

Are the “Poor” Getting Globalized?

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Abstract

One reason that poor people may not capture the full benefit from participation in international markets is that the goods they produce tend to be subject to relatively high trade barriers. This paper analyzes market access barriers faced by households in different income deciles by matching household survey data from India based on the industrial classification of their economic activity. Tariffs in international markets are higher, and nontariff measures more numerous, on goods produced by poor workers than on goods produced by rich workers. Tariffs faced by exporters are higher on goods produced in rural and more remote areas than on those in urban centers, on goods produced by informal enterprises than by formal ones, and on goods

produced by women than by men. Furthermore, the global reduction in tariffs from 1996 to 2012 failed to ameliorate these differences. How did we get there? Efforts to protect poor workers across countries resulted in a coordination problem. Indeed, tariff protection in China and the United States is higher on goods produced by poor workers than on goods produced by rich workers. Therefore, if poor workers are employed in similar sectors, then each country's attempts to protect its poor workers by imposing higher tariffs and more nontariff measures on such goods will reduce the access of all poor workers to international markets, and thus limit the gains from trade.

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1. Introduction

Globalization is under fire. Public perceptions and recent policy debates increasingly appear to indicate that trade liberalization has been accompanied by rising income inequality in developed and developing economies. The fact that trade liberalization creates both winners and losers has never been in question. Therefore, while international trade enhances economic growth in the aggregate, the distribution of its benefits may vary by income group, industry of occupation, location and/or social group.

The literature on the subject discusses why poor households may have only marginally benefitted from trade opening, both as producers and consumers. On the production side, skilled-biased technological change associated with trade and FDI is likely to have dampened the increase in the demand for unskilled labor in developing economies expected after trade liberalization. Further, high reallocation costs across sectors, firms and geographical locations that are particularly burdensome for poor households affect their ability to move from contracting to expanding areas of economic opportunity. On the consumption side, the pass-through of lower prices (resulting from trade liberalization) from the border to consumers has been affected by high domestic transport costs and a range of market frictions.¹

In analyzing the effect of trade opening on greater economic inclusion, this literature has focused on the tariff structure in the domestic economy. But the conditions of access to foreign markets, as determined by tariff policies of trading partners, are also key to capturing export opportunities and generating employment and/or wage gains for poor households. There are, in fact, a few studies which show that improving conditions of market access reduce poverty rates.²

What then are the market access conditions for the poor? Are there ample opportunities for them to reap benefits from exporting? This is a particularly relevant question given evidence which suggests that individual countries often protect their own "poor" (or declining sectors) by raising tariffs and/or non-tariff barriers on the goods these households/individuals (or declining sectors) produce or are employed in the production of. But, when all countries protect the sectors where the poor work and if the poor are employed in similar kind of sectors in different countries, a "coordination problem" arises: the goods (and services) produced by the poor will face higher barriers to trade than those provided by the non-poor, and the resulting decline in the global demand will lower the price of goods and services that the poor produce.

Tariff and non-tariff barriers faced by the poor, if relatively higher, may therefore impair income distribution by keeping poor workers disconnected from global markets. The potential problem is then not too much globalization, but too little "inclusive" globalization. This view is in stark contrast to the rhetoric that is usually seen and heard.

In light of the above, the objective of the paper is to assess the obstacles that "poor" households in a given country face when trying to export goods to the rest of the world. In doing so, we investigate the overall tariff profile on exports from India. Tariff data are matched with consumption/income data by the industrial classification of each household member's sector

¹ For the impact of high domestic transport costs see Nicita (2009), Emran and Hou (2013), and Atkin and Donaldson (2012). For the impact of market frictions see Campa and Goldberg (2002), Atkin and Donaldson (2012), Ural Marchnad (2012) and Han et al. (2016).

² See, for example, Porto (2010) and McCaig (2011).

of employment. “Poor” households are not identified by a pre-defined cut-off in their level of income or consumption, but are instead analyzed along a continuum of decile groups that form the entire distribution. The scope of “poverty” in the paper also extends beyond the income dimension to focus on groups that are often excluded from the growth process and perhaps are more disconnected from global trade. These include women, those working in the informal sector, or those working in rural areas.

The structure of the paper is the following: Section 2 provides a review of the literature. Section 3 describes, theoretically, the coordination problem of unilateral pro-poor policies. Section 4 outlines the data set and methodology. Section 5 describes the results. Section 6 presents conclusions.

2. Literature Review

2.1 Trade opening and distributional effects

Trade liberalization, through its impact on prices in both product and factor markets, affects members of a household as both producers and consumers (Winters et al., 2004). In most developing countries, a majority of the poor households rely on labor markets for the bulk of their income. Standard trade theory predicts that trade opening increases the demand for the relatively abundant factor, which suggests that unskilled labor in developing countries would benefit most from globalization through a resulting increase in wages or employment or both. As producers, farm households for example can gain by selling their output in hitherto unavailable overseas markets, which may also yield a better return. As consumers, trade liberalization can be beneficial to the extent that it reduces the price for imported goods. At times, these effects can go in opposite directions. For example, higher prices of agricultural exports would make the food basket more expensive, which works towards increases in poverty, but would boost labor demand and wages, which works towards poverty alleviation. Therefore, an increase in the price of something of which the household is a net seller – labor, goods or services – increases its real income, while a decrease reduces it.

The literature has focused on explaining why the distributional effects of trade opening, as described by the theory, depend on a range of other factors in practice. On the production side, the transfer of skill-biased technologies associated with trade could reduce the wages of unskilled labor even in a labor-abundant country, thereby widening the gap between the rich and the poor. Similarly, despite shifting low-skilled activities from rich to poor countries, foreign direct investment may increase the demand for skilled workers because jobs which were low skill-intensive in the former may be relatively skill-intensive in the latter (Wood, 1997). Further, as trade liberalization reallocates economic activity across sectors, industries and firms, the short-run adjustment costs can be high with the burden falling disproportionately on poor households (Banerjee and Newman, 2004).

Given the high reallocation costs across geographical regions within countries, the poor may have also only marginally benefited from greater openness due to sectoral variation in patterns of trade liberalization combined with spatial variation in the industrial composition of the labor force. Take, for instance, evidence from India which suggests that rural areas with a high concentration of industries that were disproportionately affected by tariff reductions experienced slower progress in poverty reduction (Topalova, 2010). With perfect factor

mobility across regions, labor would migrate in response to wage and price shocks, equalizing the incidence of poverty across regions, but the low incidence of internal migration in India is striking (Kone et al., 2016). Similarly, local labor markets in Brazil where workers were concentrated in industries facing the largest tariff cuts were generally affected more negatively (Kovak, 2013).

The extent to which households benefit from trade liberalization on the consumption side depends on a range of factors that influence the pass-through of price changes from the border to consumers. Owing to transport and other costs of distribution, the geographic characteristics of localities, such as the distance to the border matter. Nicita (2009), for example, finds that tariff pass-through was significantly higher in the Mexican states closest to the United States border, and thus, households living in these states benefited relatively more from the reductions in tariffs. Similarly, Atkin and Donaldson (2015) find that the costs of intra-national trade are approximately 4 to 5 times larger in Ethiopia and Nigeria compared to the US. This reduces the amount of potential surplus consumers in remote locations—far from a country's major port, for example—can derive from falling international trade barriers. Other spatial characteristics, such as the relative isolation of households from functioning product markets, may also matter for price transmission. Pass-through estimates for India suggest that reductions in tariffs increased domestic consumer welfare more in urban areas than in rural areas (Ural Marchand, 2012).

Market frictions are another relevant factor. If domestic industries are imperfectly competitive, changes in tariffs may be absorbed by profit margins or mark-ups (Campa and Goldberg, 2002). Atkin and Donaldson (2012) have further shown how the market power of intermediaries in domestic industries affects the mark-ups, which results in different rates of tariff pass-through within Sub-Saharan Africa. Similarly, a heavily regulated domestic industry that is dominated by state-owned enterprises would have limited flexibility to adjust to the changing cost conditions (Szamosszegi and Kyle, 2011). Evidence from China suggests that a 10 percentage point increase in the size of the private sector across cities is associated with 2 percentage points higher tariff pass-through, with the share of the private sector among intermediaries being particularly important (Han et al., 2012).³

2.2 "Pro-poor" trade policy, market access and coordination failures

In analyzing potential explanations for why poor households have benefited less from trade opening than trade theory would predict, the literature referred to above has focused on domestic factors, such as domestic tariffs and market frictions. But the conditions of access to foreign markets, as determined by tariff structures and non-tariff measures of trading partners, are also key to capturing export opportunities and generating employment and/or wage gains for poor households.

The literature is somewhat scant in this regard, but it does point at the importance of market access conditions for the distribution of the gains from trade. Market access is naturally influenced by geography and distance. For example, evidence from China suggests that reduced distance to (domestic and) international markets confers substantial benefits on per capita consumption of rural households (Emran and Hou, 2013). While geography is hard to

³ The average pass-through rate is found to be 22 percent in a city where all enterprises are state-owned, while a city with an average size of the private sector has an approximate tariff pass-through rate of 31 percent.

change, access to foreign markets is also likely to be influenced by a set of international trade policies – such as tariffs, non-tariff measures and services trade restrictions – employed by a country’s trading partners. For example, Porto (2010) predicts that the elimination of trade barriers on exports of agro-manufactures to industrialized countries would cause poverty to decline in Argentina. Similarly, McCaig (2011) analyzes the US-Vietnam free trade agreement to show that provinces in Vietnam that were more exposed to U.S. tariff cuts experienced greater declines in poverty rates.

One aspect that the existing literature has neglected is how domestic trade policies of individual countries, when considered together, affect access of “poor” and “rich” households to foreign markets differentially. This is particularly important in light of evidence of countries implementing trade (and trade-related) policies that favor poor households. For example, relying on data for six Sub-Saharan African (SSA) countries, Nicita et al. (2014) find that SSA’s trade policies have a systematic “pro-poor” bias,⁴ that is, trade policies redistribute income from rich to poor households. This is mostly explained by protection granted to agricultural products that are sold by poor households – the positive labor income effect dominates the impact of higher consumption prices and other forces that benefit skilled over unskilled workers. The question is what if all countries apply “pro-poor” trade policies and if the poor are employed in similar kinds of sectors in different countries?

Strategies that use trade protection to assist poor households are unlikely to be effective if one also considers general equilibrium effects.⁵ There is the possibility of a “coordination problem” whereby poor households are less able to benefit from globalization because they are excluded from the process. Consider the following. In order to protect producers from low prices of competing products from the rest of the world, countries increase import tariffs and other non-tariff barriers on sectors that employ a large proportion of those classified as “poor”. If this is done by a sufficiently large number of countries, which together constitute a “large” country that is a “price-maker” in the world market, the resulting decline in global demand will lower the price of goods and services that the poor produce. As a result, “poor” households will either not be price competitive to export to markets that have implemented measures of protection or will receive a lower price in export markets that have not implemented these measures.

The coordination problem described here about import restrictions mirrors the literature on the coordination of export restrictions and food price volatility (Abbott, 2012; Ivanic and Martin, 2014; Gouel, 2016). Countries frequently use export restrictions to protect poor domestic consumers from high or volatile prices on the world market. However, when countries simultaneously respond to higher international prices for food by unilaterally imposing export restrictions, the international price of the commodity in question will only further increase. Consequently, the “poor” consumers of this food commodity in countries that imposed the export restrictions may be unable to benefit from lower domestic prices.

⁴ The authors analyze how reductions in tariffs and non-tariff barriers affect consumer and producer prices, which in turn affect welfare of the average household in the top and bottom 40% of the income distribution defined by household production, household consumption, labor earnings and government transfers.

⁵ The literature also discusses foregone opportunities driven by dynamic effects. Using protectionist policies to assist the poor may actually harm the poor by limiting productivity increases and structural transformation.

3. Unilateral “Pro-Poor” Trade Policy and Coordination Problem

There is evidence of “pro-poor” trade policies in countries with very different factor endowments. Lower-earning and less skill-intensive industries tend to receive relatively higher level of protection than high-earning (skill-intensive) sectors across countries. Standard political economy models of trade policy (e.g. Grossman and Helpman, 1994) do not explain these patterns. In these models, the sectors that have more lobbying power (usually larger heavily organized sector in an economy) get protected.

The recent literature on behavioral economics and trade policy (Freund and Ozden, 2008; Tovar, 2009) partially explains these patterns. In these models, governments exhibit loss aversion. Hence, they intervene in the market to compensate factor owners for income losses. The key feature of these models is that welfare is dependent not only on the current state but also on changes over time. In particular, these models present three characteristics: (i) gains and losses relative to a reference level do matter (reference dependence), (ii) but losses have a higher weight in welfare (loss aversion), and (iii) the marginal value of gains or losses decreases with size. This implies that if the income level of a group falls below a certain reference level, the government will intervene so as to offset the loss. Therefore, industries that experience losses (import competing or declining sectors) are more likely to receive protection than other sectors. This prediction of behavioral models is completely at odds with standard effects of political economy models, where the expanding sectors are more likely to receive government protection.

In this paper, governments present inequality aversion. This implies that governments are more likely to set tariffs to increase income of low-wage sectors.

The model assumes that the individual utility with inequality aversion is:

$$U = u(x_0) - I h [\hat{U} - u(x_0)]$$

where $u(x_0)$ is individual utility for the consumption of good x ; \hat{U} is the reference utility and will depend on the average individual income. In addition, $h(\cdot)$ is an increasing function in the difference between the reference utility and the actual utility for consumption. I is an indicator variable that takes value one whenever the utility falls strictly below the reference utility and zero otherwise. That is, individuals experience a welfare loss when their utility is below the reference utility.

If a government uses trade policy to protect producers, it will impose an import tariff when the wage of producers falls below the reference level.

The government will maximize the utility:

$$G(p) = W(p) + H(p)$$

where $W(p)$ is the standard social welfare function, which is the sum of labor income, rent from specific factors, consumers surplus and government revenue. $H(p)$ is the loss aversion for the entire economy and equals the sum of individual utilities losses. As shown by Freund and Ozden (2008), when the income level of factor owners is below a certain threshold (when the

price of the good they produce falls below a certain price) the government will set a tariff to compensate producers for the welfare loss generated by the fall in their income.

The existing literature, however, has not addressed the systemic effects of such unilateral policies. Unilateral pro-poor trade policies (when applied by a "large" country or simultaneously applied by a sufficiently large number of "small" countries) create a coordination problem. The game theory portrait below exemplifies the problem. When acting unilaterally each country will find it optimal to protect its own poor. But, in so doing, they end up in an inferior equilibrium.

Strategies Country A/Country B	Protect	Don't protect
Protect	1,1	3,0
Don't protect	0,3	2,2

Unilateral "pro-poor" trade policies have created a world where the poor end up facing higher tariffs, thus depressing global demand for the goods the poor produce. If all countries protect their low-wage sector, even small countries will behave like a large country, thus depressing demand for the goods that the poor produce.

Note that the existence of such coordination problem does not require that the poor are employed in the same sector in each country. It is sufficient that sectors' wages show a high ranking correlation across countries- a hypothesis that data support (section 5.5 provides evidence for the existence of this correlation).

4. Data and Methodology

The Government of India's National Sample Survey Office (NSSO) regularly conducts national household surveys on employment and consumption. For the present exercise, the data are taken from the 68th round conducted during the period from July 2011 to June 2012, specifically survey data collected from the questionnaire referred to as "Schedule 10: Employment and Unemployment". The number of households surveyed was 101,724 (59,700 in rural areas and 42,024 in urban areas). These sample households correspond to 456,999 individuals (280,763 in rural areas and 176,236 in urban areas).

4.1 Matching household survey data with tariffs and NTMs

The paper uses a novel approach to assess barriers that individual producers across the income distribution face in international markets. In doing so, it combines household survey data on income and consumption from India with information on lowest applied tariffs in the top 15 destination markets (EU counted as one) for Indian products in 2012.⁶ These importers account for more than 75% of world imports from India. This is done by matching India's National Industrial Classification (NIC) – which is based on the International Standard of Industry

⁶ These importers account for more than 75% of world imports from India.

Classification (ISIC) – of an individual’s sector of employment, with tariffs faced in India’s major export markets at the Harmonized System subheading (6-digit) level.⁷ The same concordance was used to determine the variability of NTMs imposed on imports from India by the same top importers for the same reference year across different sectors.⁸ The number of NTMs applied to India in this analysis includes those applied by these partners on an MFN basis, e.g. those NTMs that are not targeted specifically at India but at all exporters to that country.

In the household surveys under consideration, an individual’s sector of employment is based on activities pursued during certain specified reference periods: one year, one week and each day of the reference week. The activity status determined on the basis of each reference period is referred to as ‘usual status’, ‘current weekly status’ and ‘current daily status’, respectively. The ‘usual status’ approach is generally preferred as it is based on a relatively longer time horizon. Nonetheless, the current weekly status approach is important in any analysis of wages because these are expressed in weekly terms. Each approach is guided by the ‘majority time spent’ criterion. For instance, under the ‘usual status’ approach, an individual is considered ‘employed’ in a particular industry if he or she spent the majority of his or her time in the last 365 days on that economic activity, rather than being unemployed or engaged in non-economic activities.

The paper uses two correlated data sets to identify the relevant sector of employment.

1. Household level data where the sector of employment is based on ‘usual status’ of the household head with the corresponding household weekly consumption, which was used as proxy variable for income.
2. Individual-level data based on members within the household reporting an economic activity and corresponding income from such activity during the reference week.

The advantage of using household consumption levels as a proxy for income is that wage-based data do not include income received by self-employed individuals. Analysis on household level data was purely based on consumption, even if there are individuals within the household which reported income. For the data set based on individual respondents, individuals (15 years and above, excluding those studying full time) who had an activity during the week and reported its corresponding earnings are included.

4.2 Limitations

The ISIC - HS correlation is not a full match concordance table. There are ISIC codes for which there is no corresponding HS code. Hence the analysis only includes activities in which the associated good/s can be identified with the HS code. For example, some ISIC codes which refer to construction (e.g. ISIC "4100 - Construction of buildings") do not have a matching HS code, and such observations were dropped from the calculation of the statistics.⁹ For the

⁷ The tariffs at the HS subheading level matched with the ISIC code are trade weighted averages by value of imports from each partner. We also look at how much the tariffs faced have declined from their 1996 level for specific identified sectors. To calculate the reduction in tariffs, the same methodology was used to match tariffs in 1996 for the same partners.

⁸ The data on NTMs were extracted from the WTO's NTM database - I-TIP. The database shows the number of NTMs by type – SPS, TBT, ADP, CV, SSG, SG, QR, TRQ and XS – in each HS chapter.

⁹ Only observations of selected respondents who work in ISIC sectors where a correlation with HS (hence tariffs) exists (32% of respondents) are included in the study. The other 68% work in ISIC sectors that do not have ISIC-

analysis of NTMs, the statistics were done only on total NTMs without breakdown by type of NTM.

4.3 Defining the “poor” or “excluded”

In this study, economic “poverty” is measured as a relative phenomenon based on the analysis of income/consumption for the entire distribution by decile group. Consumption expenditure is widely accepted as a proxy for income owing to the difficulty of getting reliable quantitative data on household income through direct enquiries in household surveys. Additional variables in the data enabled us to also look at groups traditionally excluded from the process of economic growth – women, those working in rural areas and those employed in the informal sector.

5. Results

5.1 Tariffs faced in the export market are inversely related to income

Using household level data, the average income (using consumption as proxy) and tariff faced in export markets for each income decile were calculated (Table 1). Households in the poorest decile have an average weekly consumption of only 511 rupees (\$9.60), while households in the richest decile consume ten times that amount.

Table 1: Average tariff faced by income decile based on household weekly consumption.

Income Decile	Household Weekly Income		Average Tariff Faced (%)
	Rupees	US \$	
1	511	9.6	24.4 a
2	783	14.8	22.9 b
3	962	18.2	22.4 b
4	1130	21.3	21.5 c
5	1305	24.6	20.3 d
6	1504	28.4	19.2 e
7	1761	33.2	18.4 e
8	2118	40.0	17.5 f
9	2713	51.2	16.0 g
10	5112	96.5	14.5 h

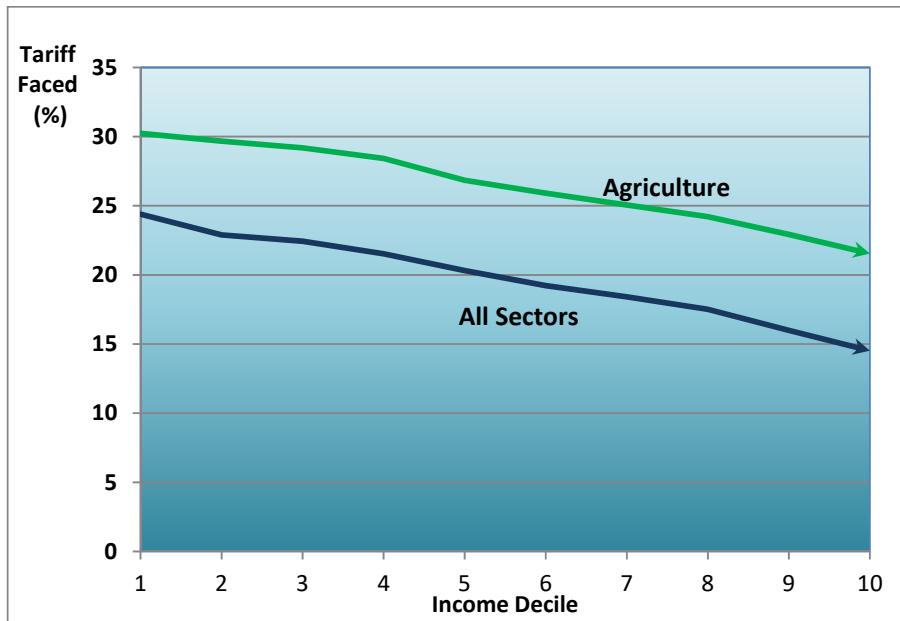
* Using Duncan's test on the average tariff faced. Average tariffs are significantly different across deciles except when they are tagged with the same letter of the alphabet.

The results show that goods associated with higher income households face lower tariffs while goods associated with low income households face higher tariffs. In the table, the tariff faced by the next higher income decile is consistently and significantly lower except for two neighboring deciles – the difference between tariffs for deciles 2 and 3, and for deciles 6 and

HS correlation code. This is mainly an issue related to services sectors. The study, therefore, is largely limited to merchandise sectors.

7, are not statistically significant. Tariffs for the agriculture sector, in which 62% of the respondents are classified, mirror the same inverse relationship between tariff faced and income decile, but at a much higher tariff magnitude (see Figure 1).

Figure 1: Tariff faced by income decile in agriculture and averaged across all sectors.



5.2 Rural households, women and informal workers face higher tariffs in the export market

5.2.1 Rural vs urban

Households in rural areas face an average tariff which is 10.9 percentage points higher than their urban counterparts (22.6% versus 11.7%). Rural households consistently face higher tariffs, with the widest differences in the lower income deciles (Table 2).

Table 2. Average tariff faced by income decile in rural and urban areas

Income Decile	Tariff Faced (%)		
	Rural	Urban	Difference ¹
1	26.4	15.0	11.4
2	25.0	13.4	11.6
3	24.5	13.6	10.9
4	23.6	13.3	10.3
5	22.5	12.4	10.1
6	21.3	13.1	8.2
7	20.9	11.7	9.2

8	20.5	11.0	9.5
9	19.5	10.0	9.5
10	19.2	8.8	10.4
Overall	22.6	11.7	10.9

1 The difference in all income deciles is statistically significant.

5.2.2 Distance to an urban area makes a difference

It is not just the inherent classification of each district as rural or urban, but actual distance to an urban center that also affects access to international markets in terms of tariffs faced. Households in a state capital or recognized city or urban area¹⁰ face the lowest tariffs in international markets at 9.6% (more than 10% of respondents), while those living within one to fifty kilometers from the closest urban center faced an average tariff of 14.3% (averages indicated by letters f and e, respectively in Table 3). The average tariff for the center-dwellers is 14.8 percentage points lower than the 24.4% tariff faced by those who are farther than 600 km from the city (less than 2% of respondents). Except for those living the farthest at more than 600 kilometers, any other distance from the nearest urban center does not make any significant difference in tariffs faced (averages with overlapping letters b to d in Table 3). The results also affirm that the poor face higher tariffs since, as shown in Table 3, incomes are lower for those who live far from urban conglomerates.

Table 3. Average income and tariff faced by distance to the nearest urban area

Distance (km) to nearest urban area	Average Income (Rupees)	Number of respondents	Average Tariff (%)	Duncan's test outcome*
GT 600	1,002	428	24.4	a
401-600	1,116	1,883	17.3	b c
301-400	1,199	3,509	16.3	d c
201-300	1,235	4,992	15.7	d
151-200	1,406	2,806	17.5	b
101-150	1,429	3,215	17.5	b
51-100	1,415	2,444	17.5	b
1-50	1,881	1,685	14.3	e
0 (Center)	2,185	2,610	9.6	f

¹⁰ For example, Bagalkot in the state of Karnataka is 518 km to Bangalore, which is the state capital. However, Bagalkot is only 406 km to Pune, a prominent urban area in the state of Maharashtra; this is therefore the closest distance to an urban area, which is used in the analysis. This measure is taken from Das et al. (2015).

* Note that we use the Duncan's test on the average tariff faced to assess whether average across deciles are statistically different. Average tariffs are significantly different across deciles when they are tagged with different letters. They are not significantly different when they are tagged with the same letter of the alphabet.

5.2.3 Men vs women

Individuals within the sample households reporting a principal economic activity and income during the reference week complemented the household-level data. Using the actual income, the same methodology was used to assign each individual to the appropriate income decile.

Overall, the average tariff facing men is 6 percentage points lower than that facing women (Table 4). Women consistently face higher tariffs across all deciles, except for the highest decile where men face tariffs that are on average one percentage point higher than those faced by women. Interestingly, in the two highest deciles the average income of women is higher than that of men. This further bolsters the finding in the previous section that lower-income groups face higher tariffs. However, the number of women in the higher-income deciles is much fewer than the number of men. In the 10th income decile, for example, women only account for 6% of the respondents.

Table 4: Weekly wage and tariff faced by gender and income decile

Wage Decile	Weekly Wage (Rupees)		Tariff Faced (%)		
	Men	Women	Men	Women	Difference
1	208	206	20.4	21.7	-1.3
2	386	382	22.2	22.6	-0.4
3	529	522	19.9	21.5	-1.6
4	666	663	19.9	20.2	-0.4
5	767	744	18.1	21.7	-3.6
6	934	920	15.8	18.2	-2.4
7	1113	1091	14.7	19.7	-4.9
8	1419	1401	12.0	15.1	-3.1
9	2190	2254	7.8	8.6	-0.8
10	8268	8508	4.6	3.6	1.0
Overall	1675	720	14.4	20.4	-6.0

Note: The sign + denotes that the difference between the average tariff faced by men and by women is significant (based on a t-test).

5.2.4 Formal vs informal workers

The household surveys reporting the principal economic activity during the reference week also identified the type of enterprise individuals were employed in. From this information, each enterprise was classified as belonging either to the formal or to the informal sector. The survey's definition of the informal sector is an enterprise employing less than 10 workers. Unfortunately, only 54% of respondents reported the number of employees in the enterprise in which they worked. Nonetheless, workers in informal sector enterprises face an average 9.8% tariff, which is significantly higher than the 7.2% for enterprises classified as in the formal sector.

5.3 Globalization did not narrow the bias against the poor

While global tariffs fell from 1996 to 2012, the tariffs facing the poor, workers in rural areas and women remained higher than those facing the rich, workers in urban areas and men, respectively (Table 5). In fact, the reduction in tariffs was slower for workers in rural areas and for women, while the tariff gap between the highest and lowest income decile remained unchanged over the 16-year period.

Table 5: Average Tariff Reduction between 1996 and 2012
(change in percentage points)

Decile 1 (lowest 10%)	2.6
Decile 10 (highest 10%)	2.5
Rural	2.4
Urban	3.3
Women	2.5
Men	2.7

5.4 Non-tariff measures are biased against the poor

In addition to higher tariffs, the products produced by poor workers face a greater number of non-tariff measures. On average, the poorest (income deciles 1 and 2) face some 200 different types of NTMs while workers belonging to the top income decile face only 127 (72 less NTMs compared to the first decile). Unlike for tariffs, which consistently decline across the income deciles, the total number of NTMs for the poorer 5 deciles are not significantly different; the total count varying from 192 to 201. On the other hand, the number of NTMs falls significantly between the 9th and 10th deciles, with the latter facing 39 NTMs less than the former (Table 6).

Table 6. Total count of all types of NTMs faced, by income decile

Income Decile	Number of NTMs Faced	Duncan's test
1	199	a b
2	201	a
3	201	a
4	192	b
5	194	a b
6	180	c
7	182	c
8	169	d
9	166	d
10	127	e

*Using Duncan's test on the average count of NTMs faced. Averages tagged with the same letter of the alphabet are not significantly different.

5.5 Preliminary evidence that a coordination problem exists

Higher tariffs on goods produced by poor workers likely reflects efforts by India's trade partners to protect sectors where their own poor work. The same pattern can be seen in the tariffs on India's imports, by matching India's own applied MFN tariffs in 2012 by sector to the income data from the survey. Goods produced by the richest workers (in the 10th decile) face a tariff of less than one-third the level on goods produced by the poorest workers (the lowest 2 deciles of the population—Table 7).

Table 7: India's import MFN applied tariffs in 2012 by income decile.

Income Decile	Applied MFN
1	35.6 c
2	39.0 a
3	37.5 b
4	35.3 c
5	33.8 d
6	29.9 e

7	28.0	f
8	23.3	g
9	16.9	h
10	11.6	i

*Using Duncan's test on the average count of NTMs faced. Averages tagged with the same letter of the alphabet are not significantly different.

Similarly, the applied MFN tariffs in the United States and China (taken from the WTO Integrated Database based on the Member's own data notification) tend to be higher for goods produced by poorer workers (based on average wage data from the UNIDO database). Goods produced by workers in the fifth, or richest, quantile face tariffs that are markedly lower than on goods produced by workers from the first, or poorest, quantile across all three countries (Table 8). While the average tariff falls consistently across income groups in China and India, the average US tariff for sectors corresponding to the richest quantile (3.7%) is close to that of the second-poorest quantile (3.8%). However, this appears to be driven by the very high tariff on tobacco.¹¹ Since the US tariffs on in-quota tobacco imports from selected partners are lower than the tariffs quoted here, the actual applied average duty is lower. Excluding tobacco, the average tariff for the richest quantile is only 0.8%, less than a fifth of the average tariff of the poorest quantile. These results reinforce the view that there is a coordination problem – the "poor" are disadvantaged in terms of market access because trading partners appear to impose trade restrictions disproportionately on sectors that employ poor households.

Table 8. Import tariffs by wage or income quantiles for selected countries

Wage/Income Quantile	Average MFN for indicated year (%)		
	USA 2008	China 2010	India 2012
Q1	4.5	12.7	37.3
Q2	3.8	10.9	36.4
Q3	3.3	9.8	31.8
Q4	2.3	9.3	25.6
Q5	3.7*	9.2	14.3

* This goes down to 0.8% if the high tariff on ISIC 1200 is excluded from the analysis.

6. Conclusion

This paper shows that tariffs tend to be higher and non-tariff measures more prevalent for the poor, thus limiting their opportunities to access international markets.

Countries individually may seek to protect their own "poor" from foreign competition by raising tariffs on the goods these households/individuals produce.¹² There is indeed evidence suggesting that trade policy is biased towards imposing barriers on sectors that employ poor individuals. But, when all countries protect the sectors where the poor work and if the poor are

¹¹ In the US some tobacco products have tariffs as high as 350%, corresponding to ISIC 1200, while the average wage in the tobacco sector is very high, with individuals employed in the sector being included in the top quantile of the income distribution.

¹² This can be the outcome of legitimate concerns, such as the need to protect jobs of workers where labor market frictions or other reasons prevent them from moving to more competitive sectors easily.

employed in similar kinds of sectors in all countries, a coordination problem arises. That is, the goods (and services) produced by the poor will face higher barriers to access international markets than those produced by the non-poor. This will depress global demand for the goods (and services) that the poor produce, thus worsening their income prospects.

In order to get a sense of the obstacles that the “poor” face in accessing international markets, this paper analyzed tariffs faced on goods produced by Indian workers, by sector of occupational activity. It then calculated the average tariff faced by individuals classified according to their position in the overall income distribution. Individuals also were classified according to other characteristics, such as gender, whether they work in the formal or informal sector or whether they work in urban or rural areas.

The results show that tariffs faced in destination markets are higher for goods produced by individuals in lower income groups. Households in rural areas face an average tariff which is 10.9 percentage points higher than that faced by their urban counterparts, and households living in more remote areas (farther from an urban center) face higher average tariffs. Women consistently face higher tariffs than do men. Small informal enterprises also face higher tariff barriers than do large formal enterprises. Moreover, the sectors the poor work in are also disproportionately burdened by non-tariff measures. These findings underline the fact that the poor could be paying the highest penalty if efforts to reduce barriers to trade stall, or worse, countries retreat from the liberalization already achieved. Facilitating access to external markets for the goods that the “poor” produce is key to maximize the potential benefits of trade for poverty.

The recent debate on globalization and income inequality has often indicated that the reduction of trade costs has contributed to rising inequality. This paper reveals a new aspect in this debate. The problem may not be too much globalization, but too little "inclusive" globalization. Many sectors that employ a large proportion of those classified as “poor” still face higher barriers to trade. More research is needed to assess the general equilibrium effects of removing this unbalanced access to international markets and whether this would help reduce income inequality. However, this paper explains why the reduction of trade costs for goods that poor (rural workers and women) households produce would require international cooperation.

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