between all pairs of incomes in a country, normalized by mean

Figure 2

Gini Coefficients in Selected Countries



Sources: Choi (2006); Povcal database; WIDER database; and IMF staff calculations.

In the decades of liberalization it is also possible to observe how in almost all the developing countries there has been an increase in the skill premium, the return to university education relative to primary education increased by 68% between 1987 and 1993 in Mexico, by 20% in Argentina and by 16% between 1986 and 1998 in Colombia; these data can be a starting point to explain a correlation of globalization with the growth of inequality in these countries.¹⁹

Looking at the Gini coefficient of log wages Goldberg and Pavcnik (2006) noticed that changes in the skill premium are generally reflected in the wage inequality, it is possible to see this effect because the coefficient tends to go up, signal of an unequal distribution.

By now we have looked at Latin American countries, moving the attention to Asia we find a unique scenario: China seems to confirm the trend as described above, in fact Branstetter and Lardy (2006) show in their paper how during the 80's and 90's, period of trade liberalization, income inequality has increased and that is in line with the positive correlation between inequality and exposure to globalization.

Something different happened for other South East Asian countries, for example Singapore, South Korea and Taiwan introduced trade reforms already in the 1960's and 1970's, almost 20 years before the Latin American trend, and registered a decline in inequality as they opened up their economies to foreign markets.²⁰

These results are just some of the outcomes of the many studies which have been made on the topic; they might create confusion because they do not prove the theory at 100%, in fact it is important to underline a big problem of the study of globalization and related inequalities: it is not always possible to distinguish if the final effect on the national economy comes from trade reforms or FDI liberalization

¹⁹ Data from Attanasio (2004), Gasparini (2004) and Kijima (2006)

²⁰ Explanations provided by Wood A. (1999)

or from internal policy changes that might regard for instance the labor market regulation.

This unclear situation contributes to the difficulty of establishing a link of causality between globalization and inequality; in fact the variations on these two factors might depend on several omitted or not easily observable variables.

So in order to understand in detail some of the findings on this topic we need to dig into specific papers which provide explanations and show the limits of the results.

Chapter II

In this second section of the thesis I decided to consider and report the findings of the research paper written by Saito and Tukutsu (2006).²¹

I have chosen this specific document because it does a cross-country analysis of nine Asian countries and through a general equilibrium approach, where each member country is large enough to affect prices of goods and services produced in the considered macro region, it shows the effects of globalization on demand and supply, which consequently affect prices and thus generate variations on wages.

All these mechanisms are explained in the three following subsections.

2.1 Trade policy effects

It is important to discuss the role of trade policies in order to have a better understanding of the mechanisms behind the wage inequality; in general a trade policy defines standards, targets and regulations that belong to trade relations between countries, these policies are specific at a national level and are formulated by its public institutions.²²

Their aim is to boost the openness to international trade and this affects wage inequality by changing the relative demand and supply for skilled workers; but this demand depends also on other factors of the economic environment and so a relevant challenge is to isolate the effects of trade.

In order to analyze trade policies there are different approaches: G. Porto (2006) focused on the changes in the relative prices of goods, that by consequence affect labor income, related to household welfare, and consumption.

To see in detail the main effects of trade liberalization we use the above mentioned model developed by Mika Saito and Tukutsu in 2006, where they explore the results of trade on the relative wage of less-skilled labor through its effect on world prices, which are typically exogenously given under the small open economy assumption.

The empirical findings of the research are based on datas of 1995 about the Asian-Pacific region, including nine Asian countries and the USA; at that period the average tariff rate was 6.0% for the listed countries and the economists compared these datas with a hypothetical zero tariff rate.

²¹ For more details about the paper: Saito M., Tokutsu, I., 2006, "The Impact of Trade on Wages: What If Countries Are Not Small?", International Monetary Fund

²² See Goldberg P., Pavcnik N., 2006, "Distributional effects of globalization in developing countries" p.21, National Bureau of Economic Research

The effect of the tariff reduction can be divided into two types: the direct effect, referring to the changes on the economy originating from the reduced after-tariff price of imports, and the indirect effect, which regards the excess of supply due to lower prices and brings modifications on the supply and demand curves.

By reducing the cost of imported materials a tariff reduction lowers the marginal cost of production; for this reason there is an expansion of production, which explains the increase in demand: more production requires more intermediate inputs and since prices are kept constant in measuring the direct effect, more production implies more real income of households, and therefore more consumption.

2.2 Effects on supply and demand

To discuss the findings of the model and see some real datas is possible to look at the following Table 1, where total supply, intermediate demand, consumption demand and excess supply are reported in columns, at first dividing per industry and then per country:

Table 1
Direct effect on excess supply (billions U.S. dollars)

Ind. 1/	Supply	Inter- mediate Demand	Con- sumption Demand	Excess Supply	Ctry. 1/	Supply	Inter- mediate Demand	Con- sumption Demand	Excess Supply
AGR	0.882	2.962	1.697	-3.777	IDN	3.539	1.759	1.575	0.206
EGW	5.099	3.240	1.105	0.753	MYS	4.860	2.151	1.178	1.531
FOD	8.256	1.408	5.645	1.202	PHL	4.212	1.473	1.779	0.960
TEX	9.900	3.291	4.383	2.225	SGP	0.418	0.754	0.404	-0.740
PAP	2.105	1.663	0.292	0.149	THA	13.898	4.932	4.111	4.856
CHE	5.312	4.008	0.630	0.674	CHN	5.881	4.052	4.054	-2.225
BMI	7.899	8.108	0.232	-0.441	TWN	9.959	4.944	3.031	1.984
MEQ	38.418	13.207	4.113	21.098	KOR	16.271	8.529	4.576	3.166
SER	12.772	16.813	19.201	-23.242	JPN	37.406	23.177	11.480	2.749
MOT	20.847	6.790	1.859	12.199	USA	15.044	9.721	6.969	-1.645
Total	111.488	61.491	39.157	10.841	Total	111.488	61.491	39.157	10.841

Sources: Institute of Development Economies (IDE), 2001, IDE Statistical Data Series No. 82, (Tokyo: IDE-JETRO)

There are three important remarks to do on the datas: first, in the last column we see how excess supply is the dominant feature of tariff reduction for the region as a whole; most countries face excess supply in some markets and excess demand, when the sign is negative, in others. The excess supply for the region sums to \$10.841 billion in total, from this feature is possible to predict that the general price level falls as individual prices adjust to clear each market.

Second point, Singapore, China, and the United States are the unique three analyzed countries that face excess demand at the aggregate level: the values, visible on the excess demand column with the sign minus, are \$0.740, \$2.225, and \$1.645 billion respectively; all the other countries face excess supply at the aggregate level.

Third, we tend to observe excess demand in non-tradable goods industries and excess supply in tradable goods industries: agriculture and service are generally non-tradable and there we observe excess demand, at the aggregate level the excess

demand for these industries respectively sum to \$3.777 and \$23.242 billion for the region.

On the other hand, data show that in all countries except Singapore, in the machinery and other industrial products industries (MEQ and MOT codes) there is an excess of supply; this highlights a correlation between tradable goods and excess supply. At the aggregate level, the excess supply of these industries respectively sum to \$21.098 and \$12.199 billion for the whole region.

In the end, we can summarize saying that abolishing existing tariff rates in the region induces an expansion in tradable goods industries, a contraction in non-tradable goods industries, and a corresponding reallocation of resources between these sectors.

2.3 Effects on prices, wages and employment

Now that we explained the movements on the supply and demand we have to take in consideration the effect on prices, since they change depending on these variables.

As we mentioned before the prices adjust in order to clear the excess supply or demand, but the predominant effect is the decline of prices, that in case of zero tariff rates happens even in markets where there is excess demand, a scenario where we would generally expect a movement in the opposite direction. The strength of these price falls is positively correlated with the size of the trade policy: the larger the tariff reduction the more the price will fall.²³

The main goal of the paper we discuss is to analyze the effect of tariff reductions on the relative wages of skilled and un-skilled workers, to do so Saito and Tukutsu decided to look at trade patterns per country and not per industry, the reason of this choice is that they assume equal wages in the same sectors across countries.

We can now look at the following Table 2 where is possible to distinguish and quantify the direct and the indirect effect of tariff reduction on domestic and foreign demand that we described above:

Table 2
Change of domestic demand and regional trade (billions U.S. dollars)

Ctry. 1/	Direct Effect				Indirect Effect			
	Domestic	Export	Import	Trade balance	Domestic	Export	Import	Trade balance
IDN	2.597	0.736	0.684	0.052	-1.478	-0.076	-0.294	0.218
MYS	2.457	0.872	1.479	-0.607	-1.168	0.159	-0.891	1.050
PHL	2.799	0.454	1.085	-0.632	-1.801	0.362	-0.810	1.171
SGP	0.233	0.925	0.203	0.721	0.173	-0.546	0.643	-1.188
THA	8.159	0.883	2.979	-2.096	-5.555	1.082	-3.334	4.416
CHN	4.543	3.563	0.341	3.222	-0.394	-1.542	0.839	-2.382
TWN	6.646	1.329	2.416	-1.087	-4.734	-0.169	-1.290	1.121
KOR	11.516	1.589	2.419	-0.830	-8.010	0.280	-1.568	1.848
JPN	28.985	5.672	5.433	0.239	-17.773	-2.432	-1.090	-1.342
USA	12.326	4.363	3.347	1.016	-7.452	-2.875	2.037	-4.913
Total	80.262	20.386	20.386	0.000	-48.191	-5.758	-5.758	0.000

Sources: Institute of Development Economies (IDE), 2001, IDE Statistical Data Series No. 82, (Tokyo: IDE-JETRO)

²³ Relates to the general equilibrium theory that Saito and Tukutsu follow

The first point to note is the increase in domestic and foreign goods demand caused by the tariff reduction, this is observable in the first and third columns of Table 2. The direct effect pushes the domestic demand to increase by \$80.262 billion and regional trade volume by \$20.386 billion. These movements can be attributed to the expansionary effect on output and income, which contributes to lower the prices.

Looking at the trade balance we see that it initially increases for Indonesia, Singapore, China, Japan and the United States but not for the other countries, in particular it falls by \$2.096 billion in Thailand.

Observing now the indirect effect on the pattern of exports we can say it is consistent with what happens to relative prices, these data are in the sixth column of Table 2. For example, the relative price fall in Thailand and the Philippines is reflected in an increase in demand for goods produced in these countries: their exports increase by \$1.082 and \$0.362 billions respectively. Following the same logic the relative price increase in China and in the US is reflected in a decrease in demand for goods produced in these countries: their exports fall by \$1.542 and \$2.875 billion, respectively. An exception in this table is Japan, where the relative price fall is not accompanied by an increase in export demand.

The final effect that we notice is the indirect one on trade balance, which is negative for countries that register relative price increase and positive for others, we find the data in the last column of the Table 2. Especially China and the US face a negative trade balance, whereas the effect on other countries is generally positive.

After the analysis on prices, it is important to understand the effects of trade liberalization on wages.

In the Table 3 hereunder we have the change in the real wage rate of less-skilled labor, the one of skilled labor and the difference of the two, called wage gap, which are shown in the first, second, and third column respectively.

In the following two columns there is the effect on relative wages, seen through changing supply prices of tradable and non-tradable goods respectively.

Finally, in the last three columns we have data about the effect on relative wages through changing input price of tradable, non-tradable and imports.

Table 3
Sources of Change in Wage Gap (in percentage)

Ctry. 1/	Change in		Wage Gap	Sources of Change in Wage Gap				
	Real Wage Rate			Supply Prices		Input Prices		
	Less- Skilled	Skilled		Tradables	Non- tradables	Tradables	Non- tradables	Imports
IDN	0.442	0.475	-0.032	-1.219	-0.408	1.292	0.227	0.076
MYS	1.473	1.476	-0.003	-11.893	-1.673	10.047	1.506	2.011
PHL	1.576	1.600	-0.023	-6.873	-1.681	7.991	2.585	-2.044
SGP	0.551	0.552	-0.001	-7.861	-2.608	1.852	1.341	7.274
THA	1.739	1.657	0.082	-2.818	-2.090	4.577	2.819	-2.047
CHN	0.355	0.370	-0.015	-3.537	-0.878	2.806	0.552	1.042
TWN	0.697	0.702	-0.006	-2.775	-0.525	2.040	0.441	0.814
KOR	0.619	0.603	0.016	-1.640	-0.289	1.715	0.354	-0.124
JPN	0.165	0.154	0.011	-0.326	-0.163	0.294	0.219	-0.014
USA	0.056	0.048	0.008	-0.165	-0.043	0.089	0.034	0.094

Sources: Institute of Development Economies (IDE), 2001, IDE Statistical Data Series No. 82, (Tokyo: IDE-JETRO)

The main findings from the Table 3 refer to the negligible effect of tariff reduction on the wage gap, this is visible in the third column, where the percentage variations of the relative wages are insignificant in all the listed countries.

In order to understand the mechanism behind this result we look at the other available data: there is a negative effect coming from a tariff reduction through changes in supply prices of both tradable and non-tradable goods, this means that the wage gap becomes wider and that happens because lower tariff rates reflect into lower prices, which lead to an excess of supply. In this situation the producers of these goods would decrease the production and thus lay off less-skilled labor.²⁴

A second point to focus on is the effect of the tariff reduction through changes in domestic inputs prices which appears to be positive, meaning that the wage gap becomes smaller. The theoretical situation is the one where producers would have access to inputs at a lower price and for this reason they would increase production, to do so they would need more workers and by consequence increase the demand for less-skilled labor, generating the positive effect on the wage gap.

In particular we notice that the dominant part of the effect comes from the changes on prices of tradable inputs.

Considering now the last column we see a unique situation where the effect of imported input price movements on relative wages depends on the effect on terms of trade: in fact generally countries with the largest tariff cuts are the ones with a relatively large fall in the general price level, for instance Thailand and the Philippines. These countries face a deterioration in terms of trade, so imports of intermediate inputs become more expensive relatively to the goods they export.

These conditions discourage production and with the same logic that we followed before we say that there will be a lower demand for less-skilled labor, which translates into a negative effect on the wage gap.

At the opposite situation we find the countries that face an improvement in terms of trade due to tariff reduction, such as China, Malaysia and Singapore; they actually benefit from a fall in the import price of inputs, since it boosts their production and the demand for less-skilled labor.

What is interesting to notice is that the positive effect on the wage gap of domestic price movements is large enough to fully offset the negative effect of import price movements on relative wages.

On the other hand countries such as the United States, China, Taiwan, Singapore and Malaysia face a negative effect on the wage gap, due to the domestic price movements, which wipes out the positive effects generated by the import price movements for these countries.

We can say that the relative wage decomposition helps to understand the importance of relative price movements through which a tariff cut affects relative wages.

The main findings of this model based on 1995 Asians countries data relate to the effect of tariff reduction on goods' prices, which tend to fall and this make the wage gap move upward or downward, depending from variables such as the terms of trade; an important point is the fact that the overall effect of trade liberalization on the wage gap is not relevant.

²⁴ Suppositions of the mechanism described by Saito and Tukutsu (2006)

For this reason it is not possible to prove a correlation between globalization and inequality, so in order to understand the cause of the increasing skill-premium that we mentioned in the paragraphs above we have to go deeper in the analysis and search more carefully.

Chapter III

Since we did not find convincing evidence of the link between globalization and inequality so far, I tried in this third section to look specifically at one country and compare two different papers which studied its trade liberalization case.

In the two following subsections I explain and report the main findings of these researches on India. The analysis focus on India for some specific reasons: one third of the world's poor live in this country and the nature of the trade liberalization, largely externally imposed, facilitates a causal interpretation of the findings; also availability of data is satisfactory since the trade liberalization happened quite recently, in 1991.

3.1 India's increasing skill premium: role of demand and supply

The economist Azam Mehtabul published in 2009 a research paper on India's increasing skill premium with the support of the Southern Methodist University of Dallas, USA and the Institute for the Study of Labor (IZA) of Bonn, Germany.²⁵

In this paper he starts with the observation of the wage premium in India, which increased between 1990 and 2000, but in different proportions across age groups.²⁶

In fact younger age groups were strongly involved into this widening gap, whereas older age groups do not look to suffer this effect in the same way; to find an explanation to the uneven increase the paper uses the demand and supply model with imperfect substitution across age groups.

The analysis is conducted on individual-level household survey data from the Employment and Unemployment Schedule, administered by the National Sample Survey Organization (NSSO), an institution of the Indian Government.

The decade that they considered is very relevant in order to study the wage inequality since India initiated a drastic liberalization of its external sector and industrial policy in 1991, so that the research can be extended to a possible correlation between globalization and inequality; in fact a coherent finding proves that the increase in the wage gap is concentrated after 1991.

The classification of the Indian labor force is made in five different skill categories depending on the education level: the highest skill group is tertiary, where we find individuals with 15 years of more of education, then secondary with ten to twelve

²⁵ For more details: Mehtabul A., 2009, "India's Increasing Skill Premium: Role of Demand and Supply", Southern Methodist University and IZA

²⁶ Data from the Employment and Unemployment Schedule administered by the National Sample Survey Organization (NSSO), Government of India

years and going down we have middle, primary and below primary, which is the lowest skill group.

The analysis focuses in particular on the comparison between tertiary and secondary education wages; but studying the evolution of the wage premium and going deeper separating the labor in different age groups, Mehtabul noticed that there was a relevant difference in the trend of the wage premium depending on the age of the individuals.

These data are reported in the Table 4 hereunder, which contains the estimates of the Tertiary-Secondary Wage Premium listed per age in different columns and per year on the five lines. The coefficients are computed as the difference in mean log of average weekly wages between regular workers with a tertiary degree and those with a secondary degree.

Table 4
Tertiary–Secondary Wage Premium by age group and year

	23-27	28-32	33-37	38-42	43-47	48-52	53-57
1983	0.215 (0.043)	0.294 (0.027)	0.376 (0.027)	0.388 (0.032)	0.368 (0.037)	0.417 (0.044)	0.324 (0.066)
1987	0.345 (0.035)	0.310 (0.028)	0.337 (0.030)	0.292 (0.032)	0.385 (0.036)	0.361 (0.037)	0.397 (0.053)
1993	0.326 (0.040)	0.349 (0.037)	0.381 (0.032)	0.305 (0.040)	0.337 (0.048)	0.350 (0.041)	0.256 (0.071)
1999	0.323 (0.042)	0.440 (0.040)	0.418 (0.041)	0.429 (0.036)	0.452 (0.036)	0.432 (0.037)	0.441 (0.052)
2004	0.540 (0.049)	0.531 (0.046)	0.423 (0.053)	0.535 (0.049)	0.438 (0.047)	0.403 (0.048)	0.385 (0.057)

Source: Mehtabul A. Model on India's Increasing Skill Premium; Southern Methodist University and IZA; Discussion Paper No. 3968; January 2009

Note: Standard errors are in parentheses. The table entries are wage differentials in mean log weekly earnings between a tertiary completed worker and secondary completed worker.

We can observe that for the age group 23-27 the wage premium increased between 1983 and 1987, remained approximately constant for the following decade and then increased sharply between 1999 and 2004. A similar trend can be found as well for the age group 28-32 and in general we can say that the wage premium rose between 1999 and 2004 for the macro age group 23-42, but for the older age groups in the interval 43-57 we notice an opposite situation, where the wage premium decreased during the same period.

So an intermediate finding of the research is on the origin of the the overall increase in wage premium of tertiary graduate workers, which is mostly driven by younger age groups.

At this point in order to explain, at least partially, this trend Mehtabul assumed that there is imperfect substitutability across age groups and using the demand and supply model he started to search for the causes that generated the important increase in the tertiary-secondary wage premium in 1990s.

He looked at first to the supply side, taking a sample of workers belonging to different categories such as regular, casual and self-employed, having tertiary and secondary education level and aged between 23 and 57.

The measurement of the supply is conducted in three different ways: the first method considers the number of hours supplied by each education group, focusing on the differential of hours; the second approach is a simple numerical count of the employed workers assuming each one can potentially supply one unit of labor and finally the third is a quantification of the labor force, defined as workers plus individuals who are searching for a job, even if currently unemployed.

The estimation process of the supply is divided in two steps, in the first one the author proves the estimated effects of age group specific relative supply on age specific relative wage premium to be statistically significant; this confirms the correlation between age group specific supply and age group specific wage premium.

In the second stage, age group specific wage premia per year are regressed on age group specific relative supplies and aggregate relative supplies of tertiary graduate workers.

What Mehtabul did next is to control for the dummy variable he created for the time trend, which is useful to reject the hypothesis that most of the increase in demand for labor occurred in the 1990s, since the dummy is not statistically significant.

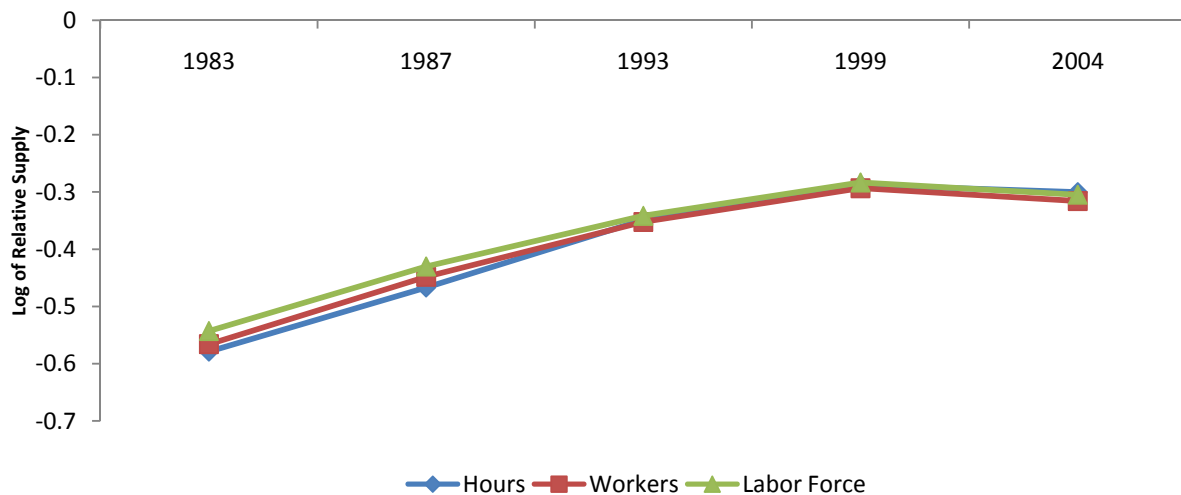
We have a graphic representation of the aggregate relative supply index that we mentioned in the second stage in the Figure 3; we can observe that the supply of tertiary education workers increased for the decade 1983-1993, slowing down between 1993 and 1999 and finally assuming a stationary trend between 1999 and 2004.

With these movements in the supply, an increase in the wage premium for tertiary workers could happen only with a positive shift in the demand, which counterbalances and overweights the positive trend of the supply; that applies especially for the period 1987-1993, where the supply growth was still consistent but even with this the wage premium increased by 3%.²⁷

Considering now the periods 1993-1999 and 1999-2004 we have respectively a deceleration and a stagnation in the supply; as we saw in the Table 4 between 1999 and 2004 the wage premium increased consistently, one potential explanation for this phenomenon is a constant positive shift in the demand combined with the static situation of the supply of the five considered years.

²⁷ Mehtabul is using a demand and supply model, thus he is not considering other variables to be part of the adjustment mechanism

Figure 3
Aggregate Relative Supply Index for Tertiary graduate workers



Source: Mehtabul A. Model on India's Increasing Skill Premium; Southern Methodist University and IZA; Discussion Paper No. 3968; January 2009

The findings of this paper rely on the role of demand and supply and especially on the timing of changes in these two variables.

In fact, the positive demand shifts occurred both in the '80s and '90s but what determined the extent of the increase in wage premium is the relative supply of tertiary education workers: during 1983-1993 it offset the demand shift, limiting the wage premium increase.

During the period 1993-1999 the growth rate of the relative supply of tertiary workers decelerated, becoming stagnant during the years 1999-2004.

This slowdown in the supply, combined with increasing demand, led to a consistent increase in the wage premium.

Another relevant finding of this paper is the imperfect substitutability between age groups, proved by the very different trend of the wage premium of different age categories.

In the end there are still some points at which the author does not give a complete explanation, such as the reason of the increase in the demand for highly skilled workers and the causes of the stagnation in the relative supply of tertiary education workers.

With these results and limits, we pass now at the analysis of the second paper which studies inequalities in India, developed by Petia Topalova.

3.2 Effects of trade liberalization on poverty and inequality: focus on Indian districts

Through Mehtabul's research paper we have an idea of the effects of globalization on the wage premium in India, analyzed with a demand and supply model.

Another useful document to better understand the trade liberalization and the related inequalities in India was written in 2005 by the economist Petia Topalova, with the

support of the National Bureau of Economic Research; here the approach is based on a specific factor model.²⁸

The standard economic theory based on the Heckscher-Ohlin model predicts that gains to trade should flow to abundant factors, which suggests that in developing countries, abundant in unskilled labor, this one would benefit most from globalization.²⁹

However, these predictions might not be always correct: in fact new theories mention cases where trade liberalization could reduce the wages of unskilled labor even in a labor abundant country and as a consequence widen the gap between the rich and the poor.³⁰ These modern theories consider and accept the correlation between trade liberalization and faster economic growth in the long run together with reductions in poverty, but they also notice that these adjustments come at a cost, which is generally pending on the poor.

Topalova's paper investigates the impact of trade reforms on poverty and inequality in Indian districts, searching for the differences between urban and rural areas and across several regions.

In order to understand the political and economical context we need to take some time to describe how the Indian Trade Liberalization happened and which are the main causes, since we said it was not internally organized and promoted.

Until the 1980s India's trade regime was one of the most restrictive in Asia, with high nominal tariff and non-tariff barriers, including a complex import licensing system, restricted imports by intermediaries, strict rules on imports to the public sector and government purchase preferences for domestic producers.³¹

Only during the second half of the 1980s we notice a beginning in the process of liberalization, but this opening trend was accompanied by a rise in fiscal and balance of payments deficits; these factors determined India's vulnerability to shocks, which combined with the increase in oil prices due to the Gulf War in 1990 and the national political uncertainty contributed to the sustained capital outflows.³²

As a result of the unstable situation in August 1991 the Indian government requested a debt arrangement from the International Monetary Fund. The support that the IMF offered was conditional to some adjustment program that aimed to reform the limiting industrial and import licenses, ease the financial sector and promote other open trade policies including reduction in the level of tariffs and a removal of a large number of quantitative restrictions.³³

²⁸ For more details: Topalova P., 2005, "Trade liberalization, poverty and inequality: evidence from Indian districts", National Bureau of Economic Research

²⁹ Classic mechanism of the Heckscher-Ohlin model

³⁰ Topalova's paper is one of them and we will focus on it

³¹ Cerra et al., 2000

³² See Topalova P., 2005, "Trade liberalization, poverty and inequality: evidence from Indian districts" p.6, National Bureau of Economic Research

³³ From Chopra et al., 1995

To understand the size of the change obtained with this liberalization notice that the share of products subject to quantitative restrictions decreased from 87 percent in 1987/88 to 45 percent in 1994/95; and average tariffs fell from more than 80 percent in 1990 to 37 percent in 1996.³⁴

This wide variation in the tariff structure across industries happened in a restricted amount of time, creating a good situation for comparisons between the pre and post reform economical environment, where it is easier to identify the causal effects of trade policy on income processes.

Also export and import volumes increased sharply from the early 1990s; at the period India's imports were significantly more skilled-labor intensive than India's exports and throughout the 1990s the situation remained unchanged.

Topalova collected data from surveys that cover all states in India and contain informations on about 75,000 rural and 45,000 urban households.

With this resources she constructs district level measures of poverty, measured as headcount ratio and poverty gap; she also measures inequality as the standard deviation of the log of per capita expenditure and the logarithmic deviation of per capita expenditure.

For industrial data by different districts she uses the Indian Census of 1991, which reports the industry of employment at the 3-digit National Industrial Classification (NIC) code.

Finally, she uses tariffs to measure changes in the trade policy; non-tariff barriers are not taken in consideration since there are no data available at a disaggregate level, which would allow the study per specific sector.

Considering that at the 1991 Census India was divided into approximately 450 districts located in 27 states we directly understand that this type of division allows a cross-region research design. The adopted methodology compares districts whose industries faced larger liberalization shocks to those whose industries remained protected.

In a regression framework, the baseline specification takes the following form:

Equation (1)
$$y_{dt} = \alpha + \beta \cdot \text{Tariff}_{dt} + \gamma_t + \delta_d + \varepsilon_{dt}$$

Where y_{dt} is district level outcome such as measures of poverty and inequality; and Tariff_{dt} is the district exposure to international trade. The coefficient β captures the average effect of trade protection on regional outcomes; for instance if workers could easily migrate in response to adverse price changes, β would be zero.

Finally, we have the district fixed effect δ_d , which absorbs unobserved district-specific heterogeneity in the determinants of poverty and inequality, and the year dummies γ_t controlling for macroeconomic shocks that equally affect all India.

The purpose of the described methodology is to capture the short to medium-run effect of trade liberalization on poverty and inequality across industries and in specific districts.

With this structure the model tries to answer the questions of whether all districts perceive the same effects from liberalization, considering the possibility that some

³⁴ Data from Indian National Sample Survey (NSS)

areas might suffer the adjustment costs disproportionately. That is an important point especially for policy makers: they have the possibility to implement policies to redistribute some of the gains from the winners to those who do not win as much, in order to minimize the social costs of inequality.

Before seeing the main findings of the model it is important to mention how Topalova measured poverty and inequality: the poverty gap index is defined as the normalized aggregate shortfall of poor people's consumption from the poverty line.

Inequality is measured in two ways, the standard deviation of log consumption and the mean logarithmic deviation of consumption.

She estimates then four versions of equation (1) shown above: the OLS relationship using $Tariff_{d,t}$; a reduced form using $TrTariff_{d,t}$; a third one instrumenting for $Tariff_{d,t}$ using $TrTariff_{d,t}$; and finally instrumenting for $Tariff_{d,t}$ with both $TrTariff_{d,t}$ and with $TrTariff_{d,1987} * Post_t$, where $Post_t$ is a dummy equal to 1 in year 1999.

$TrTariff_{d,t}$ weighs industry tariffs with employment weights that sum to one for the share of people in traded goods in each district. Thus, a district which has 1 percent workers in traded industries and another district where 100 percent of workers are in traded industries will have the same value of $TrTariff_{d,t}$ if, within the traded industries, the industrial composition is the same.

The outcomes of these four estimations are presented in Table 5, where rural and urban areas of India are analyzed separately respectively in Section I and Section II. Each column gives the results for one of the four different dependent variables.

Table 5
Effects of Trade Liberalization on Poverty and Inequality in Indian Districts

	I. RURAL				II. URBAN			
	Tariff (1)	TrTariff (2)	IV- TrTariff (3)	IV- Init TrTariff (4)	Tariff (5)	TrTariff (6)	IV- TrTariff (7)	IV- Init TrTariff (8)
<i>Panel A. Dependent variable: Poverty Rate</i>								
Tariff Measure	-0.287 ** (0.118)	-0.297 *** (0.084)	-0.834 *** (0.250)	-0.687 *** (0.225)	-0.215 (0.190)	-0.065 (0.156)	-0.156 (0.353)	-0.403 (0.275)
Obs	725	725	725	725	703	703	703	703
<i>Panel B. Dependent variable: Poverty Gap</i>								
Tariff Measure	-0.129 *** (0.038)	-0.114 *** (0.021)	-0.319 *** (0.073)	-0.206 *** (0.075)	-0.084 (0.052)	-0.032 (0.046)	-0.076 (0.101)	-0.131 (0.087)
Obs	725	725	725	725	703	703	703	703
<i>Panel C. Dependent variable: StdLog Consumption</i>								
Tariff Measure	-0.086 (0.154)	-0.094 (0.082)	-0.265 (0.228)	-0.161 (0.183)	0.092 (0.094)	0.108 (0.115)	0.257 (0.295)	0.213 (0.250)
Obs	725	725	725	725	703	703	703	703
<i>Panel D. Dependent variable: Log Deviation of Consumption</i>								
Tariff Measure	-0.016 (0.066)	-0.020 (0.042)	-0.057 (0.115)	-0.020 (0.071)	0.034 (0.062)	0.090 (0.066)	0.215 (0.174)	0.172 (0.144)
Obs	725	725	725	725	703	703	703	703

Source: Topalova P. Model on Trade Liberalization, Poverty and Inequality in Indian districts; National Bureau of Economic Research; Working Paper 11614; September 2005

In columns (1) and (5) we have the OLS relationship, in columns (2) and (6) the reduced form, and columns (3), (4), (7) and (8), the instrumented IV results.

In rural India, for both Poverty Rate and Poverty Gap there is a strong statistically significant negative relationship between district level tariffs and poverty.

This means that the trade liberalization and consequently the decline in tariffs apparently increased the two measures of poverty in districts whose exposure to liberalization was more intense.

Each district faced in average 5.5 percentage point reduction in the scaled district tariffs, which according to the findings would lead to an increase of 3.2 to 4.6 percentage points in the Poverty Rate and of 1.1 to 1.8 percentage point in the Poverty Gap.

Going on with the results we surprisingly discover that there is no statistically significant relationship between trade exposure and poverty in urban India; and even if the estimated values are still negative, the magnitude of the coefficients is much smaller than in rural India.

Looking at inequality measures we see there is no statistically significant relationship between trade liberalization and either measure of inequality for the average district in neither rural nor urban India.

Compared to other research papers that focused on urban areas considering them as the most commonly affected by trade liberalization, Topalova shows us a surprising scenario, where rural zones record pronounced effects.³⁵

One of the causes of this unexpected situation might be the vulnerability of people involved in agriculture, concentrated in rural areas, rather than people working in the manufacturing industry in urban areas. In fact the second category tend to be relatively richer and thus more resistant to negative shocks.³⁶

Passing now at the discussion, we can say that so far this paper has established that, whatever the effects of Indian trade liberalization were, rural areas with high concentration of industries that were disproportionately affected by tariff reductions, experienced slower progress in poverty reduction. However there was no remarkable effect of an increase in inequality in these areas.

These findings are in contrast with a standard trade model with perfect factor mobility across regions: in fact this type of frame would predict labor migration in response to wage shocks and this would balance the incidence of poverty across regions.³⁷ But observing carefully the factors' mobility, taking as reference a related study conducted by Topalova in 2004, we notice that it is very limited in India.

Migration is remarkably low, showing no signs of an increasing trend after the 1991 reforms, and thus it needs to be considered as one of the main explanations for the discussed geographical inequalities.

Workers do not relocate from sectors that should be contracting to those that should be expanding fast enough, thus impeding one of the main mechanisms generating the benefits of trade.³⁸

What matters in this type of research are the short-run movements of people across districts or across different sectors of the same district; data tell us that only 3.5

³⁵ See Goldberg and Pavcnik, 2004

³⁶ Topalova's hypothesis to explain the different results between rural and urban areas

³⁷ Referring to the specific factor model

³⁸ Data from Indian National Sample Survey (NSS)

percent of people living in rural areas migrated in the past ten years, interestingly the percentage of women doing so is twice the one of men.

For people living in urban areas the percentage of migration is higher but still limited.

Before the conclusion we need to consider the fact that even with very low labor mobility there could be high levels of reallocation within districts and across industries.

Topalova did not find evidence of this happening in the sample of all Indian states, in fact a realistic supposition is that firms in industries that were relatively more liberalized experienced higher productivity and productivity growth but these gains have not been shared with the workers or were not big enough to offset the relative downward pressure on factor returns.

Lastly we look at the institutional environment and at the flexibility of labor laws: the author noticed that the strongest effects on poverty occurred in areas where there was no change in the industrial structure after the trade liberalization.

Whereas in some areas where the reallocation was easier and where labor laws intervened to adjust the economy, we find faster growth for companies and workers benefitting from the liberalization.

Concluding, we learn from this paper that complementary policies, such as labor market reforms, play a key role in the minimization of the negative effects of trade openness which generate poverty and inequality; it is important for developing countries to implement the globalization with flexible policies which aim at boosting economic growth, raising living standards and reduce poverty.

Conclusions

Some final comments I can add ending this thesis refer to the main results we can extrapolate from the analysis that have been done.

Using the research papers that I already mentioned we saw in the first chapter how inequality might contribute to slow down the economic growth, but especially how complex it is to establish a link of causality between globalization, generally measured with tariff reductions, and inequalities, computed through the Gini coefficient or the skilled premium.

In the second chapter, with a demand and supply model proposed by the economists Saito and Tukutsu (2006), we understood the mechanisms of propagation of the effects of trade liberalization: we observed data reporting an expansion of tradable goods' industries and a contraction of non-tradable goods' industries. Moreover these shifts in demand and supply tend to decrease prices and thus generate changes also in the employment level; but a very important finding of this study is that the overall effect of trade liberalization on the wage gap is not relevant.

Moving on to the Chapter III we had two different approaches to see the Indian openness to trade of 1991, from the first paper written by Mehtabul (2009) we discover that the skill premium might increase in a different proportion depending on the considered age group. Conducting this cross-age analysis he also finds an increase in the skill premium between tertiary and secondary education workers, motivating it with a decrease in the supply of the first category of labor.

Lastly, I went deeper with the second paper, where Topalova (2005) makes an analysis across rural and urban zones of India focusing on measures of poverty and inequality.

Using a specific factor model framework, she regresses two poverty indexes finding an increase in the rural zones of India, she also conducted the same type of analysis for two inequality indexes discovering no signs of increase, for both rural and urban zones.

At this point we have a differentiated literature review which makes us understand one more time the complications on the estimation of a correlation between globalization and inequality: this looks like a relevant topic even outside of the economic environment, since it clearly involves political strategies, which are indicated by Topalova as a powerful instrument to redistribute the gains obtained with free trade to the part of the population who suffers the negative effects of it, for instance their increase of poverty. Labor laws are mentioned as the crucial ones for this redistributive purpose.

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