

EXPLORING THE LINKS BETWEEN GLOBALISATION AND POVERTY IN SOUTH ASIA

Final Research Report on a DFID-supported project
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1. **Background and Objectives**

This report draws together experiences and findings from a series of papers executed under a DFID project on Globalisation and Poverty in South Asia. The project participants had earlier been involved in an IDRC (Ottawa) initiative (Microeconomic Analysis of Structural Adjustment Programmes - MIMAP) of capacity building and technical assistance to a series of countries, and each extended and enlarged their work in this follow-on capacity building project. Each took two issues and used numerical modelling methods to attempt to isolate the significance of globalisation/poverty linkages in their own country. This report both summarises and itemises this activity.

The original proposal for this project began from the observation that there is an extensive literature discussing how globalisation and poverty are linked in general terms (econometric, analytical, modelling) but seemingly few clear conclusions based on specific cases. There appears to be little literature which examines and dates significant globalisation shocks and links these to data on inequality change. Most literature (Dollar and Kraay (2001), Sachs and Warner (1995) deals with the relationship between openness and growth, on the presumption that higher growth rates reduce absolute poverty. South Asia seemed to provide a good laboratory experiment for such analysis in the form of similar but different experiences in Bangladesh, India, Pakistan and Sri Lanka. Globalisation, seen as trade liberalisation, had seemingly occurred relatively rapidly and in concentrated form (India 89/91; Bangladesh late 80s; Pakistan 80/86; Sri Lanka 77/96). In addition, the existing network of young modellers supported by (IDRC) provided an opportunity to work with younger developing country scholars to analyse the South Asian country experiences and to attempt to formulate some more concrete hypotheses as to how globalisation and poverty were linked in these cases. The proposal was to work with scholars from these four South Asian countries, with each scholar to provide two papers for the project.

There were, however, a number of problems which were anticipated with the project analyses. One was the problem of identifying globalisation shocks (which instrument changed, the treatment of exchange rates, results reflecting inequality impacts of globalisation outcomes (trade flows) rather than instrument changes). Also, even before attempting any model-based analyses, inequality data were hard to read and interpret. These data seemed to show falls in absolute poverty (head counts) over the long run in all four countries, but little change in inequality before and after liberalisation (based on Gini and decile ratios). A first-cut crude analysis seemingly pointed to globalisation (trade liberalisation) having little effect on inequality in the medium term, while absolute poverty fell. Even accepting the data, there were many problems with this conclusion for which it is necessary to develop model-based analyses. One is disentangling globalisation impacts from other influences on outcomes, such as technical change, or foreign investment flows (decomposition). Another is exploring the role of excluded variables (education response, remittances) in effecting globalisation/poverty linkages. Yet another is assessing additional poverty impacts (gender inequality, textiles) and examining global influences on inequality (technology).

This project, then, was based on the hypothesis that despite current unease, the precise links between globalisation and poverty and how they operate remained surprisingly poorly researched. This is, in part, because there are a number of different possible channels of impact, and they are under-explored in the literature. It is also because analytical linkages are at issue which cannot be easily analysed qualitatively; some formal numerical simulation analysis is needed. This project aimed to explore how these channels of impact operate, what their quantitative significance is, and how plausible alternative analytical structures which generate poverty are, and bring these findings to the policy communities in participating countries.

The idea was to use pre-existing numerical general equilibrium models of the South Asian economies to analyse the sign and strength of various linkages between globalisation and poverty. A two-year project involving Warwick researchers and four developing country researchers who had been involved in the multiyear IDRC effort -was planned. Bangladesh, India, Pakistan and Sri Lanka were the planned partner countries, since all four had data and modelling capability. This earlier IDRC project had both compiled detailed databases on poverty in selected countries, and had built numerical general equilibrium models for the analysis of the impacts of structural adjustment policies (including trade liberalisation). Links between globalisation and poverty had not, however, been formally explored in this work.

2. Methods

The channels of potential impact of globalisation on poverty are multiple, and to some degree also mutually conflicting. If imported products are bought more heavily by richer urban households, then trade liberalisation as a key element of globalisation will tend to be pro-rich because it reduces the price of luxury items bought more heavily by the rich. On the other hand, if manufacturing industry is operating behind a protective trade barrier and generates rents which accrue to the rich, then the elimination of trade barriers will reduce these rents, and this may tend to produce a pro-poor outcome.

In turn, there are scenarios under which globalisation as a process has relatively little aggregate impact on poor households, and what impacts occur do so in a very uneven manner. For instance, in economies where there are deficiencies in infrastructure, and significant fractions of the rural population are close to subsistence, then it is only those groups which have a sufficient degree of connectedness to the formal economy through such infrastructure as roads and communications who are able to benefit from new opportunities associated with integration into the global economy. As a result, one can also conclude that

the impacts of globalisation in such economies may well be small, but the impact on groups among the poor will differ.

Another channel for globalisation-poverty interactions involves impacts on labour markets, a theme which has received substantial attention of late. There are data which indicate that for economies which have moved to an outward-oriented stance, such as Bangladesh (in textiles), the impact has been pronounced in terms of elevated wage rates for landless female labour. As such labour originates in the rural areas, and some of it moves into the urban areas following globalisation and receives higher wage rates, this outcome can represent a substantial improvement in terms of inequality within countries due to the gender impact.

Other scenarios link globalisation to poverty in a broader sense and also at a global level. One involves the impacts of global technological change on the poor. A WTO report on e-commerce a couple of years ago argued that developing countries tend to face relatively high barriers to their trade because of marketing and distribution difficulties in penetrating foreign markets in a non e-commerce world. Modelling e-commerce as a levelling of trade barriers suggests that the benefits of e-commerce could accrue disproportionately to small and poor countries. Under this argument, globalisation can thus be a force for positive redistribution across countries as well as within countries. Other issues involve the impacts of direct foreign investment within countries, and whether the employees of plants in processing zones receive higher or lower income wages than on average.

Thus the purpose of the project was to extend existing country-based modelling capabilities so as to capture various globalisation-poverty linkages not present in existing models, and use these model extensions to assess the importance of these linkages for South Asia. These include the impacts of trade liberalisation and outward-oriented growth on poverty, FDI and its impact on domestic market structure and hence inequality, increased

price and macroeconomic volatility within countries with higher degrees of globalisation and its implications for poverty, and the impacts of global technological advance on poverty.

The project has resulted in a series of research papers, along the lines of those set out in the original proposal. These are attached to the report, and here we briefly summarise the content and main themes of each.

In “*The influence of garment exports on male-female wage inequality in Sri Lanka*”, by Jeevika Weerahewa from Sri Lanka assesses the impact of garment exports on male-female wage inequality in Sri Lanka. A general equilibrium model is used treating female and male labour as specific factors of production in the garment sector and the rest of the economy respectively. Returns to specific factors are assessed under two scenarios: lower world garment prices and higher tariffs on textiles. The model is calibrated to data on the Sri Lankan economy for 2000. Results show that the wage gap is wider if there is a lower price for garments and a higher tariff for textiles.

“*Decomposition of poverty in Sri Lanka: roles of technology, trade and government transfers*” by Weerahewa assesses the roles of technology, trade and government transfers in explaining changes in poverty in Sri Lanka from 1977 to 2000. A general equilibrium model is developed for the Sri Lankan economy with two sectors, two factors and two households, assuming it is a small open economy. Again a specific factor model is used, this time treating labour as the mobile factor. Two datasets are developed for 1977 and 2000 respectively. The model is calibrated to the Sri Lankan economy for 1977 and is used to assess the impact of technological change through changes in production function parameters, world market prices, and changes in government transfers. Results suggest that increases in the world market prices of exportables and importables, that is trade, explains the decrease in absolute poverty and the increase in relative poverty in Sri Lanka between 1977 to 2000.

In *Poverty reducing or poverty inducing? A CGE based analysis of foreign capital inflows in Pakistan* Rizwana Siddiqui and A.R. Kemal assess how foreign capital inflows might impact on poverty in recipient economies. In this study they examine the impact on poverty within a CGE framework when foreign capital inflows (FKI) in terms of foreign savings increase. An existing CGE model for Pakistan is used to conduct simulations in order to assess the impact of FKI on poverty in the presence and in the absence of trade liberalisation. Many interesting results emerge from the study.

They analyse the impact of FKI in two different scenarios. First, when labour is homogenous and can move across sectors, FKI tends to reduce poverty in the presence as well as in the absence of trade liberalisation. But the poverty reduction is larger in the presence of trade liberalisation. Second, when labour is differentiated by qualification and assumed to be sector specific, in the absence of trade liberalisation a higher proportion of benefits of FKI accrue to skilled labour and poverty increases by all measures. In the presence of trade liberalisation, benefits accrue more to unskilled labour and poverty reduces by all measures. In the presence of trade liberalisation, the reduction in poverty is higher than in the previous scenario in rural as well as in urban areas.

Similar themes are explored in “*Decomposing wage inequality changes in Bangladesh: an application of double calibration techniques*” by Bazlul Khondker and Mustafa Mujeri from Bangladesh. In this paper, a double calibration general equilibrium methodology is used to decompose observed inequality in wages generated by multiple sources into components associated with each source. They follow a methodology adopted by Abrego and Whalley (2000), where departures from traditional applied general equilibrium exercises are made in two ways. First, they decompose an observed (*ex post*) economic outcome into component influences rather than compute *ex ante* counterfactual

equilibria. This recognises that these influences need not be and typically will not be additive. Second, their analysis is based on a multiple-period rather than a single-period calibration, since it requires model parameterisations to be as consistent as possible with changes over time, not just a base year observation. This is termed double calibration. They apply these techniques to a component decomposition of increased wage inequality over the period 1985 to 1996 in Bangladesh. The model and the techniques presented suggest that, within a general equilibrium setting, other factors, such as changes in factor supplies and a wider variety of technical change, also enter the picture and can play a significant role in affecting inequality.

In “*Poverty implications of trade liberalisation in Bangladesh: a General Equilibrium approach*”, Khondker and Mujeri subsequently assess the characteristics of the transmission channels for trade liberalisation policies in Bangladesh and examine their poverty implications. Although significant interactions exist among different reform measures, they concentrate on trade reforms along with welfare implications of reforms in terms of impacts on absolute and relative poverty. Their analysis contributes to a better understanding of the relationships between trade reforms and poverty in Bangladesh, a least developed country. The analysis also helps identify policy options that are capable of promoting liberalisation in a more equitable manner.

In “*Remittances, trade liberalisation, and poverty in Pakistan: the role of excluded variables in poverty change analysis*”, Rizwana Siddiqui from Pakistan assesses the impact of two shocks on poverty in Pakistan, trade liberalisation and a decline in remittances from abroad, using a CGE framework. She finds that a tariff reduction in the absence of a decline in remittances reduces poverty, as measured by the head count, poverty gap and severity ratios (FGT indicators) in both rural and urban areas of Pakistan. But in terms of welfare, all

households appear to gain. The results show that welfare gains are larger for urban households than for rural households. Also, poverty reduces by a larger percentage in urban households than in rural households. The conclusion from this is seemingly that trade liberalisation reduces the gap between urban and rural households.

In a second set of experiments, however, trade liberalisation in the presence of a decline in remittances reduces the welfare in urban households but rural households still show an increase in welfare over the base year. This welfare gain is less than the welfare gain in the presence of trade liberalisation only. Poverty increases in urban households, but not in rural households. The combined shock is more harmful to households in urban areas than to households in rural areas. Decomposition results show that poverty increases by all measures in rural and urban areas due to a decline in remittances. Aggregate statistics show that the negative impact of a remittance decline dominates the positive impact of trade liberalisation in urban areas. On the other hand, in rural areas the positive impact of trade liberalisation dominates the negative impact of a decline in remittances. The conclusion is that the decline in remittance inflows is a major contributory factor to explaining increases in poverty in Pakistan.

In "*The role of education in wage inequality change in India: 1988-97*" Basanta Pradhan from India notes that there is little modelling work in a general equilibrium framework on the impact of education on inequality though, in the growth accounting literature, there is some work on the contribution of education using the Solow growth model. There is, however, a substantial body of descriptive literature on the impact of education on economic inequality. He discusses the paradox that there has not been much change in relative poverty in India in recent decades even though the level of education changes, and tries to resolve this paradox using an applied general equilibrium model with Ricardo-Viner

trade assumptions. Two hypotheses are tested, one with the pre-existing implicit quota system for education, and the other with an open access system of competitive provision for education. It is shown that for a large and plausible range of elasticity of substitution parameters, the wage inequality remains almost constant when the proportion of skilled labour to unskilled labour to 1997 is used in the model, along with data from 1998 in the quota system of education. However with open access to education, wage inequality decreases for a range of substitution elasticities.

In another paper entitled “*Assessing the effects of trade liberalisation on inequality in India: a simulation exercise*”, Pradhan also assesses the income inequality consequences of trade liberalisation in India using numerical simulation methods based on a Computable General Equilibrium model. This has the advantage of allowing him to conduct laboratory-based counterfactual experiments in the context of a model that embraces both quantity and price effects in a general equilibrium framework, capturing a range of alternative closures and response mechanisms. The aim is to explain the consequences on different groups of households of the removal of quantitative restrictions and a reduction in tariffs on a range of products. Changes in quotas and tariffs have to be considered in the context of a general reduction in quotas and tariffs which took place in India during the 1990s. However the effects on households are likely to be conditioned by the financing rules and/or macroeconomic closures that are assumed in the experiments. For example, a reduction in tariffs implies a reduction in government revenue, and if the level of government expenditure is to be maintained then either government savings must be reduced or there has to be a replacement source of government finance. This is the nature of the experiments reported here. The SAM (and consequently the model) accommodates a disaggregation of the household sector into nine household groups (four rural and five urban) defined according to their socio-economic status.

The paper concentrates on the effects on changes in household welfare (EV) and relative incomes, as a means of assessing the relative effects of the shocks on different income groups. This is not a conventional measure of inequality but it is a means of assessing changes in the relative well-being of different household groups as the Gini coefficient tends to be insensitive. The results suggest the apparently adverse effects of trade liberalisation on self-employed agricultural households in particular.

In a paper by Maurizio Bussolo and John Whalley, “*Globalisation in developing countries: how improvements in transaction technology can affect India’s growth and poverty*” the authors suggest that almost always what characterises the poor is their isolation from the rest of the society and the economy, and thus from the potential benefits of increasing aggregate incomes. Developing countries’ economies are beleaguered by high transaction costs due not only to geography and inappropriate policies (such as high and sectorally dispersed protection measures), but also to other less obvious causes, such as infrastructure development and maintenance, and institutional arrangements. In order to assess pro-poor effects of the recent growth performance of India, they build a numerical simulation model that explicitly includes transaction costs. By using double calibration techniques, they are able to decompose and independently measure the effect on growth and relative poverty of the following factors: (a) trade policy, (b) terms of trade shocks (c) labour supply changes (d) total factor productivity and (e) transaction costs variations. Their approach shows that a large reduction in transaction costs is required to produce results consistent with observed Indian growth and poverty data.

The project has produced a range of papers which emphasise that even though there may not appear to have been major change in relative inequality following liberalisation in south Asia, excluded variables and other non-globalisation influences cloud the picture.

Also, unless the globalisation experiment is carefully specified (nature of trade instrument changed, revenue impacts and financing) different impacts on poverty can result.

3. Findings

Project activities have involved formal project meetings (some held contemporaneously with IDRC MIMAP meetings and financed by IDRC), informal short visits of project participants to Warwick, and in-country seminars on papers. Visits to countries were reduced from what had originally been planned due to health problems of the principal investigator, John Whalley. It was due to these health problems that Jeffery Round became involved as project co-manager.

4. Dissemination

Dissemination activities have focussed on project meetings, country seminars, and conference participation. The project launch meeting was held at the University of Warwick in the Centre for the Study of Globalisation and Regionalisation (CSGR) from 11-17 June 2000. All the South Asian research partners attended the meeting: Mustafa Mujeri (Bangladesh); Basanta Pradhan (India); Rizwana Siddiqui (Pakistan); and Jeevika Weerahewa (Sri Lanka). John Whalley (Project Leader), Randy Spence (IDRC/MIMAP) and Maurizio Bussolo (Warwick/OECD Development Centre) also participated.

The launch meeting was followed by a one-day meeting in the Phillipines (8 September 2000), immediately following a meeting of the MIMAP research network attended by John Whalley and four South Asian researchers.

During the period 28 April to 6 May 2001 a MIMAP Research Network meeting, financed by IDRC, took place in Singapore, and once again the opportunity was taken for a meeting of the DFID project partners.

A further MIMAP meeting in Singapore (19-23 November 2001) was attended by Bussolo, Khondker, Mujeri, Siddiqui, Weerahewa and Round from the DFID group.

At all these meetings, presentations of preliminary versions/work in progress project papers were given by partners to the wider audience of MIMAP researchers and local representatives; useful discussion and interaction ensued.

In 2002, there were further opportunities for the DFID group to meet, interact and address a wider audience on two further occasions. The first was the CSGR (Warwick) annual conference (15-17 March) and the second at a MIMAP meeting held at the University of Laval, Quebec (8-10 April).

The CSGR (Warwick) annual conference on the theme 'Globalisation, Growth and (In)equality' was attended by number of project partners, whose presentations are listed below.

Conferences and Workshops

CSGR (Warwick) Annual Conference, 15-17 March 2002: 'Globalisation, Growth and (In)equality'

Papers were presented by project partners as follows:

Maurizio **Bussolo**, 'Globalisation in developing countries: the role of transaction technology in explaining performance in India, Colombia and Korea'

Basanta **Pradhan**, Jeffery **Round** and John **Whalley**, 'The debate on globalisation: calculations showing how specificity in experiment determines conclusions'

Rizwana **Siddiqui**, 'Remittances, trade liberalization, and poverty in Pakistan: the role of excluded variables in poverty change analysis'

Jeevika **Weerahewa**, 'The roles of technology, trade and government transfers in explaining poverty in Sri Lanka'

MIMAP Research Network Meeting, University of Laval, Quebec, 8-10 April 2002

Papers were presented by project partners as follows:

Rizwana **Siddiqui** and A. R. Kemal, 'Remittances, trade liberalization and poverty in Pakistan: the Role of excluded variables in the analysis of poverty change'

Rizwana **Siddiqui** and A. R. Kemal, 'Poverty inducing or poverty reducing? a CGE-based analysis of foreign capital inflows in Pakistan'

Jeevika **Weerahewa**, 'Decomposition of poverty in Sri Lanka: roles of technology, trade and government transfers'

Jeevika **Weerahewa**, 'The influence of garment exports on male-female wage inequality in Sri Lanka'

Mustafa **Mujeri** and Bazlul **Khondker**, 'Poverty implications of trade liberalisation in Bangladesh: a General Equilibrium approach'

Mustafa **Mujeri** and Bazlul **Khondker**, 'Decomposing wage inequality in Bangladesh into trade and technology components using double calibration procedures'

Maurizio **Bussolo** and John **Whalley**, 'How many forms do I have to fill in to export my coffee? The role of transaction costs in explaining economic performance in Latin America'

Maurizio **Bussolo** and John **Whalley**, 'Globalisation in developing countries: how improvements in transaction technology can affect India's growth and poverty'

Basanta **Pradhan**, Jeffery **Round** and John **Whalley**, 'The debate on globalisation: some calculations showing how specificity in experiment determines conclusions'

Basanta **Pradhan** and John **Whalley**, 'The role of education in wage inequality change in India'

Other conference presentations:

Pradhan and **Round** presented a paper 'Assessing the Effects of Trade Liberalisation on Inequality in India: A Simulation Exercise' at the UK Agricultural Economics Association Conference at Aberystwyth, 8-10 April 2002.

Weerahewa presented her poverty paper at the conference of the Sri Lanka Agricultural Economics Association on 25 March 2002.

Visits to Warwick

Jeevika Weerahewa (Sri Lanka) made three visits to Warwick during the life of the project: 13-22 March 2001, 5-10 September 2001, and 12-18 March 2002-08-28.

Rizwana Siddiqui (Pakistan) made two visits to Warwick; 4-11 March 2001 and 11-20 March 2002.

Basanta Pradhan arrived in Warwick from India in February 2001 to take up the post of Research Associate on the project, and remained in post until the end of May 2002 (an extension of his contract for 2 months was granted). He made two visits to Delhi during his time at Warwick (12-25 August 2001 and 6-18 January 2002) where he met policymakers and academics to discuss his work at Warwick and also collected data and literature.

In-Country Seminars

In-country seminars were presented as follows:

Bangladesh	Bazlul Khondker	August 2002
India	Basanta Pradhan	12-25 August 2002; 6-18 January 2002 and November 2002 (prospective)
Pakistan	Rizwana Siddiqui	8 August 2001
Sri Lanka	Jeevika Weerahewa	11 August 2001.

Appendix

Paper titles (and authors) from the project (attached)

1. The influence of garment exports on male-female wage inequality in Sri Lanka Jeevika Weerahewa
2. Decomposition of poverty in Sri Lanka: roles of technology, trade and government transfers Jeevika Weerahewa
3. Remittances, trade liberalisation, and poverty in Pakistan: the role of excluded variables in poverty change analysis Rizwana Siddiqui and A.R. Kamal
4. Decomposing wage inequality change in Bangladesh: an application of double calibration technique Bazlul H. Khondker and Mustafa Mujeri
5. Poverty reducing or poverty inducing? a CGE based analysis of foreign capital inflows in Pakistan Rizwana Siddiqui and A.R. Kamal
- 6.. Poverty implications of trade liberalisation in Bangladesh: a general equilibrium approach Bazlul H. Khondker and Mustafa Mujeri
- 7.. The role of education in wage inequality change in India: 1988-97 Basanta K. Pradhan
8. Assessing the effects of trade liberalisation on inequality in India: a simulation exercise Basanta K. Pradhan
9. Globalisation in developing countries: how improvements in transaction technology can affect India's growth and poverty Maurizio Bussolo and John Whalley
10. Globalisation and poverty linkages: clues from South Asian experience Jeffery I. Round and John Whalley