

TRADE OPENNESS, POVERTY AND INEQUALITY IN INDIA: LITERATURE AND EMPIRICS AT THE SUB-NATIONAL LEVEL

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ABSTRACT

With growing interest in research on issues such as growth, openness, inequality and poverty in general and in the specific context of post-liberalization economies, there is now substantial volume of work available that focus on the interrelationships between these in the context of the Indian economy. Few works, however, have made an attempt to analyze in what ways the relational complexities work at the sub-national level. With the evidence of growing disparity between the Indian states, this is becoming a crucial issue. With the help of constructed trade indices, this paper examines the relationship between export promotion, import substitution and poverty management at the regional level during the post-reform years. It is shown that an admixture of export-promotion and import-substitution policies can help a state manage its poverty better, rather than a solely inward or outward looking policy, since the states that have adopted either of these two (or both) policies have done better in poverty management compared to the others.

I. INTRODUCTION

In post-independence period, India chose a strategy of inward-looking development policies, with strict government regulations and huge room for state intervention. Especially, India’s trade regime was one of the most restrictive ones with measures like import protection, ‘canalization’, a rather complex import licensing system along with high tariff and non-tariff barriers and manufacturing and industrialization policies often geared towards import substitution. During the second half of 1980s, however, after Rajiv Gandhi became the prime minister, several measures of liberalization were taken. Especially, import and industrial licenses were loosened, some quota restrictions were replaced by tariffs. However, the major chunk of trade reforms came hand in hand with the ‘structural reform measures’ followed by the IMF loan that the existing government had to resort to after its severe balance of payments crisis in 1991. Tariffs were drastically reduced, all 26 import licensing lists were eliminated and a negative list was established which covered only a few goods. The negative list was further liberalized later to allow for not only capital and basic, intermediate goods but also consumer non-durables and agricultural products. Quantitative restrictions fell to a large extent also.

With the growing concern of economic literature regarding the situation in developing economies vis-à-vis globalization drives, we think it is relevant to ask the question where the Indian economy stands after one and half decades of liberalization. In particular, how far the measures related to liberalization have helped or hindered alleviating poverty at the intra-national level. This question is especially important because firstly, one third of world's poor reside in India; no economic concern can bypass poverty in the ultimate analysis of the Indian economy and secondly, we have not come across too many studies that have tried to address the issue at an intra-national level. In this paper our concern lies with the relationship between trade performance and poverty management at the regional or state level. Using constructed indices of trade performance from a recent paper, we show that in general, trade openness do not correlate with poverty management significantly, but export performance and import substitution measures independently have serious impact on poverty changes at the regional level. This result is independent of the relationship of trade openness and poverty at the national level.

The structure of the paper is as follows: Section II provides a carefully detailed survey of literature (both theoretical and empirical) regarding poverty, trade openness, growth and inequality in general. Section III provides the literature review on the relationship between these in the specific context of post-reform India. Section IV elaborates on the construction of trade measures at the sub-national level in India and highlights the differential views on the poverty measurement debate in India. This section finally relates the trade measures with poverty measures to arrive at certain new conclusions. Section V concludes the paper.

II. REVIEW OF LITERATURE

Poverty Measurement

As noted by Deaton (2004), economic development has been increasingly conceived as poverty reduction rather than economic growth. The concept of poverty has re-emerged in academic research as well as the agenda of international financial institutions in the 1990s. Poverty, as is well-known, has many dimensions - subjective and objective, relative and absolute, monetary and non-monetary, income and non-income, permanent and transitory. Poverty is also distinct from inequality, as well as vulnerability. Banerjee (2000) thus distinguishes poverty as 'desperation' from poverty as 'vulnerability'. Subjective poverty may be translated in different poverty lines, and subjective perceptions on the meaning of poverty are heterogeneous. The first step is to identify or count the number of poor, and then to aggregate the information into an indicator of poverty (Bourguignon and Chakravarty 1998).

Conceptual debates in this arena are reflected in controversies on measurement issues. Different models of poverty imply different indicators. Money-metric indicators rely on information on consumption; the capabilities approach uses indicators of human development - health and education - and so on. Different indicators have different and complementary uses in terms of identifying the poor and appropriate policies. As highlighted by Ravallion (2003) and Chen and Ravallion (2004), divergences in the assessment of the impact of growth or trade openness on poverty mostly stem from differences in definitions, data, and measurement assumptions. The results also vary depending on the methodology that is used for assessing the trends, in particular whether the data sets stem from national accounts or country-level household surveys (Deaton 2004). As highlighted by Deaton (2001a), many countries exhibit large discrepancies between national survey data, which underlie the poverty count, and national accounts, which are the source of growth measurement, the relationship between the two often become necessarily weak and hence allow for controversies about the impact of growth on poverty.

There is, therefore, much debate regarding the evolution of global poverty. Studies diverge and depending on the concepts, definitions, data sets, time span, and methodology, they may find an increase or a decrease in global poverty. World Bank studies, for example, have found a decrease in poverty

since the early 1980s. By the \$1 per day standard, there were 1.1 billion poor in 2001, i.e. almost 400 million fewer than in the early 1980s (Chen and Ravallion 2004). Some studies, however, consider that these results may be flawed by problems of measurement and data, and that global poverty has in fact increased. For example, usual poverty lines are based on the assessment of the basket of goods and services that is required to avoid poverty. However, it is a difficult task converting this basket into a cost that is consistent across countries and time. The international poverty line of \$1 per day (at 1985 purchasing power parity/PPP) devised for international comparisons has been put to question. Its revaluation to \$1.08 at 1993 PPP has been viewed as understating the fall in the purchasing power of the US dollar. International comparisons of poverty via international measures depend on the reliability of PPP that is used to translate a common poverty line into local currencies. Different methods may lead to under- or overstatements of the relative incomes of countries, as well as to fallacious comparisons of poverty rates. For some studies, the calculations of the World Bank underestimate the real extent of global poverty. The measurement of global poverty has given rise to controversies according to the place given to large countries such as China and India (according to whether poverty is measured by countries or in terms of number of poor) (Chen and Ravallion 2004, Sala-i-Martin 2005).

Growth and Poverty

The relationship between poverty and economic growth is the subject of major controversy in development economics. For most economists—and this view is supported by international financial institutions such as the World Bank—economic growth is the main factor in poverty reduction. It is considered to be more efficient than other instruments, such as state policies. A key matter of debate is the nature and the sensitivity of this relationship, in particular the elasticity of poverty to growth (Bourguignon 2002). A well-known World Bank study by Dollar and Kraay (2001a), based on international data sets, argued that the elasticity of income of the lowest quintile (i.e. the poorest) with respect to mean income is not different from one. This means that reduction in poverty is proportional to the rate of growth. For many economists, however, growth is not enough. The elasticity of poverty to growth may also be less than one.

As emphasized in an IMF study, growth may raise the income of the poor. Yet if this relationship is less than one-to-one, economic growth is not sufficient to reduce poverty. It may even leave the poor worse off relative to the average population (Tsangarides et al. 2002). The conclusions of Dollar and Kraay have been called into question by several studies. The robustness of the model has been criticised, as well as its linearity (Bourguignon 2002). The results are also said to differ if different data and specifications are used. Likewise, a key debate regarding the direct link between growth and poverty reduction arises from the existence of intermediary causalities between growth and poverty. There is no doubt that the poor gain with growth and lose with recessions. However, this is true only on the average: countries exhibit large differences in the modalities of these gains of growth and the extent to which the poor share them. The impact on various categories of poor may also differ within a given country: there may be losers—individuals or groups—even during spells of growth (Ravallion 2001a).

A related discussion has emerged within both the academic and donor communities regarding the type of growth that would be the most beneficial to the poor, the so-called ‘pro-poor growth’. As highlighted by Kraay (2004), once the poverty measure considered falls with growth, the impact of growth follows two main mechanisms: growth of average incomes (‘broad-based growth’); and a poverty-reducing pattern of growth in relative incomes, while the sensitivity of poverty to growth in average incomes appear to be less significant.

For some economists growth is beneficial to the poor if it raises their income in absolute terms and leads to a drop in some measures of poverty (Ravallion 2004a). For others growth is viewed as ‘pro-poor’ when it raises the incomes of the poor proportionally more than it does the incomes of the non-poor

(Kakwani et al. 2004). In all cases there is broad agreement among economists regarding the importance of the ‘pattern’ of growth for growth to have a positive impact on poverty.

Growth and Inequality

The relationships between inequality and growth may go from growth to inequality and from inequality to growth. Among a vast literature, a review of the relationship between growth and inequality is in Aghion et al. (1999). The first type of causality may be non-linear, which has been highlighted by the well-known Kuznets’ curve: growth is associated with an increase in inequality at the first stages of development, and then inequality decreases at higher aggregate levels of income. Regarding the inverse causality, from inequality to growth, economists have considered during a long time that inequality was conducive to growth, following Kaldor (1956): inequality favors higher savings rate, as the rich exhibit higher savings rate than the poor.

This relationship has been questioned in the 1990s with a variety of arguments: for example, inequality may affect the level and composition of investment, or supply and demand mechanisms on labor markets. Several causalities between inequality and economic stagnation may be possible: for example, the poor may have more difficulty to invest in human capital, because they have more difficulty to borrow in order to finance education in the case of imperfect credit markets (Galor and Zeira 1993), or because they are confined to specific types of employment (Banerjee and Newman 1993). Moreover, in rentier societies elites may protect their political power and lock-in its access vis-à-vis the poor, thus reproducing social polarization. High inequality is bad for growth because it leads to educational institutions that hinder growth. High inequality may exacerbate social conflict between interest groups, which leads to public policies (e.g., regarding taxation, education, and the like) that are sub-optimal in terms of social welfare. Rodrik (2000) has shown that societies that foster political participation exhibit less instability and hence better growth prospects. High social polarisation (a concept that is distinct from inequality, though closely related) seems indeed to have a negative impact on growth. These results, however, are contested by other studies that view as before inequality as a positive factor of growth (Li and Zou 1994).

Trade Openness and Growth

The concept of trade openness remains the object of debate, in particular over the indicators. It encompasses heterogeneous elements: facts (flows, such as trade of goods and market integration) and policies (reduction of barriers on trade, liberalization). There have been a great number of studies examining the link between trade openness and growth, and most economists see a positive link, e.g., Sachs and Warner (1995), Panagariya (2004). This view is typically supported by the World Bank, e.g., World Bank (2002). Conversely, countries that do not open and exclude themselves from trade liberalization are viewed as losing from it (Deardorff and Stern 2006).

There are a few dissenting views, which are sceptical on the robustness of the relationship, for example Rodriguez and Rodrik (1999), who question the openness indices that are used in the literature, and Yanikkaya (2003), who shows that the relationship is not always confirmed in cross-sectional analyses. Some studies agree on the fact that the relationship may be positive, but highlight that there may be specific conditions where the relationship does not hold, for example in the poorest countries, because of, for example, very unfavorable initial conditions, incomplete markets, information asymmetries, political economic situations (e.g., predatory regimes), among others. Many studies agree that trade openness create losers, if it create winners, and depending on specific features of economies, many groups may be losing from trade openness. The time frame and pace of adjustment are also a key issue, as the positive relationship may work only in the long term. In a historical perspective Clemens and Williamson (2001) found a positive relationship between trade barriers (high tariffs) and growth during

the period preceding WWII, while high tariffs were associated with slow growth thereafter. They revealed that the positive link between trade openness and growth that is found in many studies is a fact, which relates to a specific historical period, and moreover depends on the global trade environment.

Trade Openness and Poverty

There is a consensus on the fact that if trade openness is positive for growth, it has a positive effect on poverty reduction. A few World Bank studies exemplify the argument that trade openness had a positive impact on poverty, for example the well-known papers by Dollar and Kraay (2001a and b). Winters (2000a and b) identifies six possible channels regarding the relationship between trade openness and poverty: prices change and the effect of changes on the poor; factor markets (employment and wages); changes in government revenue and expenditure; changes in risk and vulnerability; effects on growth; and adjustment costs. Results depend on, in particular, whether trade openness destroys markets or creates new ones, how it affects the ability to bear risk, how labour demand shocks divide between wage and employment effects, and the country's comparative advantage.

Winters et al. (2004) emphasise the importance of the time horizon and the difference of results depending in whether the short term or the long term are considered. In the long run and on average, trade liberalization may be strongly poverty alleviating; the poor, however, may be less well placed in the short run to protect themselves against adverse effects and take advantage of the opportunities that are created by trade openness. Trade openness has improved the situation of the poor in certain countries and regions but not in others. Sub-Saharan Africa is the region the most affected by poverty and where the impact of trade openness since the reforms of the 1980s has been mixed. Many explanations have been provided in order to explain the specific situation of Sub-Saharan Africa: economic and geographical constraints (climate), policy (resistance to reform) and institutional factors.

The channels of transmission from openness to poverty reduction are numerous and include economic as well as political economy channels (government policy, domestic allocation, technology transmission) that affect wages, employment, household production and consumption (Goldberg and Pavcnik 2004). As shown by a number of studies, one has to differentiate the impact of globalization on growth and the impact of growth on poverty – globalization impacting poverty directly through change in relative prices and indirectly through growth effects (Nissanke and Thorbecke 2004). As underlined by Nissanke and Thorbecke (2006a), trade openness offers new opportunities for the poor. The distribution of these gains may however, be uneven; the key question is whether the poor benefit proportionately from trade openness, and whether trade openness can have an adverse effect on the poor. There are different transmission mechanisms according to the various dimensions of poverty, which moreover interact among each other.

There have been several reviews of the literature on the links trade openness and poverty. For Ravallion (2006), the links between trade and poverty differ depending on whether they are analyzed at the 'macro' or 'micro' level. The macro level relies on cross-country comparisons and aggregate time series data, while the micro level uses household data. Ravallion confirms the difficulty of any generalization regarding the relationship between trade openness and poverty. The micro level reveals that welfare impacts of trade openness are highly heterogeneous, with both gainers and losers among the poor. Reimer (2002) and Hertel and Reimer (2004) also aim to link the macro level of trade policies and the micro level of their impact on the poor – the disaggregated household and firm level impacts. They show the dominance of earnings-side impacts over consumption side effects of trade reform, which is a worrying result as household surveys often underestimate income. The market for unskilled labor is the most important dimension. For Hertel and Reimer, the impacts of trade policy on poverty depend on how well the increased demand for labor in one part of the economy is transmitted to the rest of the economy via increased wages, increased employment or both.

In addition, Agenor (2002) highlights threshold effects and non-linearities in the relationship between trade openness – here ‘globalization’ - and poverty. Results from cross-country regression analysis suggest the existence of an inverted U-shape relationship between globalization and poverty: globalization at low (higher) levels tends to increase (reduce) poverty.

Trade Openness and Inequality

Goldberg and Pavcnik (2005) aim at explaining why globalisation does not produce the effects predicted by conventional wisdom – that it would work in favour of the poor that are the relatively abundant factor in developing countries. They review the various channels of the relationships between globalization and inequality. In particular, many factors may explain the increase in the skill premium: outsourcing, the complementarity of capital with skilled labor in global capital flows, skill-biased technological change, as well as compositional changes within industries (exporting, quality upgrading).

Ravallion (2004b) shows that assessments of the relationships between trade openness and inequality (i.e., positive or negative effects of globalization) differ because they are shaped by value judgments about distributive justice, e.g. value judgments as to whether one should weight countries equally or people equally when assessing distributional outcomes, or as to whether the assessments of gains of reforms should focus on aggregate inequality or on specific groups of losers among the poor. Assessments of the impact of globalization also vary because they may refer to different concepts of inequality, i.e. relative inequality, which depends on proportionate differences in incomes, or absolute inequality, which depends on the absolute differences (the income gap between rich and poor).

The relationships between trade openness and inequality are also discussed in Milanovic (2002), who underscores that the predictions of international trade theory remain a matter of controversy, i.e. that increased trade and foreign investment would make income distribution more equal in poor countries and less equal in rich countries. Using cross-country regressions based on household surveys, Milanovic examines the impact of openness (trade/GDP ratio) and direct foreign investment on relative income shares across the entire income distribution, and finds strong evidence that at low average income level, it is the rich who benefit from openness. As income level rises (around the income level of \$5-7,000 per capita), the situation changes and it is the relative income of the poor and the middle class that rises compared to the rich. For Milanovic, openness could first make income distribution worse, and then improve it, another interpretation could be that the effect of openness on income distribution depends on country’s average income level.

The ‘Triangle’ of Growth, Poverty and Inequality

The relationship between poverty, inequality and growth is very complex. For Ravallion (1997) it is impossible to predict in the abstract how differences between countries in a measure of overall inequality (e.g., the Gini index), will influence the growth elasticity of poverty reduction. The outcome will depend on how distribution varies between countries and over time, as well as the specific properties of the poverty measure. Ravallion shows that at any positive rate of growth, the higher the initial inequality, the lower the rate at which income-poverty falls. Inequality may even be sufficiently high to result in an increase in poverty, despite favorable growth prospects at low inequality. For Ravallion (2001), the key question is the share in growth of the poor. The poor typically share in the gains from increases in aggregate growth and in the losses from aggregate contraction, but the question is whether they gain more in some settings than others, and whether some gain while others lose. Inequality may be an impediment to growth but also an impediment to pro-poor growth, i.e. inequality affects the pace of poverty reduction that is achieved at any given rate of growth.

A crucial causal process is therefore the impact of distribution. Inequality within a given country interferes with the direct linkages between growth and poverty reduction. Growth is a key factor in income poverty reduction, but under the assumption that the distribution of income remains constant; at the same time a worsening of the distribution tends to increase poverty. As underlined by Bourguignon (2003), growth, poverty and inequality form a 'triangle': growth has an impact on distribution and inequality has an impact on the rate of growth. A change in poverty is a function of growth, distribution, and the change in distribution.

A well-known issue is the elasticity of poverty reduction to growth and initial inequality. In his study of the growth elasticity of poverty reduction, Bourguignon (2002) demonstrates the links between the rate of economic growth, the pace of poverty reduction, and changes in the distribution of income in a given country. Bourguignon shows that distributional changes explain the variations in poverty reduction as do growth rates. Growth therefore reduces poverty if it comes with falling inequality, with the distribution of the gains from growth depending on initial inequality and changing inequality (Ravallion 2004a).

Far from being purely technical this debate is crucial because it explains the causalities underlying poverty, the plurality of channels between poverty and income growth, and the public policies and public expenditures that are appropriate in terms of poverty reduction. Depending on the causal process that is deemed to explain empirical facts most accurately, the relevant policies for reducing poverty will focus in the first place on the promotion of economic growth, assuming that poverty will be automatically reduced in the short or medium term - for example promoting trade openness or any type of policy that is supposed to foster growth (Dollar and Kraay 2001b). If other conceptions of the links between growth and poverty are preferred, which insist on the role of inequality in particular, public policies that are firstly centered on growth will be viewed as insufficient in themselves. The appropriate public policies will have to explicitly target poverty or intermediary factors such as inequality and distributional changes.

The Relationships between Trade Openness, Poverty and Inequality

Heshmati (2006) uses indices of globalisation that include trade integration (along with other components, such as technology). Using regression analysis, he finds that inequality is negatively correlated to globalisation, and globalization reduces poverty.

A series of studies reveals more mixed results. They sometimes address globalisation rather than trade openness. For example, focusing on relation between globalisation, global inequality and marginalisation within and across countries, Basu (2006) reviews the existing evidence and argues that the two are interconnected. Evidence is highly diverse, which suggests that a single answer for the effect of globalization is too much to expect, and that globalization is potentially beneficial for all. Trade openness makes that prices in poor countries tend to converge towards the level of prices in industrialised countries, but the illiterate and unskilled are unable to take advantage of the technologies, and therefore their wages will lag behind prices. Conversely, skilled individuals in the labor market in poor countries have access to modern technology and will increase their pay: they will therefore benefit disproportionately from trade openness.

Nissanke and Thorbecke (2006b) provide an exhaustive literature review of the debate on the relationships between globalization, poverty, and inequality, as well as the various channels and linkages through which globalization affects the poor. An issue is that there are several ways of measuring world income inequality, which may lead to different assessments of the impact of globalization. There is a 'growth' channel through which globalization affects poverty, with inequality being an explicit filter between growth and poverty reduction. Nissanke and Thorbecke show that the other channels of the relationship between globalization and poverty operate through changes in relative

factor and good prices, factor movements, technological change and diffusion, the impact of globalization on volatility and vulnerability, global flows of information, disinflation, and institutions.

The survey by Goldberg and Pavcnik (2004) also explores the links between trade openness, poverty and inequality, through a survey on recent trade liberalisation episodes, i.e. reductions in tariff barriers in developing countries, with a focus on Latin America. They emphasize that the most heavily protected sectors in many developing countries are often the sectors that employ a high proportion of unskilled workers earning low wages: trade liberalization has therefore a negative impact on unskilled workers in the short- and medium-run. Empirical work has consistently documented a lack of major labor reallocation across sectors. Evidence is mixed and Goldberg and Pavcnik show that what is missing from current empirical work, however, is a clear link between such compositional changes (e.g., quality upgrading in the products of developing countries) and changes in the income distribution.

III. LITERATURE REVIEW ON TRADE OPENNESS, GROWTH AND POVERTY IN THE CONTEXT OF INDIA

The Poverty Debate

Economic reform started in India in 1991. The growth rates in national output since the mid-1980s, and in particular since 1993, have increased more rapidly than in the 1960s and 1970s, partly due to the opening of the economy. As noted by Rodrik and Subramanian (2004), the spectacular character of growth in India has become a ‘cliché’, and indeed, since 1980, its growth rate per capita has more than doubled, rising from 1.7% in 1950-1980 to 3.8% in 1980-2000. This can be attributed to the liberalization of the economy, but for Rodrik and Subramanian, rather than a ‘pro-market’ change favoring consumers, the important factor has been a change in the 1980s of attitudes vis-à-vis the private sector, a ‘pro-business’ change that has favored producers and focused on raising the profitability of industrial and commercial firms.

A question is whether the poor have shared this growth. As emphasized by Deaton (2002), India is a remarkable example in the debate on the measurement of poverty, as well of the measurement of the effects of liberalization and growth in their theoretical and political dimensions. Poverty counts in India matter because more than one-fourth of the world's poor live in India, but also because they triggered an intense debate on the relationships between trade openness, poverty and inequality and as to whether the growth that followed liberalization in the 1990s has helped or hurt the poor.

There are deep disagreements as to the degree to which growth contributed to a reduction of poverty. Regarding the impact of growth on poverty, growth is necessary for poverty reduction, but the instance of the Indian states show that the link between them is not automatic. There are many intermediary factors in the link between growth and poverty. As highlighted by Nayyar (2004), many states which have grown faster in the post reform period do not show rapid reduction in poverty, while some of the states which did not grow fast show higher reduction in poverty, which shows the impact of other factors on incidence of poverty, and in high growth states which significantly reduced poverty, there are regions and communities left out in the growth process.

For many studies, poverty in India continuously declined in the 1990s. The review by Jayaraman and Lanjouw (1998) on poverty in India since the 1960s highlights the heterogeneity of the mechanisms: agricultural intensification, changes in land relations, and diversification helped reducing poverty. Poverty reduction, however, seems to owe much to the diminution of the dependence of the rural poor on patrons. Institutional features such as low caste membership and economic feature such as lack of diversification and reliance for income on agricultural labor create long-term poverty. On the case study of Uttar Pradesh, Kozel and Parker (2002) emphasize the multidimensionality of poverty and the role played by social identity – in particular, gender and caste – in limiting or even blocking opportunities to escape poverty, which can explain why UP has been slow to seize the opportunities created by

liberalization after 1991. Kozel (2003) also highlights the importance of power relationships and the link between poverty incidence and the fact of belonging to specific castes, as well as the link between caste and level of education, and caste and the return on a key asset such as education.

However, since the early 2000s, there has been a hot debate on the measurement of poverty in India, and therefore as to its evolution, i.e. whether there has been a decrease or an increase in poverty. The debate goes beyond pure statistical problems because the assessment of the impact of globalisation on poverty is at stake, and the figures have a domestic political dimension. If the reforms of the early 1990s were associated with growth, their impact on poverty is controversial. The book edited by Deaton and Kozel (2005b) on the 'Great Indian Poverty Debate' gather the key studies on this issue. Deaton and Kozel (2005a) underline that an important problem is the validity of the NSS data and the relevance of surveys compared to national accounts. Deaton (2002) underlined the political dimension of the debate about the discrepancies between estimates of consumption growth based on national accounts statistics (NAS) and those based on household surveys carried out by the National Sample Survey (NSS). According to the NAS, real per capita consumption grew at about 3.2% a year since the reforms, while the NSS data showed little growth throughout the 1990s: therefore the opponents to liberalization quote the NSS data, while reform advocates use the NAS growth estimates.

For Deaton and Kozel, poverty declined between 1993-94 and 1999-2000 but less than the official estimates (from 36% of the population to 26%). An additional cause of controversy is the comparability between the 1993-94 and 1999-2000 survey data – the 50th and 55th rounds of the consumer expenditure survey (CES) carried out by the NSS. Deaton in his presentation of the 2005 book even questions the credibility of the next NSS rounds. Kijima and Lanjouw (2003), after having achieved an adjustment procedure to restore comparability between NSS surveys, show that poverty has declined in the 1990s, but less rapidly than what was found by Deaton and Dreze (2002) who also use an adjustment methodology.

Likewise, after having made data comparable, Sundaram and Tendulkar (2003a) show that poverty in India declined in the 1990s in all dimensions and that the average annual rate of reduction in the last six years of the 1990s has been higher than that between 1982 and 1993. For Deaton and Dreze, as well as Tendulkar and Sundaram, the poverty reduction during that period has been by 7-8.2% points, and not the over 10% point reduction of official estimates. For Deaton (2001b and 2002), poverty fell from 36% in 1993-94, not to 26% as in the official numbers, but to 28%. For Sen and Himanshu (2004a), poverty declined only by at most 3 percentage points between the 50th (1993-94) and the 55th (1999-2000) round, and the absolute number of poor did not decline. As underlined by Nayyar (2004), other indicators of poverty indicate that poverty would decline at a lower rate than projected by the official estimates, for example the employment elasticity of growth declined to 0.16 in the 1990s as compared to 0.52 in the 1980s.

For the World Bank (2006), however, whatever the controversy around the NSS 1999/2000 round estimates, growth since 1980s has led to spectacular reductions in poverty compared with previous periods. In 1979 (the last 'pre-reform' estimate) headcount poverty was at 50 percent, higher than the estimate for 1951, which means that in 32 years (from Independence to 1979) no progress had been made, while the 1999/2000 official poverty rates were at half their 1979 levels.

Differentiating States

A central issue is the difference in terms of growth as well as its impact on poverty across states. The World Bank, while acknowledging growth performances, notes that even if India would maintain current growth rates, it would need 60 years to reach the current U.S. level, and views the sustainability of this growth as the crucial issue. The benefits of growth and the reduction in poverty are so unevenly

distributed across states and regions that even the World Bank wonders whether changes in the fundamental shape of the Indian economy are not exaggerated by the literature (World Bank 2006).

The World Bank data show that growth accelerated in nearly all the states in the 1980s, but gaps widened in the 1990s, between the rich and the poor states and between the middle-income and the poorer states. The World Bank argues that differentiation across states since the early 1990s reflects acceleration of growth in some states but deceleration in others. High-growth performers were a mixed group (rich states, e.g., Gujarat, Maharashtra, and middle-income states, e.g., Karnataka, Kerala, and West Bengal). Growth slowed down in the richer Northwestern states of Haryana and Punjab, because of the slowdown in agricultural growth. Growth stagnated in the states of Bihar, Orissa and Uttar Pradesh, which were initially poor (World Bank 2006).

Datt and Ravallion (2002) consider that India has maintained its 1980s rate of poverty reduction in the 1990s but highlight large differences across states. Poverty fell during the 1990s but not as the growth rate would have predicted. For Datt and Ravallion, growth did not occur in the states where it would have had the largest effects on national poverty. Sectoral and geographical imbalances explain why the impact of growth on poverty has been limited because they greatly attenuated its aggregate impact on poverty. Datt and Ravallion show the variation in the elasticity of poverty to non-farm output across states and the non-farm growth has not been concentrated in the states where it would have had the greatest impact on poverty nationally because of systematic differences in initial conditions across states. Certain types of initial inequalities impede the prospects for growth-mediated poverty reduction, such as asset inequality (land) and education: the states with low levels of human capital and low farm productivity have lesser capacity to reduce poverty as a response to growth. This shows that growth cannot be enough for reducing poverty in India, as the causality is shaped by inequalities in human capital and between the rural and urban areas.

Based on 20 household surveys in 15 states over the period 1960-1994, Ravallion and Datt (2002) find that initial conditions and the sectoral composition of growth modify the impact of growth on poverty, as do the key factor of the differences in the elasticities of poverty to rural and urban non-farm output across states.

Besley et al. (2005) show that poverty reduction has varied across Indian states and across rural and urban sectors. Different states have experimented with a variety of policies and their initial conditions were different. These differences allow for an assessment of whether economic growth has affected the pattern of poverty reduction across Indian states. For Besley et al., poverty reduction performance in a state depend in part on the extent to which a unit of growth affects poverty and in part on whether the state is growing more quickly relative to other states. They show that the heterogeneity in poverty reduction experiences among Indian states depend on the policies (land reform, rural bank branch expansion, labor deregulation) that states adopted and the initial conditions (e.g., land institutions, female literacy, female labour force participation). They all shaped the ability of states to reduce poverty.

Regarding the effects of liberalisation across states, Aghion et al. (2005) analyse the effects on manufacturing output, employment, entry and investment of dismantling of the system of central controls. They find that these effects vary across Indian states when they have different labor market regulations. The effects are unequal depending on how institutional environment of industries are embedded in the states. They also find that following delicensing, industries located in states with pro-employer labor market institutions grew more quickly than those in pro-worker environments.

Growth, Poverty and Inequality

The World Bank (2006, fig. 1.10, fig 1.15) observes that India has a relatively equal distribution of income across states, as measured by standard deviation of GDP per capita, as well as a low level of

income inequality, if it is compared with other developing countries such as China or Brazil, though these measures show an increase between the 1980s and the 1990s. Rising inequality per se does not imply that poverty reduction has been lower than what it could have been otherwise, Bourguignon (2003) having shown the complexity of the triangular relationship between growth, poverty and inequality: inequality does not impede poverty reduction if it is associated to a growth process that is large enough to reduce poverty. The World Bank underlines, however, that India remains an unequal society by other measures and that social stratification and exclusionary mechanisms are resilient (e.g., the caste system or prejudice against girl children).

Regarding the profile of growth across states and the links with inequality and poverty, the study by Purfield (2006) of the variation of growth across states underline the following series of facts, i.e. that the income gap between the rich and the poor states has widened; rich and faster-growing states have been more effective in reducing poverty (poor and slower-growing states have had little success in generating private sector jobs; labor and capital flows do little to close income gaps; the volatility in economic growth is greatest in poor states). Purfield's econometric analysis using data from the 15 largest states for 1973/74–2002/03 suggests that differences in policies adopted by states affect their pattern of growth.

Regarding the increase in wage inequality in urban India over the period 1983-99, Kijima (2005) explains it by the increases in the returns to skills, which is itself a result of the increases in the demand for skilled labor. Kijima explains the demand shift by skill-biased technological changes within industries.

As underlined by Ravallion and Chen (1997), the poverty reduction effect and the inequality increase effect work in opposite directions, because inequality slows poverty reduction. In the 1990s, consumption inequality has increased, as shown by Deaton and Drèze (2002). Sen and Himanshu (2004a) conclude that over the 1990s economic inequality increased sharply “in all its aspects” and therefore poverty reduction deteriorated despite higher growth. They emphasize marked differences between states in terms of poverty reduction. Comparing the 55th NSS round with the 43rd (1987-88), they find that although 55th round poverty ratio is lower than the 43rd in most regions, the number of poor increased in 29 rural and 42 urban regions spread all over the 58 NSS regions in major states. Urban-rural disparity increased; and within-region urban inequality increased in 40 NSS regions. During the 1990s, the gap between rural and urban India has increased as in most states improvements in urban incomes outpaced rural incomes (Sen and Himanshu 2004b). Moreover, regarding inequality between individuals and households, the study by Banerjee and Piketty (2005), using tax data reveals that during the 1990s the rich have been getting richer faster than any other group, which has been driven by the super-rich, i.e. the 0.1% of the population of tax units.

Topalova (2005a) also finds that trade liberalisation had a different impact on poverty and inequality across states. In rural districts where industries were more exposed to liberalisation, trade liberalisation has had a negative effect on poverty reduction. Trade liberalization led to an increase in poverty and poverty gap in these rural districts. She finds substantial effect: compared to a rural district experiencing no change in tariffs, a district experiencing the mean level of tariff changes saw a 2% increase in poverty incidence and a 0.6% increase in poverty depth. This set back represents about 15% of India's progress in poverty reduction over the 1990s (Topalova 2005b). For Topalova, this adverse effect of trade liberalization results from the very limited factor mobility across regions and sectors.

IV. POVERTY AND TRADE MEASURES: THE CASE OF INDIA

General Background

Standard economic theory (Heckscher-Ohlin model) predicts that gains from trade to a country would flow to that factor(s) with which the country is abundant. Poverty and personal distribution of income do

not feature much in these theories. The only prediction one can make following these theories is that if labor is rewarded more than capital in a labor abundant country like India, trade openness should benefit labor, thereby reducing both income inequality and poverty. As we have already mentioned, these conclusions are hasty and the new theories (e.g., Banerjee and Newman 2004, Feenstra and Hanson 1996, Marjit and Acharyya 2003) do not support them. According to these theories, trade openness can reduce the wages of unskilled labor even in a labor abundant country. Moreover, some of these theories maintain that even if global economic integration induces faster economic growth in the long run and substantial reductions in poverty, the adjustment might be costly, with the burden falling disproportionately on the poor. As Topalova (2005) rightly points out, due to the theoretical ambiguity, the question of how trade liberalization affects poverty remains largely an empirical one.

So, in the short run, trade liberalization acts more like an indirect income redistributing policy than a policy for poverty alleviation. Rather, as some writers observe (e.g., Acharyya 2005) the long-run or growth impact of trade liberalization is more important for poverty alleviation as, with acceleration of growth of output, opportunities for upward income mobility for the lower income groups gets stronger.

In the paper we focus our attention mainly on the relationship between trade performance and poverty changes at the sub-national (regional or state) level in India. While this is one of the first attempts that look into this relationship at a disaggregated level in the context of post-reform India, it must be mentioned that our scheme here offers an initial insight into the relationship. A substantial amount of work needs to be carried out to have a more structured theoretical framework. That would also call for further finesse at the level of empirics.

To start with, we elaborate on the two sets of data on trade performance and poverty changes in the context of India. While the former is a constructed (worked-out) dataset, a whole lot of research has also gone into upgrading the data on poverty to make it comparable from one round of survey to another. The process of construction/upgradation of data needs to be described briefly in order to arrive at our exercise.

Trade Indices

Marjit, Kar and Maiti (2006) construct export-import profile for each of the 15 major states in India. Their idea is to construct a trade openness index at the regional level. As they elaborate clearly in their paper, the term openness is widely used in international economics and economic growth literature and different trade theorists have come up with different indices for measuring openness. However, all these indices use data at the national level. Theirs is one of the first attempts to construct trade openness at the regional or state level.

The theoretical framework of their paper is as follows. They link the level of output of a specific state to all-India trade figures to get an approximate indicator of how much 'open' it is. They had to use the proxy since export-import data for each region is not available. If for a specific state most of the production is concentrated in the items that at the all-India level contribute largely to export value, then it is reasonable to conclude that that particular state is attuned to exports. Similarly, if a state has high production value of import substitutes, then it must be relying less on imports and hence is not so open.

So firstly, they calculate the share of value added by an industrial group in a particular state.

$$s_{it}^k = \frac{GVA_{it}^k}{TVA_{it}^k}, t = 1980 - 81, \dots, 2002 - 03$$

Where s_{it}^k is the production share of i^{th} industry in the k^{th} state at time period t

GVA_{it}^k is the gross value added of the i^{th} industry in the k^{th} state at time period t and is the sum total of net value added and depreciation

TVA_{it}^k is the total of all gross value added of all the industrial categories that cover our export and import items (national industrial classification 15-16 to 34-35 including the food beverages and tobacco industries)

Secondly, they calculate the share of the products under consideration in total exports of India by

$$x_{it} = \frac{X_{it}}{X_t}$$

where x_{it} is the export value of i^{th} industry in total exports at time period t , X_{it} is the export value of the i^{th} industry at time period t , X_t is the total export value of India at time period t

Similar to export share, import share is derived as:

$$m_{it} = \frac{M_{it}}{M_t}$$

where m_{it} is the import share of i^{th} industry in total imports at time period t

Thirdly, they correlate x_{it} and m_{it} with s_{it}^k separately for each year and each state. They call the first correlation export performance and the second import competing performance. The correlation coefficients are then ranked for each year over the states.

Lastly, they construct the trade openness index by giving a weight of $\frac{1}{2}$ to each export performance ranking and inverse of import performance ranking (it is assumed that a state's openness is inversely related to its import competitiveness).

Their paper is mainly devoted to constructing the indices (of export performance, import competitiveness and openness) over a 23 year period across 15 major states. Thereafter, they relate the openness indices to growth of per capita net state domestic product (PCNSDP) or more simply put, state income. Their paper shows that a positive trend can be observed if one looks at the correlations between export performance ranks and ranks of PCNSDP over the entire period. Similarly, a negative trend can be discerned by looking at the year wise correlations between import competing performance ranks and ranks of PCNSDP. Finally, a clear positive trend can be observed between the ranks of openness and PCNSDP and a feeble positive trend is observed between the ranks of PCNSDP growth and openness. From this they conclude that trade openness is related to rising income disparity across states in India.

Poverty Measures

The crudest measure of poverty is the head count ratio which measures the percentage of population who are poor. i.e., who have income or consumption below a certain poverty line. This is a widely used but also a limited measure since it captures the magnitude of poverty but not the depth of it, since it gives the same weight to the poorest of the poor and relatively less poor populace. To take care of this problem poverty gap index is used which measures the aggregated income shortfall of the poor as a percentage of the poverty line normalized by the size of population.

Majority of poverty and inequality estimates in India are based on the expenditure distribution of Indian population provided by the National Sample Survey (or NSS). However, estimates arrived at by the

Planning Commissions and other independent researchers vary widely from the NSS and from each other, mainly because price indexation used to adjust the poverty line for inflation vary and also because of other minor reasons, for instance, the type of poverty line that one uses, etc.

The debate centering on the adjustments around poverty measures in India has been vigorous. We cannot and do not intend to go into the debate in great details here since this is not the purpose of this paper. But we will present some insights into the nature of the debate to justify why we resorted to one or two measures more than the others.

NSS estimates have certain ‘thick’ rounds where the sample size of estimation is much larger than the other ‘thin’ annual rounds. The data available on the latest annual thick round is that of 1999-2000, this year another such round is expected. For reasons that we will elaborate later, we take the comparable poverty data of 43rd (1987-88), 50th (1994-95) and 55th (1999-2000) rounds mainly. The debate around 55th round became strong on the following issue: reference period used in the 55th round survey changed from the uniform 30 day recall used till then to both 7 and 30 day questions for food and intoxicants and 365 days for other items including durables, clothing, footwear, etc.

This was done in the face of growing criticism that NSS data was ‘overestimating’ poverty because its estimates were diverging from those of National Accounts Series (NAS). The Planning Commission based its poverty estimation on the 55th round’s 30 day recall period, etc. since subsequently there has not been any survey using the uniform 30 day reference period. The Planning Commission’s estimation of poverty decline was as high as 10 percentage points and many people including the Commission itself started getting worried about whether this was not because of the change in survey methodology. Sen (2000) had shown that the inclusion of both 7 and 30 day period had led to ‘contamination’ of the data.

Sen and Himanshu (2004b) later analyzed the adjustments made by Sundaram and Tendulkar (2003a, 2003b, 2003c), Deaton (2003a and 2003b) and Deaton and Dreze (2002). They took much pain in analyzing why Sundaram and Tendulkar’s method, even after correcting for the 55th round’s methodological difference failed to eliminate the underestimation of poverty. Further they analyzed the problem with Deaton’s estimation where because of the nature of estimation there has been an upward revision in the food estimates leading to an overestimation problem. Finally, they constructed comparable dataset by using 30/365 Mixed Reference Period and also the Uniform Reference Period of 30 days. They took both state-specific and national poverty lines to give a comparable estimate of headcount, poverty and squared poverty gap measures. From there they show that although poverty declined using MRP, it was only 2.8% point compared to the official 9.8% point. Also poverty ratios declined less during the period from 1993-94 to 1999-2000 compared to 1987-88 to 1993-94 and they conclude that poverty reduction has suffered a set-back in the 1990s. We quote: ‘This restores and gives confidence to the earlier assessment that poverty had grown significantly in the 1990s when growth had faltered during crisis and stabilization, and that poverty reduction had been held back during the subsequent growth recovery because of increased inequalities.’

Although we will not deal with the overall poverty situation in the economy in detail in the present paper, this is an important conclusion to be in the background while we look at the sub-national data in the change in poverty. Also, this detailed account of the methodological debate is provided to give some idea as to how much care one has to take while calculating anything related to the database in the Indian poverty measurement. We do the majority of our calculations based on Sen-Himanshu’s data since it is now widely acknowledged as having taken considerable trouble of comparing various estimates and going for serious corrective measures. However, Deaton’s estimates are not found to be as seriously faulty with respect to the adjustment factors as others and hence we show the results with Deaton’s poverty estimates too.

Let us now explain why ‘thick’ rounds before the 43rd could not be taken. Sen-Himanshu provide comparable data only for the 3 rounds we have mentioned before and not any earlier round. Therefore, we could not take any other previous ‘thick’ round. But what we still have done additionally is: we have

taken an estimate from Bhalla (2003) for the 39th round and tried to set our exercise also for the period 1983-1987. Since 43rd round is not entirely incomparable with the 39th round, the result cannot be entirely wrong. But we avoided, for the right reasons, taking data for the entire period from 39th to 55th round.

Relationship

How does one explain changes in poverty across Indian states over the years? As we have already elaborated, significant work in this context is lacking, to say the least. The poverty measurement debate (involving Tendulkar and Sundaram, Deaton, Deaton and Dreze, Sen and Himanshu) talks about the measurement issues involved in comparing poverty changes over time, it has not taken upon itself the task of explaining those changes for obvious reasons: the focal point of the debate is something else.

Other contemporary works like Acharyya (2005) dwell on the issues of trade, poverty and income inequality during the reform period in India but it is an aggregative analysis. It talks about the growth impact of trade on poverty and income inequality at the all-India level during 1985-2000. Although analytically insightful, this paper does not deal with any of the issues at the disaggregated state level as we do. Topalova's paper (2005) is the only one that deals with the impact of trade reforms at the sub-national level. But her paper looks at the impact of trade reforms on poverty and inequality in rural districts rather than at the state disaggregate level. Also, her main explanatory variable (the measure of openness) is district level tariff whereas we will take the export-import profile of a state to measure openness.

Therefore, despite the fact that globalization in India has inspired a huge amount of research till date, there is a dearth of quantitative research that has gone into relating poverty and globalization at a disaggregated (state) level. Our research aims to contribute to that. There can be a whole lot of issues that can explain poverty changes at the state level for such a diverse economy like India. We will not try to identify them. Rather, our task would be to see whether state level poverty changes can be related in any significant way to the trade indices that we have described above. The correlative impact can be best measured by rank correlations between poverty changes and various trade indices.

Methodology

As we have already mentioned, Marjit, Kar and Maiti (2006) calculate the ranks of correlation coefficients between export share and gross value added (GVA) share of industries in various states from 1980-81 to 2002-2003 on a yearly basis. From that, we calculate the average ranking of the states in terms of export performance in the period 1987-88 to 1999-2000, the period which is relevant for us for looking at the data of change in poverty between the 43rd, 50th and 55th rounds of NSS. We call this as the average ranking in export promotion by the Indian states during the period 1987-2000.

Similarly, from their study we take the ranks of correlation coefficients between import share and GVA share of industries in various states on a yearly basis and calculate the average ranking during the period 1987-88 to 1999-2000. We call this as the average ranking in import substitution by the Indian states during the relevant period.

For data in poverty changes we take Sen-Himanshu and Deaton measures from 1987 to 1999-2000, since Sundaram-Tendulkar's measures are now widely regarded as problematic. We calculate Spearman's rank correlation between the ranks of poverty change and export promotion, import substitution ranks. We give the results below:

Table 1: Spearman's Rank Correlation between Trade Indices and Poverty using Sen-Himanshu Poverty Measures (1987-2000)

Import Competitiveness	Change in Urban Poverty (HC ratio)	-.4429 H ₀ rejected at 10 % level of significance
Import Competitiveness	Change in Urban Poverty (poverty gap)	-.3910 H ₀ rejected at 15 % level of significance
Export Promotion	Change in Urban Poverty (HC ratio)	-.4143 H ₀ rejected at 12 % level of significance
Export Promotion	Change in Urban Poverty (poverty gap)	-.3928 H ₀ rejected at 15 % level of significance

Table 2: Spearman's Rank Correlation Between Trade Indices and Poverty using Deaton's Poverty Measures (1987-2000)

Import Competitiveness	Change in Urban Poverty (HC ratio)	-.3750 H ₀ rejected at 17 % level of significance
Export Promotion	Change in Urban Poverty (HC ratio)	-.1464 H ₀ rejected at 60 % level of significance

Table 3: Spearman's Rank Correlation between Trade Indices and Poverty using Sen-Himanshu Poverty Measures (1987-2000)

Import Competitiveness	Change in Rural Poverty (HC ratio)	-.2357 H ₀ rejected at 40 % level of significance
Import Competitiveness	Change in Rural Poverty (poverty gap)	-.1750 H ₀ rejected at 53 % level of significance
Export Promotion	Change in Rural Poverty (HC ratio)	-.4964 H ₀ rejected at 6 % level of significance
Export Promotion	Change in Rural Poverty (poverty gap)	-.4429 H ₀ rejected at 10 % level of significance

Table 4: Spearman's Rank Correlation between Trade Indices and Poverty using Deaton's Poverty Measures (1987-2000)

Import Competitiveness	Change in Rural Poverty (HC ratio)	-.2963 H ₀ rejected at 28 % level of significance
Export Promotion	Change in Rural Poverty (HC ratio)	-.4651 H ₀ rejected at 8 % level of significance

This is the situation where the relationship between change in urban poverty and import competitiveness is quite strong for the HC ratio under the Sen-Himanshu measure. For poverty gap and Deaton's measure, the relationship can be said to exist although, the null hypothesis of independence of variables have to be rejected in these cases only at less than 90% level of significance. As far as export promotion is concerned, the relationship seems to follow the same pattern with almost the same strength in correlations except for Deaton's measure where the EP index shows no significance.

In case of rural poverty we see everywhere, for all the measures of poverty, export promotion has a strong negative correlation with changes in poverty whereas import competition has insignificant impact.

One would be tempted to ask at this point: can it so happen that export promotion and import competition indices are themselves strongly correlated, so that the correlative impact of import substitution and poverty alleviation are actually working through the other route of strong correlation between export promotion and poverty changes? We checked the correlation between the average ranking for the period between export promotion and import substitution. The correlation has a positive sign but is not at all significant, and therefore, the trade indices-poverty relationships can be taken as individually true.

It is interesting to observe that Marjit, Kar and Maiti's 'trade openness index' at the state level did not yield significant relationship with poverty change due to this reason (we have not shown the result since it is insignificant). As we have already spelt out, their trade openness index is the simple average of the (ranking of) both the export promotion index and the inverse (ranking) of import substitution index. Obviously, the correlative impacts of the individual indices on poverty changes are canceling out in the composite index.

Does state income have any relationship with either the trade indices or poverty change measures? All the correlations we look at (correlation between state income ranks and import competitiveness or urban poverty changes, both headcount and poverty gap, are insignificant. The only significant correlation is the one that income bears with export promotion (Spearman's rank correlation = .6607). Expectedly, richer states are also mostly the states that engage in export promoting activities. This set of results makes it clear that: a) poverty changes are not in any significant way linked with initial income (a known result); b) despite being not so rich initially, the poorer states can manage poverty better by import substitution activities.

Interpretation

Acharyya (2005) has compiled various estimates of urban poverty during the time frame of 1987-2000. He has compared between the World Bank and Deaton-Dreze estimates and has shown that according to

both of these, urban poverty (both head-count and poverty gap) has shown a declining trend in the period in question at the all-India level. This trend, he observes is absent for rural poverty.

Also, Acharyya observes in the same article that ‘a statistically significant negative correlation between urban head-count and PG ratio and the Trade Openness Index (TOI) exists’ at the all-India level in that period. This Trade Openness Index is defined as the ratio of the value of trade to GDP. Interestingly, he finds that rural poverty does not have any such relationships with the TOI.

Posing our results in this background, we see that although the standard trade openness index may have shown a positive impact in the decline of urban poverty of the country as a whole, the result of trade openness at the disaggregated level is not at all clear. In fact as our exercise shows, exposure to trade and urban poverty changes in the era of globalization (roughly taking, our 13 years) do not hold any significant relationship at the disaggregated state level. Rather export promotion and/or import substitution, each separately, seems to have a positive bearing on the reduction of urban as poverty. Also, although Acharyya does not find any time trend in the movement in rural poverty and fails to find any correlation between rural poverty and the Trade Openness Index at the all India level, our correlations clearly show that the among the trade indices, export promotion has quite a strong influence on the reduction of urban poverty. The dissimilarities are striking and underlie the fact that for such a huge and diverse country like India, aggregate macro estimates often hide the disaggregated relational equivalences, which may have important bearing on economic predictions.

Looking at the relative importance of trade items over the period in question we see that industrial group wise **Rubber, Plastic and Petroleum** has always occupied the highest place in the share of import commodities in total imports followed by firstly **Machinery and Equipment** and secondly, **Chemical**. It now goes without saying that import substitution in the Indian context would go hand in hand with industrialization and given the volume of unemployment that the Indian economy suffers from, states that have channeled their resources into import competing industries should be able to bring down their unemployment to some extent. This has an immediate effect on lowering urban poverty, both number wise and depth wise.

This fact is further corroborated by our results in Table 3 where we see that import competitiveness has insignificant effect on both the Head Count and Poverty Gap measures of rural poverty changes (Sen-Himanshu) and also on Deaton’s measure of Head Count rural poverty changes. As none of these industrial categories where import competitiveness takes place can be related easily to the rural sector (other than through quite indirect routes), rural poverty remains unrelated to this index. It is clear that in the industries mentioned above, demand for skilled labor would be much more than unskilled labor and a rise in the wage gap might ensue, but one can reasonably conclude that overall urban poverty has a chance of getting reduced through a direct effect via a general rise in labor demand.

Similarly, looking at the share of export commodities over the years we see industry group wise **Textile and Clothing** occupies the major position in all the years closely followed by **Food, Beverages and Tobacco**. This immediately explains why the Export Promotion Index has significance for both urban and rural poverty changes. While **Textile and Clothing** is unquestionably a group of industries having direct effect on urban employment, **Food, Beverages and Tobacco** group constitutes the agricultural (or agriculture related industries, National Industrial Classification Code 15-16) exports.

Incidentally, Acharyya justifies the lack of relationship between rural poverty and TOI at the all-India level by the fact that agricultural trade is restrictive and non-farm activity in rural India is very little. Even if we accept that agricultural trade is restrictive (which is not the case, as the position of export in **Food, Beverages and Tobacco** shows), there always remains the question of interlinkage of several types, e.g., between traded and non-traded goods and the impact of urban trade on the rural-urban terms of trade. Impact of trade on rural poverty may or may not be perceivable, but as our simple exercise at the disaggregated level shows, rural poverty is susceptible to international trade in the Indian context - Topalova (2005) has also found significant impact of trade liberalization on the rural districts in India.

We would also like to state one result that we do not consider to be a major one since the estimates are not done on any comparable basis, but this result has another importance in our context. The data is taken from Bhalla (2003). This is the only study available that talks about the 39th round of NSS while measuring poverty changes over the NSS rounds. Due to the factor of non-comparability, all we did with his data was to calculate the change in poverty from 39th to 43rd rounds and see how far the average ranking of trade indices correlate with that.

Table 5: Spearman's Rank Correlation Between Trade Indices and Poverty using Bhalla's Poverty Measures (1983-1987)

Import Competitiveness	Change in Urban Poverty (HC ratio)	-.1413 H ₀ rejected at 38.46 % level of confidence
Export Promotion	Change in Urban Poverty (HC ratio)	-.2770 H ₀ rejected at 68.25 % level of confidence

As we can see, the rank correlations are not significant for either of the two indices, although they have the right sign. This may be due to the fact that the stretch of time is too short to capture any trend that could develop. But there is a second possibility. The correlative impact of trade indices and poverty changes may not have been that strong in the pre-reform period as it has been in the post-reform period. To see if this hypothesis holds water, we have to stretch our data set backwards (before 1983). This is one exercise that awaits us in our future research.

Future Work

As we have mentioned at the outset, this study is quite preliminary in many senses of the term. We had severe data restraints since changes in poverty had to be comparable and the question of comparability is still a major issue of contention vis-à-vis poverty measurability in India. Since the trade indices we use are annual, one big exercise would be to compare the annual data excepting the quinquennial major rounds whose data we have compared in this paper. Annual data published by the NSS is based on a much smaller sample size, and the major and annual rounds are not at all comparable. But one still needs to check the relationship between the annual trend in poverty change and trade indices, one good exercise would be to take poverty change as a lagged variable to be explained.

Secondly, a theoretical framework needs to be carved out where the relationship between poverty and trade openness could be explored in more concrete terms. As we have already mentioned, many recent models try to resolve the inconsistency between standard trade theoretical results and empirical reality in the context of developing countries. For example, Feenstra and Hanson (1996) show that the composition effect of trade liberalization is the main reason why with the latter wage inequality and poverty tend to rise. The composition effect of an inflow of foreign capital works in favor of higher stages of production activities with increasing skill intensity along the vertical chain of production. This raises the relative demand for skilled workers and therefore their wages relative to the unskilled workers. Also as Acharyya (2005) mentions, reallocation of resources across the traded and non-traded sectors, and across the formal and informal sectors, are the two main channels through which trade liberalization can raise wage inequality and therefore contribute to overall income inequality within a country. The process of interactivity between trade openness, growth, inequality and poverty needs to be seen in the framework of a general equilibrium model.

Also, the poverty-inequality-growth relationship needs to be explored at this disaggregated level in a detailed manner.

V. CONCLUSION

With growing research on the issues like growth, openness, inequality and poverty in general and in the specific context of post-liberalization economies, there is now substantial volume of work available that focus on the interrelationships between these in the context of the Indian economy. Few studies, however, have tried to explore in what ways the relational complexities work at the sub-national level. With the evidence of growing disparity between the Indian states, this is becoming a crucial issue. With the help of constructed trade indices, this paper has analysed the relationship between export promotion, import substitution and poverty management at the regional level during the post-reform years. We have not come across any such study that has attempted to do this exercise in the Indian context.

An interesting policy outcome of this study is that neither solely inward looking nor solely outward oriented trade policies can be said to have a positive impact on alleviating poverty at the state level in the face of increasing overall openness. Rather, it has been shown that given the composition of India's trade, an admixture of export-promotion and import-substitution policies can help a state manage its poverty better, rather than a solely inward or outward looking policy, since the states that have adopted either of these two (or both) policies have done better in poverty management compared to the others.

Finally, it should be emphasized that poverty is a multi-dimensional concept. This is especially true for a country like India where social stratification is remains extremely resilient. Therefore, it does not make much sense to claim that a single factor has affected poverty and run regressions to measure the extent of that. The purpose for this paper was to examine simply if there exists any significant correlative aspect between trade measures and poverty at the regional level. This study is further necessitated by the generally agreed view that during the entire liberalization period poverty decline has suffered a setback and inequality has increased. With this background, the results of our study can shed some light on the ways in which increasing openness may or may not make a state more vulnerable vis-à-vis its poverty management. These results can further be deployed to make some predictions at the supra-regional level.

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