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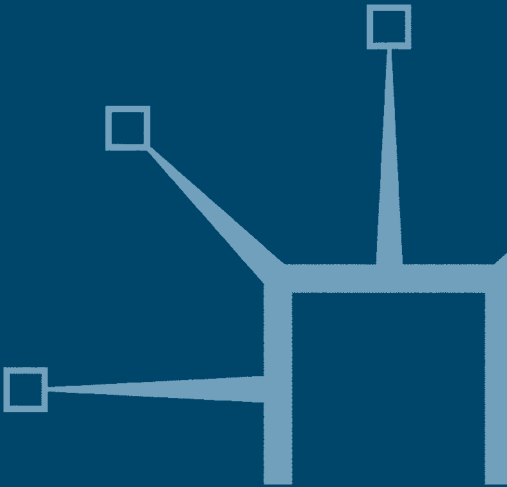
The Impact of Globalization on the World's Poor

Transmission Mechanisms

Edited by

Machiko Nissanke and Erik Thorbecke



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Transmission Mechanisms

Edited by

Machiko Nissanke

and

Erik Thorbecke

in association with

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Foreword

In recent years, ‘globalization’ and ‘poverty’ have been arguably the two most important topics in international development. Despite the enormous potential of globalization to accelerate economic growth and development through greater integration, the spread of technology and the transmission of knowledge, the level of poverty found in many parts of the developing world is still unacceptably high. Indeed, there is widespread concern that the globalization process since the 1980s may have had adverse effects on global income inequality, both between countries and within countries. In particular, some of the poor in fragile, low-income countries may have been hurt by it. So who are the likely gainers and losers from globalization?

The pro-globalization proponents see the globalization process as a giant tide that lifts all the boats, while the anti-globalization movement fears that the process is turning into a destructive tsunami that will wreck the already low standard of living of vulnerable households. Despite the passionate debate about the impact of globalization on the world’s poor, few studies have examined systematically the various transmission mechanisms through which globalization ultimately affects the poor within different specific contexts.

Building on earlier research that examined the relationship between growth, inequality and poverty, in 2004 UNU–WIDER launched a project entitled ‘The Impact of Globalization on the World’s Poor’. The project aimed to produce a set of rigorous theoretical and empirical economic studies that would improve our understanding of how the circumstances of the world’s poor have been evolving under globalization, and suggest the elements of a strategy for ‘pro-poor globalization’.

The first project meeting, held in Helsinki in October 2004, focused on the conceptual and methodological issues facing those who seek to analyse the channels and transmission mechanisms through which globalization has an impact on poverty in the developing world. This volume comprises a selection of papers presented at that first workshop.

Subsequent meetings examined the impact of globalization on the poor in three different developing regions: Asia, Africa and Latin America. The outcomes of those meetings will be published in due course.

Although globalization and poverty have cultural, social and political dimensions that are best explored within an interdisciplinary framework, the UNU–WIDER project concentrated predominantly, but not exclusively, on the economic manifestations of globalization and their effects on poverty. Hence the chapters in this book examine and address the issues from the viewpoint of development economics.

The material will be of interest to academics, policy-makers and students who are keen to improve their understanding of the impact of globalization on the poor, and of special interest to those who face the challenge of making the process of globalization more responsive to the reduction of poverty worldwide.

ANTHONY SHORROCKS
Director, UNU-WIDER

Acknowledgements

Sixteen papers were presented at the UNU–WIDER conceptual conference on ‘The Impact of Globalization on the World’s Poor’, held in Helsinki in October 2004. This volume incorporates twelve of these papers, four of which (Bardhan; Basu; Nissanke and Thorbecke; and Ravallion) also appear in a special issue of *World Development* (volume 38, number 4, August 2006, with permission from Elsevier), together with the remaining four papers (Aggarwal; Deardorff and Stern; Graff, Roland-Holst and Zilberman; and Ligon) that are not included in this volume. The papers presented at the conference were selected from over 150 applications received in response to our call for papers, on the strength of extended abstracts, the need for balance, and our aim of covering topics and aspects in the globalization–poverty nexus as diverse as possible. We are grateful to all the conference participants who contributed greatly as paper presenters, chairs and discussants. In addition to the authors of the papers included in this volume, we thank Tony Addison, Rimjhim Aggarwal, Charles Gore, Alan Deardorff, Ethan Ligon, Mark McGillivray, Tony Shorrocks, Rolph van der Hoeven, David Zilberman, and the delegation from the Finnish Ministry of Foreign Affairs.

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List of Abbreviations

ANC	African National Congress
CEECs	Central and Eastern European Countries
CGE	computable general equilibrium
Comecon	Council for Mutual Economic Assistance
CPI	consumer price index
DFID	Department for International Development (UK)
EEA	European Economic Area
EPZ	export processing zone
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FDI	foreign direct investment
GATP	Global Trade Analysis Project
GDF	Global Development Finance
GDP	gross domestic product
GEAR	growth, employment and redistribution
GEF	Global Environment Facility
GSS	General Social Survey
HDI	Human Development Index
HIPC	heavily indebted poor countries
HOSS	Heckscher–Ohlin–Samuelson–Stolper
IDS	Institute of Development Studies, University of Sussex
ILO	International Labour Organization
IMF	International Monetary Fund
LCU	Local Currency Unit
LDC	least developed country
MDG	Millennium Development Goal
MFA	Multi-Fibre Arrangement
MFN	most favoured nation
NAFTA	North American Free Trade Agreement
NBS	National Bureau of Statistics (China)
NIC	newly industrializing country
PC	principal component
PEGR	poverty equivalent growth rate
POUM	prospect of upward mobility
PPP	purchasing power parity
PTA	preferential trading arrangement
RHS	Rural Household Survey
RLMS	Russian Longitudinal Monitoring Survey
Sida	Swedish International Development Cooperation Agency

SOE	state-owned enterprise
TNC	transnational corporation
TOT	terms of trade
TRIPS	trade-related aspects of intellectual property rights
UHS	Urban Household Survey
UNEP	United Nations Environment Programme
UNU	United Nations University
WIDER	World Institute for Development Economics Research (of the UNU)
WIEGO	Women in the Informal Economy: Globalizing and Organizing
WIID	World Income Inequality Database
WTO	World Trade Organization

Part I Overview

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1

Overview

Machiko Nissanke and Erik Thorbecke

Background

Over recent decades, the world economy has experienced not only a quantitative leap in the volume and value of international trade and financial transactions, but also a qualitative transformation in the way different nation states interact with each other. National economies are increasingly linked through international markets for products and factor markets, leading to increased cross-border flows of goods, capital, labour and, through flows of information, technology and management know-how. The world economy is becoming increasingly integrated.

This process of globalization is one of the most critical developments affecting the evolution of national economies. Globalization offers participating countries new opportunities to accelerate growth and development but, at the same time, it also poses challenges to, and imposes constraints on, policy-makers in the management of national, regional and global economic systems. While the opportunities offered by globalization can be great, a question is often raised as to whether the distribution of gains is fair and, in particular, whether the poor benefit proportionately less from globalization – and might under some circumstances in fact be damaged by it. The risks and costs brought about by globalization can be significant for fragile developing economies and the world's poor.

The downside of globalization is most vividly epitomized at times of periodical global financial and economic crises. The costs of the repeated crises associated with economic and financial globalization appear to have been borne overwhelmingly by the developing world, and often disproportionately so by the poor, who are the most vulnerable. On the other hand, benefits from globalization in booming times are not necessarily shared widely and equally across the global community.

The fear that the poor have been by-passed or even harmed by globalization has been highlighted by findings from a number of recent studies which examined explicitly the extent of, and changes in, inequality of world income distribution as it evolved during the heyday of the globalization era. Many of these studies point towards a continuing high inequality in world income distribution, and limited, if not a total lack of, convergence among participating national economies and across regions. The progress on poverty reduction has also been uneven. The share of the population of developing countries living on less than US$1 per day declined from 40 per cent to 21 per cent between 1981 and 2001, but this was achieved mainly by a substantial reduction of the number of poor people in Asia, in particular in China (Chen and Ravallion, 2004). Furthermore, the total number of people living on less than US$2 per day in fact increased worldwide. In particular, poverty has increased significantly in Africa in terms of poverty incidence as well as the depth of poverty.[1]

Though any trend in poverty and income inequality observed so far cannot be attributed exclusively or even mainly to the globalization effect as such without rigorous analyses, these various estimates, even the most optimistic ones, cannot dismiss the concerns raised that the globalization process, as it has proceeded so far, may have had at least some adverse effects on poverty and income distribution.[2] These concerns have generated a passionate debate worldwide as well as a powerful anti-globalization movement. While some of the critics are clearly against globalization in the sense of advocating a protectionist, autarkic and nationalist course of 'de-globalization', others advance and promote alternative policies towards a more global world.

The extent of controversy surrounding this debate reflects the fact that globalization is not a process proceeding neutrally in a policy vacuum, but rather a policy-induced condition.[3] Globalization is not driven purely by technological innovation and progress, or by 'neutral' market forces and other inescapable sociopolitical forces, as is often depicted in popular writings.[4] In particular, the contemporary phase of globalization is to a certain extent an outcome emerging from the global consolidation and diffusion of the economic policy paradigm, which emphasizes benefits and positive features of the liberalized policy regime. In this paradigm, trade and financial liberalization are seen – along with other market-based institutional reforms such as privatization, legal and other regulatory systems – as the sine qua non of a successful integration into a globalizing world economy. This kind of position with a particular ideological stance might be questioned in the context of the fiercely contested debate on the appropriate roles of markets versus states. Indeed, in this regard, the recent discussion over the effects of globalization on poverty mirrors very much the earlier controversy over the appropriateness of structural adjustment programmes as a development strategy for low-income countries, and the poor in particular.

Cornia (2004) argues, for example, that growing polarization among countries has been accompanied by a surge in inequality within most nations, where growth and poverty alleviation have suffered substantially. He suggests that the rising trend in inequality within countries in recent decades cannot be explained by the 'traditional causes of inequality' (those responsible for income inequality during the 1950–70s), which include high concentration of land and other assets, dominance of natural resources and associated rents, unequal access to education, and urban bias. While noting that these traditional conditions remain important factors for cross-country differences in inequality, Cornia argues that the increased global inequality in recent decades is attributable more directly to contemporary globalization effects – for example, the nature of technological changes and policy reform measures, such as frequent application of deflation policy under stabilization-cum-adjustment; trade liberalization; the rise of financial rents following financial liberalization and privatization; changes in labour institutions; and erosion of the redistributive role of the state.[5]

However, despite the utmost importance of understanding the globalization–poverty nexus, the precise nature of various mechanisms, whereby the ongoing process of globalization has altered the pattern of income distribution and the conditions facing the world's poor, is yet to be analysed carefully. This is because the globalization–poverty relationship is complex and heterogeneous, involving multifaceted channels. It is highly probable that globalization–poverty relationships may be non-linear in many aspects, involving several thresholds effects.

While a number of studies have been conducted to investigate globalization–poverty relationships through cross-country regressions, a deeper insight into this critical nexus cannot be obtained by regression studies alone, as it requires detailed empirical research in a country- and region-specific context.[6] Cross-country studies require precise measurements and a definition of the two key concepts – globalization and poverty, and have been criticized on technical (econometric) grounds. Both concepts are multi-dimensional, and not easily captured in a composite index to be used in a meaningful manner in cross-country comparative studies.

Building on earlier research projects, UNU–WIDER launched a project named 'The Impact of Globalization on the World's Poor', in 2004. The project aims to produce a set of rigorous theoretical and empirical economic analyses, which could allow us to: (i) deepen our understanding of how conditions facing the world's poor have been evolving under globalization; and (ii) provide a framework yielding the elements of a strategy for 'pro-poor globalization'.

It needs to be recognized at the outset that the two critical concepts dealt in this proposed volume – globalization and poverty – are multi-dimensional and complex, and hence could be analysed in an interdisciplinary context. Our aim in this volume is not to provide a fully comprehensive and multi-disciplinary treatment of the impact of globalization on poverty, but rather to focus on the predominantly economic manifestations of globalization. The main channels through which the forces of globalization affect poverty that are highlighted in the book are related either directly or indirectly to economic factors such as the opening of trade and capital movements, the international migration of labour, and the transfer of technology and information across borders. It would have been overly ambitious to have additionally taken on board the effects on poverty of all other (non-economic) dimensions of globalization – cultural, social and political – and, in all probability, would have resulted in an overly superficial and simplistic treatment of the issue. All the chapters in this book examine and address the issue at hand from the viewpoint of development economics.

The first conference for the project, held in Helsinki in October 2004, focused on conceptual and methodological issues with a view to discerning channels and transmission mechanisms through which the process of globalization affects different aspects and dimensions of poverty in the developing world. These transmission mechanisms are identified and explored in detail in Chapter 2 by Nissanke and Thorbecke. This chapter provided the necessary guidelines and operated as a kind of 'navigation table' for the contributing authors. The first and most important of these mechanisms is the growth–inequality–poverty channel. Other channels in the globalization–poverty nexus operate, respectively, through changes in relative factor and goods prices, factor movements, the nature of technological change and diffusion, the impact of globalization on volatility and vulnerability, the worldwide flow of information, global disinflation, and institutions. This volume is a collection of many studies presented at that first conference.[7] As an introduction and a guide to the subsequent chapters in this volume, this chapter provides a narrative of our quest to examine how the numerous channels interact, as the net effects on poverty depend on the relative strength of the positive and negative forces of globalization. Chapter 2 purposely refrains from defining globalization in too narrow a set of terms, to allow the authors of the subsequent chapters to explore different dimensions and manifestations of globalization without restriction.

This overview chapter is structured as follows: in the next section we discuss various relationships embedded in the openness–growth–inequality–poverty nexus by summarizing the views regarding the physiology of the causal chain in this nexus. After that is a summary of the analyses by the authors of how globalization affects poverty through the various other channels listed above, including institutions, technology and vulnerability. In the concluding section, some preliminary thoughts are presented which aimed at formulating a set of measures to make globalization 'pro-poor'.

The openness–growth–inequality–poverty nexus and channel

In Chapter 2, Nissanke and Thorbecke examine the 'growth' channel by scrutinizing the causal chain of openness–growth–inequality–poverty link by link. Openness through trade and financial liberalization increases the flow of goods and capital across national borders and can contribute significantly to economic growth (the openness–growth link). However, the direction of causality in this link is still being debated, as well as how trade and capital flows may be linked into a virtuous circle. Furthermore, the positive openness–growth link is neither automatically guaranteed nor universally observable.

While it is most likely that the poor will benefit from growth, the ultimate poverty reduction effects will depend on how the growth pattern affects income distribution. Inequality is the major filter between growth and poverty reduction. If growth leads to an increase in income inequality, the poor may benefit only slightly or, in some cases, in fact be harmed by the globalization process. Indeed, the growth–inequality link is much more complicated than postulated in the classical approach, with its emphasis on the growth-enhancing effects of inequality. There are many consequences of and phenomena linked to inequality that could, at least potentially, reduce future growth and hence future poverty alleviation, such as the diffusion of social and political instability that could have a negative impact on investment as a result of greater uncertainty.

We argue specifically that the *pattern* of economic growth and development, rather than the rate of growth *per se*, may have significant effects on a country's income distribution and poverty profile. Indeed, the recent debate on the meaning of 'pro-poor growth' is related to the complex triangular relationships among poverty, growth and inequality. Clearly, poverty reduction would require some combination of higher growth and a more pro-poor distribution of the gains from growth. Hence what is relevant for poverty reduction is a 'distribution-corrected' rate of growth, as Ravallion (2004) notes, and in our view growth is considered pro-poor if, in addition to reducing poverty, it also decreases inequality.

Heshmati (Chapter 3) takes a rather different, aggregate approach to assessing the impact of globalization on poverty. He first computes two composite indices of globalization; the Kearney index and his own index obtained from principal component analysis, to measure the extent of globalization for sixty-two countries. In order to investigate the very diverse aspects of globalization, the indices are made up of four components – economic integration, personal contact, technology and political engagement – each generated from a number of indicators. These indices are developed to indicate the level of globalization and show how globalization has evolved over time in different countries. He suggests that a breakdown of the globalization index into major components provides possibilities of identifying the sources of globalization at the country level, and associating it with economic policy measures. The indices are also used in a regression analysis to study the causal relationships between income inequality, poverty and globalization.

Heshmati finds a weak and negative correlation between globalization and income inequality and poverty, as very little of the variance in inequality and poverty outcomes can be explained by globalization operating through these four channels. Rather, his results show that the regional variable plays an important role in the explanation of a variation in inequality and poverty, which makes the globalization coefficient insignificant. This suggests that regional characteristics play a dominant role in how poverty and inequality are affected by the four globalization components mentioned above. His results generally confirm that initial endowments, and the degree and nature of integration into the international economy, largely determine the distributional effects of globalization.

The importance of regional variations in understanding the globalization–inequality–poverty nexus is further taken up by Kalwij and Verschoor (Chapter 4). They examine the impact of globalization on poverty, focusing on the responsiveness of poverty to aggregate changes in income distribution. For this purpose, they decompose poverty trends into an income effect and an a distribution effect over the period 1980–98, under the assumption of a log-normal income distribution for six major developing regions: East Asia; Eastern Europe and Central Asia; Central and Latin America; the Middle East and North Africa; South Asia; and sub-Saharan Africa. Their estimates of income and inequality elasticities of poverty vary considerably across regions. For example, for 1990, they find an income elasticity of poverty equal to −1.06, on average, for six regions, but ranging from −0.47 for South Asia to −4.21 for Eastern Europe and Central Asia.[8] Similarly, their Gini elasticity of poverty amounts to 0.21, on average, but ranges from −0.06 in South Asia to 2.94 in Eastern Europe and Central Asia.

Referring to their calculated region-specific elasticities, they suggest that income changes account for most of the variation in poverty trends across regions and over time, and that the impact of changes in inequality is relatively small, except in Eastern Europe and Central Asia. The impact of changes in the income and inequality elasticities of poverty over time is also relatively small, again except in Eastern Europe and Central Asia. However, on the basis of region-specific analysis, they challenge the dominant mainstream view that globalization is good for the poor by generating approximately distribution-neutral income growth, as argued by Collier and Dollar (2001). They reaffirm instead the position emphasized by Ravallion (1997) and Bourguignon (2003: 3–26), that inequality, in particular initial income distribution, has an important indirect effect on poverty through diminishing prospects for pro-poor growth.

Ravallion (Chapter 5) examines more specifically the relationship between trade openness and poverty, using three different lenses and techniques: (i) a macro aggregate cross-country regression of the impact of trade on poverty; (ii) a macro time series analysis of China; and (iii) a micro lens based on a computable general equilibrium model scrutinizing, respectively, the impacts on households of WTO accession in China and cereal de-protection in Morocco. Both the macro and micro approaches cast doubt on some widely heard generalizations from both sides of the globalization debate. In particular, he points to the inadequacy of the conventional 'macro lens' for revealing strong and robust trade–poverty relationships. Ravallion also shows that the link between trade liberalization and poverty is tenuous, and that it is difficult to ascertain that trade openness is a powerful force for poverty reduction in developing countries. However, the tenuous nature of the trade–poverty relationship cannot necessarily be generalized to all cases. The data presented are more suggestive of diverse (and noisy) impacts of trade openness on poverty. Under a set of specific conditions, trade opening could clearly be very effective in alleviating poverty.

A valuable lesson from Ravallion's study is the crucial importance of the pattern of growth (the sectoral composition of growth) on the extent of poverty reduction. At early development stages the growth of the primary (agricultural) sector has a far greater impact on poverty than either the growth of the secondary or tertiary sectors. For example, he shows that the bulk of the poverty reduction in China occurred during the phase of agricultural decollectivization and increases in food price procurement rather than in the subsequent trade-opening phase. His micro studies also indicate considerable heterogeneity in the welfare impacts of trade openness, with both gainers and losers among the poor. A number of covariates of the individual gains are identified. His results point to the importance of combining trade reforms with well-designed social protection policies.

Bardhan (Chapter 6) also emphasizes the complex and context-dependent nature of openness–poverty relationships by examining the various processes through which openness to foreign trade and long-term capital movements affect the lives of the rural poor. Greater international integration operates on the rural poor through four causal mechanisms in their capacity as: (i) workers; (ii) consumers; (iii) recipients of public services; and (iv) users of common resources. As workers, the rural poor are mainly either self-employed or wage earners. The self-employed tend to work on their small (often subsistence) farms, or as artisans and petty entrepreneurs in what amounts to the rural informal sector. The constraints they face are in credit, marketing and insurance, and infrastructure. Bardhan argues that opening up the product markets internationally without doing anything about the weak and distorted factor markets or poor infrastructural services may be a suboptimal policy for the poor. Furthermore, protectionism in the industrialized world and subsidization of farm and food products restricts export prospects severely for poor countries. At the same time, as producers, the poor could benefit from the international diffusion of technology, as observed in the Green Revolution which led to large reduction in poverty in Asia.

Whether the poor, as consumers, in fact gain or lose from openness depends on whether or not they are net buyers of tradeable goods (such as rice) and the extent to which the retail market structure is monopolistically blocking the pass-through from border prices to domestic prices. As recipients of public services, globalization can affect the poor in two ways; first, through budget cuts mandated by international agencies to reduce budget deficits and achieve macroeconomic stabilization, and second, through falls in tariff revenues following trade liberalization. Governments often find it politically more expedient to cut public expenditure for the voiceless poor. Bardhan argues that it is easy to blame the globalization process for domestic institutional failures that could, at least partially, be remedied through an attack on corruption and an insistence on greater accountability of domestic institutions.

In their capacity as users of common property resources, the rural poor have the potential to be harmed if trade liberalization encourages over-exploitation (such as massive deforestation) of fragile environmental resources. Bardhan observes that it may be difficult and even counter-productive for a country to adopt environmental regulations if its competitors do not adopt them at the same time and the latter are thereby able to undercut the former in world markets. The policy recommendation that suggests itself is a greater co-ordination of environmental regulations on an international scale.

Similarly, many small farmers are heavily dependent on multi-national marketing chains to establish a foothold in global markets, as these products require new storage and transport infrastructure, large set-up costs and marketing connections. In such a circumstances, what is required to protect the poor are new legal rules and institutional structures that can facilitate contract farming and agro-processing in a way that does not expose small producers to exploitation by large marketing chains. Bardhan calls for more energetic international attempts to certify codes against international restrictive business practices and to establish an international anti-trust investigation agency, possibly under the auspices of the WTO. More generally, he argues for proactive public programmes to help poor farmers to adjust and co-ordinate, and suggests that international agencies preaching the benefits of free trade have an obligation to contribute to such programmes with financial, organizational and technical assistance.

Jenkins (Chapter 7) focuses his analysis on the impact of the integration of the global economy (rather than on trade policies as such) on the poor in their role as producers. His central question about the impact of globalization on employment and income opportunities for poor people is addressed through case studies of three value chains (horticulture, garments and textiles) in four countries – Bangladesh, Kenya, South Africa and Vietnam. In the context of analysing the comparative performance among case study countries, he proposes to make a clear conceptual distinction between ‘non-globalizer’ and ‘unsuccessful globalizer’, and he categorizes Kenya as a unsuccessful globalizer, while Vietnam is successful in integrating in terms of *outcome* though remaining relatively closed in terms of *policy*. Further, the impact of increased exports on employment has been much more significant in Bangladesh and Vietnam, where unskilled-labour-intensive industries accounted for 90 per cent and 60 per cent of manufactured exports in the late 1990s, respectively, than in Kenya and South Africa, where the corresponding figures were 16 per cent and 10 per cent, respectively. In these two African countries, skilled workers (as proxied by education levels) benefited from globalization, while unskilled workers were affected adversely.

In presenting the case studies, Jenkins first emphasizes, as do all the other contributors, that the outcomes of globalization processes are highly context-specific, dependent both on the institutional framework and government policies that mediate global processes. Several patterns emerge, none the less, from his four case studies of global value chains. For example, the growth of labour-intensive exports of manufactures and agricultural products does create employment opportunities, particularly for low-income women and migrants from rural areas, as horticulture exports in Kenya or garment exports in Bangladesh and Vietnam reveal. However, the requirements of global value chains mean that these jobs often demand a high degree of labour flexibility, long hours of work and poor working conditions, making workers vulnerable both in terms of security of employment and income. Opening up to global competition has also led to job losses and deterioration in working conditions and employment conditions, as the case of textile industries in South Africa illustrates.

Further, Jenkins shows how gains from globalization are likely to be more widely distributed where the initial structure of assets and entitlements is more equitable, as in Vietnam. In the latter, a strategy of building linkages between the export sector and domestic production has been more effective in creating employment and reducing poverty than has trade liberalization. On the whole, Jenkins concludes that, even in those cases that have been successful in developing labour-intensive exports, the overall impact of globalization on poverty has been relatively small. The majority of the poor are not engaged in global production, and other strategies are required to reach them. Clearly, integration with the global economy is not a substitute for an anti-poverty strategy.

Other channels in the globalization–poverty relationship

How these other channels work

Nissanke and Thorbecke (Chapter 2) suggest that, in addition to the growth conduit, there are other major channels through which globalization affects poverty. They include *technology* (the nature of technological progress and the technological diffusion process); *factor mobility* and more particularly the pattern of labour migration brought about by the process of globalization; *vulnerability* (increasing world integration and openness tends to be associated with greater volatility and vulnerability of poor households to economic and financial shocks); and *the flow of information* and *institutions* in both developed and developing countries that mediate the effects of the above channels on the poor. These channels may be largely responsible for explaining why the poor have not emerged as larger beneficiaries of contemporary globalization. According to the theoretical prediction embedded in the Stolper–Samuelson theorem, developing countries well endowed with unskilled labour should experience a decline in income inequality through an increased demand for unskilled labour, while unskilled labour in developed countries would lose out, with an adverse effect on equity. However, empirical evidence reveals that wage gaps between skilled and unskilled labour have been increasing in many developing countries, particularly in Latin America and Africa.

Several specific features associated with the current phase of globalization explain why the theoretical prediction does not hold. For example, the nature of technical progress and new technology is biased heavily in favour of skilled and educated labour, as technical change emanates from research and development (R&D) activities in the developed (industrialized) countries in response to local conditions (Culpeper, 2002). Hence technical change tends to be labour-saving and skill-biased, and new technology is complementary to capital and skilled labour, while being a substitute for unskilled labour, so technical change tends to increase inequalities in both developed and developing countries. Furthermore, technological diffusion and access to new technology is not universal and spontaneous, while intensified privatization of research – for example, in bio-technology – may have adverse effects on access by developing countries and the poor to new technology. The resulting widened productivity differences explain cross-country wage/income inequality.

'Perverse' factor movements could provide another explanation. Capital and skilled labour do not migrate to poor countries as much as they do among developed countries. Rather, there is a tendency for skilled labour to migrate from developing countries to developed countries, while unskilled labour migration tends to be strictly controlled. With capital market liberalization, there is a propensity for capital flight to developed countries, particularly during periods of instability and crisis. Thus, Culpeper (2002) concludes that, with such perverse movements, as globalization proceeds, developed countries would see inequality fall while developing countries would experience rising inequality.

Furthermore, the differentiated degree of cross-border factor mobility (skilled labour and capital versus unskilled labour and land) affects the functional income distribution between labour and capital against the former. Wage equalization does not take place through labour migration, as was the case in the previous globalization era. Some workers are losing out as de facto labour mobility takes place through the increasingly free cross-border capital mobility and TNCs' ability to relocate production sites in response to changes in relative labour costs. In fear of driving away TNCs, governments of developing countries are less likely to enact regulations to protect and enhance labour rights (Basu, 2003). Generally, the poor and unskilled are affected most adversely by asymmetries in market power and access to information, technology, marketing and TNCs' activities, and the dominance of TNCs in the commodity and value chain.

Greater openness tends to be associated with greater volatility and economic shocks, and poor households tend to be more vulnerable to these shocks. The process of global disinflation while, on the one hand, helping the poor by containing price increases, might have taken place at the possible cost of slower growth and fiscal retrenchment, thereby reducing the ability of nation-states to provide adequate safety nets to those affected adversely by recurrent global financial and economic crises. Globalization has contributed to the enormous increase in the flow of information and knowledge worldwide. Internet technology and the spread of mass media transmit the most up-to-date information almost instantaneously. At the same time, increased global flows of information can result in changing reference norms and increased frustration with relative income differences, and could increase volatility and insecurity for many cohorts. Finally, institutions act as a filter, intensifying or hindering the positive and negative pass-through between globalization and poverty, and can help to explain the diversity, heterogeneity and non-linearity of outcomes. Several of these channels are further explored in detail by different UNU–WIDER conference authors.

Technology channel

Zhao (Chapter 8) focuses on the diffusion process by which new technologies are introduced in developing countries[9]. He emphasizes that technology adoption and *diffusion* is a critical factor determining whether developing countries can truly benefit from new technologies through the globalization process. Even if a new technology can potentially increase the income level of rural farmers, it may not be adopted by all, and its diffusion may be slow as a result of adoption sunk costs and uncertainties about net payoffs of the technology in question. The lack of capital, credit and risk-sharing possibilities, as well as the limited access to information about new technologies, would hinder technology adoption and diffusion. Adoption of new technologies can be hindered by uncertainties about their efficiency. For example, without independent external information sources, farmers in developing countries have to rely heavily on their neighbours or 'leaders' (those who have adopted technologies) to obtain vital information about new technologies. Hence, by constructing an adoption model, Zhao studies the role of information exchange between early and late adopters of a new technology, and about each others' likelihood of adoption. Based on his analysis, his study discusses ways of promoting adoption, including initial information provision, timing communication about the technology and about each farmer, and compensating early adopters for their information services.

Vulnerability channel

Montalbano, Federici, Triulzi and Pietrobelli (Chapter 9) take up the issue of increased *vulnerability*, resulting from trade liberalization, as experienced by countries in Central and Eastern Europe (CEECs) since the early 1990s.[10] Focusing on macro vulnerability, their analysis shows that the extremely high volatility of consumption observed in this region is strongly related to trade shocks, the high volatility of trade openness, and terms of trade. Hence they suggest that trade liberalization, as implemented in the 1990s, might have in fact worsened growth and welfare performance in Eastern Europe. They also found that the per capita income of the poorest quintile of the population is most vulnerable to these trade shocks. On the basis of their empirical evidence, they argue for the need to adopt, in the case of emerging and transition countries, forward-looking national policies to support their process of trade liberalization, policies both to mitigate the impact of trade shocks and to enhance the coping mechanisms. They also call for improvement in the governance of the globalization process by establishing a new 'culture of prevention' and designing mechanisms to limit the size and frequency of shocks at the international level.

Information diffusion channel

Graham (Chapter 10) notes the increased insecurity and vulnerability in the process of globalization with reference to one of the newer branches of economics, namely the economics of happiness. She observes that there are noticeable differences between standard money metric measures of poverty and inequality in assessing the effects of globalization and people's subjective assessment of some of the consequences of globalization. She explores how the economics of happiness can help to explain the discrepancies between economists' assessments of the benefits of globalization for the poor and individuals' real and perceived welfare outcomes, such as vulnerability to falling into poverty among the near-poor, distributional shifts at the local, cohort, and sector level; and changes in the provision and distribution of public services, among others. She suggests that the latter trends play a major role in determining public perceptions about the benefits and fairness of the globalization process.

Using the survey results on wellbeing or happiness in Peru and Russia, Graham attempts to draw a broader picture of the dynamics of poverty and inequality in the process of integration in the global economy – in particular, how the poor and the near-poor in developing economies fare during the process of globalization. Her analysis is very much focused on income mobility and on reported wellbeing as a way of gauging movements in and out of poverty, and distributive trends across time and across cohorts within countries.

She argues that while globalization is a major engine for growth in aggregate, globalization either introduces or exacerbates other trends that affect people's wellbeing as much if not more than income – for example, through the increasing flow of information about the living standards of others, both within and beyond country borders. This flow of information can result in changing reference norms and increased frustration with relative income differences, even among respondents whose own income is rising. Her analysis also illustrates how globalization can bring about increased volatility and insecurity for many cohorts, particularly those that are not well positioned to take advantage of the opportunities created by the opening of trade and capital flows. She argues that this insecurity, and the very real threat of falling into poverty for the near-poor and lower middle classes, contributes to negative perceptions of the globalization process, particularly in countries where social insurance systems are weak, or where existing systems are eroding. Graham concludes that many social and collective measures should be in place for globalization to have positive effects on poverty. These include measures such as public investments in health; institutions that can ensure adherence to basic norms of equity and fairness; and collective investments in social insurance to protect workers from the volatility that often accompanies integration into global markets. In the absence of these measures, she warns that globalization will only create opportunities for those who are best positioned to take advantage of them, leaving behind large sectors of poor and vulnerable individuals.

Institutions as a channel

Institutions mediate the various channels and mechanisms through which the globalization process affects poverty. Sindzingre (Chapter 11) suggests that institutions act as a filter; intensifying or hindering the positive and negative pass-through between globalization and poverty, and can help to explain the diversity, heterogeneity and non-linearity of outcomes. For example, on the one hand, the impact of globalization on the poor is mediated by domestic political economy structures and institutions such as social polarization, oligarchic structures and predatory regimes, which may bias, confiscate or nullify the gains from globalization for particular groups of the poor. On the other hand, the positive effects of globalization on growth and poverty can be found when institutional conditions are characterized by such features as political participation, social cohesion and management of social conflict that arises directly from globalization effects.

In particular, Sindzingre distinguishes two causal processes in the globalization–poverty relationship. The first is the impact of globalization on institutions. Globalization can induce institutional change, which in turn may have positive or negative effects on poverty reduction. However, the pace of change can be very different among institutions. For example, globalization as a set of flows and policies is more likely to induce transformation of the aspects of institutions that are already experiencing rapid change (formal political or economic rules, for example) and less likely transform slow-changing institutions such as social institutions. The second causal process is the impact of institutions on globalization. Globalization is filtered (intensified or hindered) by institutions at both country and micro levels (villages and households).

Sindzingre argues that institutions generate threshold effects because of their composite nature: institutions are indeed made of distinct components – form and content (functions or mental models, for example) – that evolve differently over time. Further, forms do not correspond to unique contents and functions, and growth results from contingent combinations of policies, structures (economic and geographic endowments) and institutions. Under certain conditions where these various components interact in a particular combination, institutions may generate processes of cumulative causation and self-sustained poverty traps.

Paths towards pro-poor globalization

It should be clear from the above discussion that the globalization–poverty relationship is complex and heterogeneous, involving multi-faceted channels. Hence, it is understandable why the globalization debates tend to raise many emotive issues. As Bardhan (Chapter 6) notes, however, these debates often involve a clash of counter-factuals. For those against the ongoing process of globalization:

> [a] counterfactual is the world of more social justice and less dominant trading and investment companies, which gives some more breathing space to the poor producers and workers. On the other side the counterfactual for pro-globalizers is the case when there is no (or limited) trade or foreign investment, a world which may be worse for the poor (as it is in the extreme cases of the closed economies of North Korea and Burma). The way out of this clash of counterfactuals is to insist that there are policies that may attempt to help the poor without necessarily undermining the forces of globalization.

Hence he holds the view that the distributional issue raised in the debate is not an argument against globalization (open trade and investment regimes) *per se* but for pro-active public programmes to protect the poor.

Indeed, not integrating into the global economy is not a viable or attractive development option for any nation. As noted in Deardorff and Stern (2006), countries that do not participate actively in trade liberalization are more likely to lose out. They explore the impact of globalization on countries excluded from the process of globalization – for example, those that have chosen (or in some cases were forced to choose) to remain relatively closed off from world markets. They use an analysis of the offer curve and a political economy model to examine the effect on countries that fail to participate in multi-lateral trade negotiations or preferential trading arrangements but nevertheless are engaged to some extent in international trade. They show that the outsiders are likely to be harmed, through the terms of trade effects, by multilateral MFN tariff reductions as well as preferential trading arrangements (PTAs) between insiders. In their analysis, it is the exclusion of some sectors and/or some exporting countries from the benefits of tariff cuts that creates a bias against non-participating and excluded countries. The best cure for these excluded nations is to become active participants in world markets, and the world economy in general. While there is no guarantee that the welfare gains of joining the world economy would contribute to a reduction in the large-scale poverty that reigns in those countries, and particularly in Africa, their analysis suggest that it is likely to have a welfare-increasing effect by stimulating economic growth for previously excluded countries.

However, as noted in Nissanke and Thorbecke (Chapter 2), the mere adoption of open trade and investment regimes does not guarantee developing countries' entry into the 'income convergence club'. Hence policies of *strategic integration* are called for, as the effects of international trade and investment on growth are critically dependent on the pattern of specialization and integration. Whether global market forces establish a virtuous circle or vicious circle depend on the initial conditions at the time of exposure, and the effective design and implementation of policies to manage the integration process.

Hence, in our view, a strategic position towards globalization cannot be equated with a simple fine-tuning of the pace and sequence of liberalization measures. It requires a long-term vision for upgrading a country's comparative advantages towards high-value-added activities by climbing the technology ladder step-by-step through learning and adaptation. In particular, national policies should be strategically designed in the light of the skewed nature of the ongoing process of globalization such as the nature of technical progress that favours high-skill and knowledge-intensive activities, and the uneven distribution of market power caused by TNCs, resulting in a hugely skewed distribution of gains from globalization. The positive benefits from globalization are neither automatic nor guaranteed, and passive liberalization would risk perpetual marginalization.

There is also a need for policy aiming at structural transformation in relation to various transmission mechanisms discussed in the study, in particular on the grounds that there are critical thresholds to realise positive effects of globalization on poverty reduction. The non-linear Laffer-type relationship between globalization and poverty, noted by both Milanovic (2002), and Agénor (2003), shows that openness helps those with basic and higher education, but reduces the income share of those with no education, and it is only when basic education becomes the norm, even for the poor, that openness exerts an income-equalizing effect. Thus, at low-income levels, openness appears to affect equality negatively, while at medium- and high-income levels it promotes equality. Sizeable public investment in skill upgrading, as a specific pro-poor measure, is a key to ensuring positive benefits from globalization. At the same time, those countries that have not yet reached the critical threshold, need (i) to invest in agriculture in order to reach the take-off-point to allow the structural transformation of their economies to proceed; and (ii) to strengthen institutions of social protection.

Our review also raises the issue as to whether the present form of globalization/integration is conducive to a process of growth-cum-structural-transformation, which is capable of engendering and sustaining *pro-poor* economic growth and favourable distributional consequences. Various project studies suggest that globalization indeed produces adverse distributional consequences at both national and global levels that could slow down or even reverse the present poverty alleviation trend. Hence globalization should not be viewed as a reliable substitute for a domestic development strategy. Designing an active development strategy should be based on a better understanding of the key issue: which structure and pattern of growth contributes most to the alleviation of poverty.

However, it is clear that, to address the distributional consequences of globalization, a set of much more effective redistributional instruments at both national and global levels is required. At the limit, this would call for exploring alternative, more equitable forms and processes of globalization initially. However, identifying such new forms would require a much better grasp of the concept of 'pro-poor globalization' than there is at present.

For advancing our understanding of what pro-poor globalization might entail, Basu (Chapter 12) focuses his analysis more on the process of marginalization resulting from globalization. He argues that the openness channel is likely to result in international prices of goods and services somewhere between prices in industrialized nations and those in developing countries, but closer to the former. Since (i) labour is less mobile across borders than goods and services; and (ii) the nature of technological progress favours capital- and skill-intensive innovations, it seems reasonable to expect, for sections of the labour force in poor nations – and in particular the illiterate and unskilled who are unable to take advantage of the new technology, that wages will lag behind prices. Hence, some of the poorest people may be subjected to a period of hardship before the benefits of opening-up trickles down to them.

Basu is concerned that the emphasis on maximizing per capita income in an era of fast globalization might not place sufficient weight on poverty and inequality reduction. Instead, he proposes that the normative criterion that should be adopted in evaluating a country's wellbeing is that of the per capita income of the lowest quintile of the population. Such a measure would combine reducing poverty and inequality. He proceeds to build a simple model showing that the adoption of the 'bottom quintile income criterion' in addition to leading to a pro-poor growth pattern would alleviate the erosion of each national government's power to follow an equity-conscious policy – an outcome that obtains under the alternative case where income maximization is assumed to prevail.

On the basis of his welfare analysis, Basu proceeds to suggest a radical distribution policy whereby workers in all firms as well as currently unemployed labourers be given a fraction of equity earnings from all firms. He envisages that, in today's globalizing world, such an equity scheme could be extended to that of inter-country transfers. He suggests that developing rules for some inter-country transfer of equity income would ensure that the functional income distribution between capital and labour (especially unskilled labour) would not become too uneven. In order to escape from what amounts to a Prisoner's Dilemma situation, Basu also argues for the creation of a new international organization to help to co-ordinate inter-country anti-poverty policies.

As Bardhan (Chapter 6) notes, globalization should not be allowed to be used, either by its critics or by its proponents, as an excuse for inaction on the domestic or the international front. What is *at minimum* called for is therefore liberalization to be accompanied by a comprehensive policy package for enhancing the capability of the poor and instituting a safety net for people who lose out in the process. However, for making globalization more inclusive and truly pro-poor, we should probably go beyond this minimalist approach. We should start by giving some serious consideration to more radical distributional measures such as those proposed by Basu above. We should also engage earnestly in a fresh debate on developing new governance structures for international trade and investment regimes, so that the enormous benefits that globalization promises to generate through transfer of knowledge, technology and financial resources could be shared more equitably by the world's poor.[11]

Notes

1. See Wade (2002) and Deaton (2001, 2002) for critical discussions of the World Bank's estimates of global poverty and inequality used in these studies.
2. See also Culpeper (2002) for a recent critical literature review of the effect of globalization on inequality, where a set of triangular relationships between globalization, growth and inequality is discussed systematically.
3. See Kozul-Wright and Rayment (2004) for an extensive discussion on this policy-induced condition.
4. Helleiner (2001) emphasizes the need to distinguish two different phenomena associated with the term 'globalization'. While the first is referred to as the

shrinkage in space and in time that the world has experienced as a consequence of technological revolutions in transport, communications and information processing, the second usage points to policy choices and external liberalization involving political, economic and social choices. As Helleiner notes, despite this clear distinction, the recent association of external liberalization *policies* with the technology-driven *fact* of globalization has contributed to the terminological confusion.

5. See Culpeper (2002) for further discussion of the effect of economic liberalization policies on income distribution and the poor.
6. See Reimer (2002) for a literature survey of the poverty impacts of trade liberalization in developing countries. In his survey, he classifies empirical studies into four methodological categories: cross-country regression, partial-equilibrium/cost of living analysis, general equilibrium simulation, and micro-macro synthesis.
7. In this overview chapter, we discuss the main findings from the twelve papers contained in this volume as well as those of Deardorff and Stern (2006).
8. These values differ considerably from the 'universal' income growth elasticity of -2 that Collier and Dollar (2001, 2002) use in their influential policy simulations.
9. In a paper prepared for the present UNU–WIDER project, but not included in this volume, Graff, Roland-Holst and Zilberman (2006) argue that the potential exists for globalization to confer dramatically higher food productivity and rural incomes on developing countries, via the mechanism of North–South technology transfer – in particular, bio-technological or medical transfers. In another paper prepared for this project, Aggarwal (2006) analyses the combined effects of technology transfer, openness and institutions on one important phenomenon affecting the poor – that is, environmental degradation.
10. In another paper prepared for the present UNU–WIDER project Ligon (2006) seeks to account for variations in the consumption distribution across countries and time, and then to estimate the welfare loss associated with different types of shocks and, more particularly, global shocks.
11. See Nayyar (2002) for the debate on issues and institutional reforms required for improving the governance mechanisms over the globalization process.

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2

Channels and Policy Debate in the Globalization–Inequality–Poverty Nexus

Machiko Nissanke and Erik Thorbecke

Introduction

The process of globalization has led to a much greater integration of the world economy. The flows of trade, capital, labour, technology and information across national borders have accelerated since the 1980s and created an environment conducive to faster economic growth and transmission of knowledge. It is evident that the forces of globalization provide a strong potential for a major reduction in poverty in the developing world. However, for a number of reasons brought out in this chapter, the positive impact of globalization on poverty alleviation worldwide has not been as substantial as one might have expected. In this chapter we explore structural factors and policies within the world economy and national economies that impede the full transmission of the benefits of the various channels of globalization to poverty reduction.

The fear that the poor have been by-passed or even harmed by globalization has not diminished. Many recent studies point towards increasing inequality in world income distribution, and limited, if not a total lack of, convergence among participating national economies and across regions as globalization proceeds. Concern about inequality trends is relevant to the extent that the latter may affect growth and thereby poverty alleviation in the future. Inequality acts as a filter between growth and poverty. Inequality is also relevant to the measurement of poverty, if the *relative* definition of poverty is used rather than the *absolute* definition. While absolute poverty is defined in reference to a poverty line that has a fixed purchasing power determined so as to cover basic needs, relative poverty is determined as a fixed proportion of the mean income of the population (Bourguignon, 2004).

Practically all estimates of poverty are based on absolute poverty rather than on relative poverty lines. The most recent estimate based on household surveys (Chen and Ravallion, 2004) suggests that if one uses a poverty line of purchasing power parity (PPP) with US$1 per day as a cutoff point, there were 390 million fewer people living in poverty in 2001 than in 1980. The number of poor people fell from 1.5 billion in 1981 to 1.1 billion in 2001, and the share of the population of developing countries living on less than US$1 per day declined from 40 per cent to 21 per cent. However, this study also shows that this progress on poverty reduction was achieved mainly by a substantial reduction in the number of poor people in China (400 million fewer people were poor in China in 2001). Their estimate also indicates that the absolute number of the poor has fallen only in Asia and risen elsewhere, and the total number of people living on less than US$2 per day has in fact increased worldwide. In particular, poverty has increased significantly in Africa in terms of poverty incidence as well as the depth of poverty.

Despite the utmost importance of understanding the globalization–poverty nexus, however, the precise nature of the various mechanisms whereby the ongoing process of globalization has altered the pattern of income distribution and the conditions facing the world's poor, has yet to be carefully analysed. As discussed below, the globalization–poverty relationship is complex and heterogeneous, involving multi-faceted channels. It is highly probable that globalization–poverty relationships may be non-linear in many aspects, involving several threshold effects. Indeed, each subset of links embedded in the globalization (openness)–growth–income distribution–poverty nexus can be contentious and controversial. Besides the 'growth' effects of globalization on poverty (the effects of globalization on poverty filtered through economic growth), globalization/integration is known to create winners and losers directly, affecting both *vertical* and *horizontal* inequalities (Ravallion, 2004a). Because these multi-faceted channels interact dynamically over space and time, the net effects of globalization on the poor can only be judged on the basis of context-specific empirical studies.

Cross-country studies requiring precise measurements and definition of the two key concepts – globalization and poverty – tend to fail to provide a deeper insight into this critical nexus. While in some cases cross-country studies can provide hypotheses relating to the physiology of the growth process, in our view, only detailed case studies are able to delineate the role of path dependence of multiple factors such as resource endowments, trade and production structures, policies and institutions. Such research, if carefully conducted, should yield high dividends in identifying appropriate policy responses to globalization in relation to the overriding policy objective of poverty reduction.

This chapter aims to provide a critical literature review of the debate surrounding the globalization–poverty nexus, focusing on channels and linkages through which globalization affects the poor. These channels can be compared to rivers and canals flowing into a common sea or lake. Some of the rivers may be muddy and even polluted, while others may be crystal clear. The resulting quality of the lake or sea water depends on how these various flows combine, and similarly, the ultimate net effects of the different globalization–poverty channels depend on their combined individual effects.

The chapter is structured as follows. In the next section we introduce four different concepts used to measure trends in world income inequality, which are relevant for our discussion on the globalization–poverty nexus. Following this we go on to examine the 'growth' conduit through which globalization affects poverty (the growth channel). In the penultimate section we discuss other channels in the globalization–poverty nexus, operating through changes in relative factor and good prices, factor movements, the nature of technological change and diffusion, the impact of globalization on volatility and vulnerability, the worldwide flow of information, global disinflation, and institutions, respectively. We round off the chapter with a discussion of strategic policy issues within the context of the globalization debate.

Concepts of world income inequality

An important issue that needs to be addressed at the outset is what is meant by 'inequality' in the globalization debate. At least four different concepts (types) of income inequality can be identified:[1]

(i) The first concept measures differences in mean incomes between countries (or regions). There is no population weighting and every country is weighted equally. This concept is useful in determining the extent of convergence or divergence among countries or regions.
(ii) The second takes mean national (or regional) incomes but weights them by the population of the countries (regions). In this case the resulting income distributions will be strongly affected by large countries (for example, China and India) and regions.
(iii) The third measures interpersonal inequality at global, national or regional levels, respectively. At the global level, this concept yields the world's income distribution.
(iv) A fourth concept is that of vertical and horizontal inequality. While vertical inequality refers to inequality among individuals at different levels of the income pyramid, horizontal inequality refers to inequality among individuals within the same broad income or socioeconomic class.

A crucial question is whether worldwide income distribution has become more or less even during the recent globalization era. According to concept (i) (national GDPs per capita with each country weighted equally) there has been an almost continuous and sharply rising divergence since the 1950s, with the Gini coefficient rising from around 0.43 in 1950 to 0.53 in 2000. On the other hand, based on concept (ii) (with each country's mean income weighted by population size), worldwide income distribution has become significantly more even, with the qualification that this trend has been totally driven by China. Hence, estimates of 'between-country' inequality vary widely, depending on whether estimation is made on the basis of using country weights – concept (i) – or population-weights – concept (ii).[2] Note that both of these concepts ignore entirely the distribution of income within countries, as well as any change over time in those intracountry distributions.

The third concept captures inequality across individuals in the world as it includes 'within-country' distributions. In this sense, it is the best measure of world income inequality and its evolution over time. The various attempts to measure this concept are in general agreement that worldwide inequality is very high and rose slightly up to the early 1990s before falling marginally. The one exception is the study by Sala-í-Martín, which appears to suffer from methodological flaws (Milanovic, 2002a).[3]

While globalization could alter both vertical and horizontal inequality (concept (iv)), as Ravallion (2004a) argues, globalization may affect horizontal inequality particularly adversely by producing winners and losers among broadly similar groups. But clearly, class conflicts could also result from vertical inequality. For example, a structural adjustment and trade liberalization programme could lead to higher food prices in a developing country, benefiting the farmers who are net sellers of food, while agricultural workers (the landless) who are net purchasers of food would be affected negatively by the reform.

Williamson (2002) and Bourguignon and Morrison (2002) observe that since the early nineteenth century, the diverging trend of world income has been driven mainly by the rise of between-country inequality rather than by the rise of within-country inequality.

Since critics of globalization are often more concerned about the *policy* effects of globalization on the widening gap between rich and poor countries, greater attention has been paid in the debate to the trend in the country-weighted between-country component of world inequality (concept (i)). Indeed, according to this measure, between-country inequality has continued to increase since the 1960s, while within-country inequality has risen steadily since the 1970s, reversing the early falling trend in the first half of the twentieth century. The convergence debate surrounding this concept of world inequality is discussed in the final section of this chapter.

The growth channel in the openness–growth–inequality–poverty nexus

Policies of openness through the liberalization of trade and investment regimes and capital movements have been advocated worldwide for their growth and welfare-enhancing effects on the basis of the propositions embedded in the well-known economic theories of international trade and investment (for example, the Ricardian comparative advantage theory, the Heckscher–Ohlin–Samuelson model, the new trade theories *à la* Krugman, or the model of intertemporal international borrowing/lending or portfolio allocation models). In these models, the main growth-enhancing effects of openness are assumed to filter through: (i) static efficiency gains associated with improved resource allocation for national economies as well as for the world economy due to increased specialization; (ii) dynamic efficiency gains from such factors as economies of scale, diffusion of information, technology transfers and knowledge spillover effects, as well as intertemporal trade gains from cross-border borrowing/lending for increased investment and consumption smoothing and portfolio risk diversification. In order to analyse and understand the impact of openness on poverty, the causal chain openness–growth–inequality–poverty must be scrutinized link by link.

The openness–growth link

The first link of the chain is from openness to growth. The main manifestation of openness is through trade and capital movement liberalization, which in turn is presumed to affect growth directly through three sub-channels: exports, imports and capital inflows. Trade liberalization policies encourage exports, which benefit export industries and contribute to GDP growth. Although this link is relatively transparent, one issue still debated in the literature is the direction of causality. Do exports influence growth, or does growth influence exports – or are they interlinked into a virtuous circle? Using an instrumental approach, Frankel and Romer (1999) make a rather convincing case that trade influences growth both by increasing human and physical capital and by boosting total factor productivity growth.

A second sub-channel links increased imports to growth. A country that switches from a regime of import substitution to one of trade liberalization will, in the short run, damage previously protected domestic industries, and suffer from a fall in fiscal revenues as a result of lower tariffs. However, the initial negative consequences on output are likely to be more than compensated through a more efficient allocation of resources and the benefits of competition, leading to a higher growth path. Successful cases of trade liberalization leading to growth are usually found when import liberalization is preceded by, or implemented in tandem with, export promotion policies and other measures to strengthen the technological capability of domestic producers, as was observed in the Asian NICs.

The third sub-channel operates through the impact of foreign investment, portfolio and other capital flows on domestic output and growth. If foreign direct investment (FDI) takes the form of 'greenfield' investment as opposed to investment through merger and acquisition, much of the capital inflow from transnational corporations (TNCs) tends to be converted directly into factories producing new products. However, the transfer of technology, skills and management know-how that is assumed to accompany FDI is not necessarily automatic or guaranteed. Further, the postulated positive effects of portfolio and other capital flows (hot money) on growth have been questioned increasingly in recent years. The recent IMF study (Prasad *et al.*, 2003) acknowledges that it is difficult to establish a strong positive causal relationship between financial globalization and economic growth.[4] Furthermore, these short-term capital flows contribute to the increased vulnerability to external shocks of the recipient developing countries.

A large number of empirical studies based on cross-country regressions have been conducted to show the beneficial effects of an open economy regime on growth: for example, Dollar (1992); Sachs and Warner (1995); Dollar and Kraay (2001, 2002).[5] However, the validity of these empirical exercises has been contested on technical grounds by many researchers.[6] In a recent comprehensive critical analysis of the various studies on the relationship between trade and growth, Cline (2004: 248) concludes that 'overall it would seem that the weight of the empirical evidence is on the side of those who judge that more open trade policies lead to better growth performance'. It is worth noting here, however, that the positive openness–growth link is neither automatically guaranteed nor universally observable, as is discussed in detail in our final section.

The growth–inequality interrelationship

The second link in the causal chain from openness to poverty is the interrelationship between growth and inequality. There are two contradictory theoretical strands relating income and wealth inequality to growth. The classical approach, best reflected by Kaldor (1956), argues that a higher marginal propensity to save among the rich than among the poor implies that a higher degree of initial income inequality will yield higher aggregate savings, capital accumulation and growth. Additional arguments in favour of the growth-enhancing effect of inequality are based on the existence of investment indivisibilities and incentive effects.

The contrasting new political economy theories linking greater inequality to reduced growth operate through a number of sub-channels, as shown in Figure 2.1, which is adapted from Thorbecke and Charumilind (2002). These sub-channels are, respectively: (i) unproductive rent-seeking activities that reduce the security of property; (ii) the diffusion of political and social instability leading to greater uncertainty and lower investment; (iii) redistributive policies encouraged by income inequality that impose disincentives on the rich to invest and accumulate resources; (iv) imperfect credit markets resulting in underinvestment by the poor, particularly in human capital; and (v) a relatively small income share accruing to the middle class – implying greater inequality – has a strong positive effect on fertility, and this in turn has a significant and negative impact on growth.

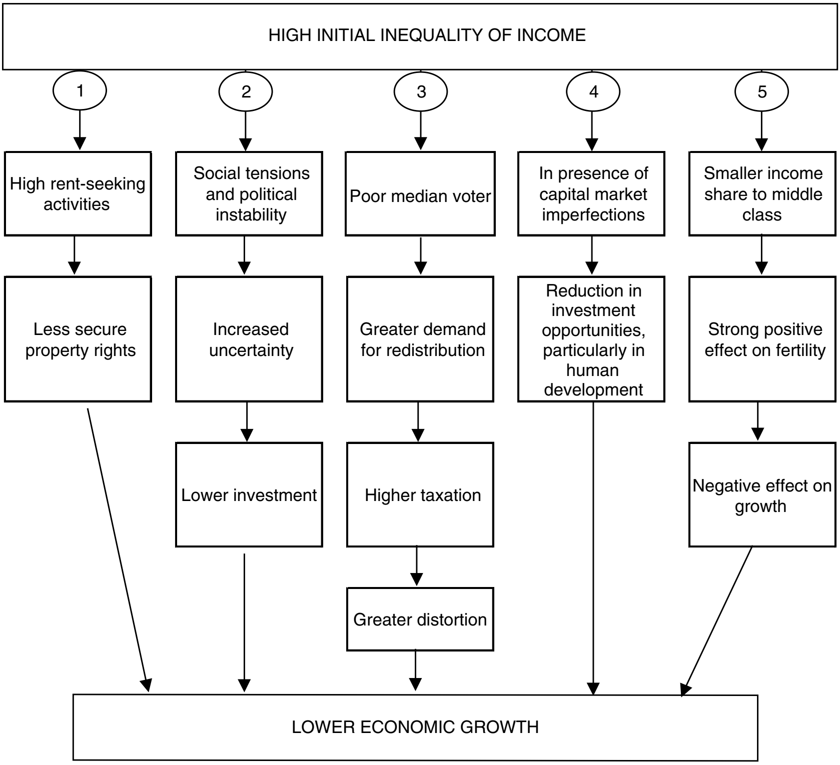
HIGH INITIAL INEQUALITY OF INCOME
1
2
3
4
5
High rent-seeking activities
Social tensions and political instability
Poor median voter
In presence of capital market imperfections
Smaller income share to middle class
Less secure property rights
Increased uncertainty
Greater demand for redistribution
Reduction in investment opportunities, particularly in human development
Strong positive effect on fertility
Lower investment
Higher taxation
Negative effect on growth
Greater distortion
LOWER ECONOMIC GROWTH

Figure 2.1 Channels through which inequality effects growth

Note: Figure adapted from Thorbecke and Charumilind (2002).

Sources: (1) Benhabib and Rustichini (1991); Keefer and Knack (2000); (2) Alesina and Perotti (1994); (3) Bertola (1993); Alesina and Rodrik (1994); Persson and Tabellini (1994); (4) Banerjee and Newman (1993); Aghion and Bolton (1997); (5) Perotti (1996).

Some additional indirect paths (and more circuitous routes) through which inequality ultimately affects growth are likely to exist. Wide income and wealth disparities can have an impact on education, health and crime, through such manifestations as underinvestment in human capital, malnutrition leading to low worker productivity and stress and anxiety. In turn, these manifestations may contribute to lower long-term growth.

The rejection of the Kuznets hypothesis of the inverted U-shaped relationship between growth and inequality (as per capita income increases) by a number of empirical studies provided much impetus to the new political economy literature (discussed above) that postulates that high initial inequality is detrimental to economic growth.[7] The proponents of this approach, while rejecting the immutability of the Kuznets curve, argue that growth patterns yielding more inequality in income distribution would, in turn, engender lower future growth paths. Although country-specific evidence is quite limited and might not be generalizable to other settings, a recent study of the dynamics of inequality and growth in rural China based on the growth experience of villages finds robust, statistically significant evidence that inequality reduces growth (Benjamin *et al.*, 2004). The authors suggest that the mechanism by which inequality exerts its negative effect was through its tilting of village economic activity away from higher-growth, non-agricultural development towards agriculture, thereby impeding structural transformation into non-agricultural activities.

In the light of the new literature that emphasizes the impact of inequality on incentives, social conflicts, transaction costs and property rights, the possible link between growth and poverty is examined in recent UNU–WIDER studies (Cornia, 2000; Addison and Cornia, 2001). These studies argue that: (i) there is a concave relationship between inequality and growth: growth can be low at low levels of inequality because of disincentive effects, and low at high levels of inequality through depressing effects on private investment caused by social conflicts; (ii) in this concave growth–inequality relationship, there exists a 'growth-invariant efficient inequality' range.[8] Given this growth–inequality relationship, these studies suggest that any country that intends to maximize poverty reduction should choose the lowest level of inequality within the broadly growth-invariant, efficient inequality range.

The inequality–poverty link via future growth

Since inequality is supposed to affect future growth and the future growth path, it also influences poverty. The UNU–WIDER volume cited above (Cornia, 2004) concludes that the widespread increase in inequality has been detrimental to the objective of poverty reduction, because large rises in inequality have stifled growth, and because poverty, at any given growth rate of GDP, falls less rapidly in the case of a more unequal distribution than in the case of a more equitable one. Thus, in the analytical framework used to examine the inequality–growth–poverty relationship reviewed above, the UNU–WIDER study clearly indicates that high inequality tends to reduce growth. The obvious policy implication following from the above causal sequence is that successful poverty alleviation depends not only on favourable changes in average GDP per capita growth but also on favourable changes in income inequality.

The conclusions drawn from the UNU–WIDER study challenge the dominant mainstream views derived from a number of World Bank studies such as Deininger and Squire (1996); Li *et al.* (1998); Dollar and Kraay (2001, 2002). These conventional views argue that: (i) the 'within-country distributive impact' of globalization-cum-liberalization is on the whole neutral; (ii) the long-term distribution is broadly stable; (iii) there is no clear association between inequality and growth, and growth is distribution neutral; hence growth is the only realistic option. For example, Dollar and Kraay (2001, 2002) argue that 'since the share of income going to the poor does not change *on average* with growth, the poor benefit from growth', and 'trade is good for growth and growth is good for the poor'.[9] They estimate that the *average* growth elasticity of poverty reduction ranges from 0.6 per cent to 3.5 per cent.[10]

However, the methodology used in yielding these results has since then been challenged. Ravallion (2002) argues, for example, that average neutrality found in the Dollar and Kraay study and other studies is not inconsistent with strong distributional effects at the country level. A critical question, according to Ravallion, is whether or not inequality is an impediment to poverty-reducing growth, or in other words, whether high inequality attenuates the growth elasticity of poverty. His analysis confirms that the elasticity of poverty with respect to growth is found to decline with the extent of inequality.

There is probably no greater fundamental issue in economic development than a better understanding of the mechanisms through which growth affects poverty. Foster and Székely capture the heart of the debate between two alternative approaches and models of development:

> one model emphasizes growth and efficiency under the idea that they eventually, if not immediately, improve the standard of living of the population at large, including the poor; the alternative model stresses that the state must play an active role in determining where the benefits of development end up, since it is not clear that the poor will benefit automatically. (Foster and Székely, 2000: 59)

While it is axiomatic that growth is a necessary condition for the alleviation of poverty, the key questions are how the impact and magnitude of growth on poverty reduction can be fully ascertained and measured; and what is the optimal degree of active state intervention to reduce poverty without sacrificing (or with a minimum loss of) efficiency.

An inherent limitation of poverty measures is that they totally ignore the situation of income distribution above the poverty line.[11] An aggregate poverty measure is essentially a welfare function in which the poor receive all the weight and the non-poor receive no weight (Kakwani *et al.*, 2000). Ideally, analysts would like to have access to a measure, spanning the whole income distribution, that combines poverty and inequality in a relatively non-arbitrary manner. Clearly, truncating income distribution at the poverty line is arbitrary and leads to a loss of information by failing to consider the distribution of income above that line. Foster and Székely (2000) quite cogently raise the question, 'Why should an income slightly higher (than the poverty line) be ignored, just because it is above the arbitrary cutoff being employed?'

They proceed to develop a methodology where the measurement of poverty is sensitive to the state of income distribution and includes a weighting scheme that is continuous, in which the non-poor also receive positive weight, which may be made as small as one wishes. It is based on Atkinson's (1970) family of 'equally distributed equivalent income' functions called *general means*. For different values of the parameter α, more weight is placed on higher incomes (for higher parameter values), and more weight on lower incomes (at lower parameter values). Based on 144 household surveys from twenty countries over the last 25 years, Foster and Székely show that the growth elasticity of the general means can vary from 1.08 to a very low 0.22, depending on the choice of α. They conclude that:

> the positive value of the elasticity indicates that growth is good for the poor. However, it seems that it is even better for other sectors of society. This suggests a role for additional policies aimed specifically at guaranteeing that the poor share the benefits of development more proportionally. (Foster and Székely, 2000: 69)

Indeed, despite the opposite inferences made by mainstream economists on the basis of cross-country regression analyses,[12] it has been recognized increasingly that the *pattern* of economic growth and development rather than the rate of growth *per se* may have significant effects on a country's income distribution and poverty profile. This issue has led to a debate on what constitutes pro-poor growth.[13]

Debate on pro-poor growth

DFID (2004) notes that there are two competing approaches to defining what constitutes pro-poor growth: an *absolute* and a *relative* concept. The absolute concept is associated with the work by Ravallion (2004b). Focusing on the rate of change in absolute poverty, he defines pro-poor growth as any growth in mean income that benefits the poor in absolute terms. According to this definition, any increase in GDP that reduces poverty measured by some agreed indicators is pro-poor growth, even if it is accompanied by a worsening income distribution. In contrast, the relative concept places much more emphasis on the distributional effect of growth, such as changes in inequality during the growth process. For example, Kakwani and Pernia (2000) consider growth as pro-poor if the distributional shifts accompanying growth favour the poor proportionately more than the non-poor.

As Osmani (2005) notes, what matters most for the relative concept is the nature and pattern of growth, whereas the absolute concept captures the effect of the totality of the growth process on poverty. Seen in this light, both concepts are useful for policy-makers in tackling the issue of poverty reduction, although it is difficult for some analysts to accept as pro-poor growth a situation where, for example, a 10 per cent aggregate GDP growth rate would reduce the incidence of poverty by only 1 per cent.[14] Recognizing this point, Kakwani *et al.* (2004) propose a better measure of pro-poor growth, using the concept of the poverty equivalent growth rate (PEGR), which takes into account both the magnitude of growth and how the benefits of growth are distributed to both the poor and the non-poor.[15]

Indeed, the debate on the meaning of pro-poor growth is related to the issue underlining the complex triangular relationships among poverty, growth and inequality, as discussed above. Taking up this relationship, Bourguignon (2002, 2004) notes that first, absolute poverty reduction could be achieved through two effects: (i) the growth effect – that is to say, the effect of the growth rate of the mean income of the population; and (ii) the distribution effect – for example, the change in income distribution. Second, he emphasizes that these two effects are not independent of each other, but dynamically interact over time in a country-specific context producing heterogeneity and non-linearity in the poverty–growth relationship. More specifically, both the growth elasticity and the inequality elasticity of poverty are increasing functions of the level of development and decreasing functions of the degree of relative income inequality. Hence, Bourguignon (2004) advances the following three interrelated points:

(i) Distribution matters for poverty reduction;
(ii) Effective redistributive policies may in fact yield a double dividend: they reduce poverty today and accelerate poverty reduction in future, as discussed above; and
(iii) The real challenge in establishing a development strategy for reducing poverty lies in understanding the interactions between distribution and growth.

Thus, despite the heated debate concerning the definition of pro-poor growth, there appears to be general agreement that poverty reduction would require some combination of higher growth and a more pro-poor distribution of the gains from growth. For Ravallion (2004c), the real issue is not *whether* growth is pro-poor, but *how* pro-poor it is, which can be measured by a distribution-corrected rate of growth. Referring to the growth–distribution relationship, Ravallion (2004c) supports the points made by Bourguignon above by arguing that 'while there may well be tradeoffs between what is good for growth and good for distribution, but some factors that impede growth may also prevent the poor from fully sharing in the opportunities unleashed by growth'.[16] From this perspective, one could reach a general definition acceptable to both sides of the debate – that is to say, growth is considered pro-poor if it, in addition to reducing poverty, also decreases inequality.

Now, from a policy perspective, it is important to note that pro-poor growth cannot be achieved spontaneously. There is increasing recognition that the postulated trickle-down process often fails to materialize or is too slow to have a significant impact. Hence, pro-poor growth requires a strong commitment on the part of policy-makers to adopt pro-poor policies capable of producing and sustaining a distribution-corrected growth path. The exact design of such pro-poor policies depends on initial conditions and institutions in country-specific settings.

Other channels in the globalization–inequality–poverty nexus

Aside from the growth channel discussed above, there are various other channels through which globalization can produce winners and losers, and hence have an impact upon poverty. The globalization channels we examine here are:

- changes in relative product and factor prices;
- differential cross-border factor mobility and associated changes in global market and power structures;
- the nature of technical progress and the technological diffusion process;
- the impact of globalization on volatility and vulnerability;
- the impact of globalization on the flow of information;
- globalization and global disinflation; and
- institutions in developed and developing countries that mediate the various channels and transmission mechanisms linking globalization to poverty.

Changes in relative prices of factors and products

The income distribution effects induced by a shift in relative product prices in the process of the opening up of trade are well known, as postulated in the Stolper–Samuelson theorem of international trade. The losers (especially the poor residing in both urban and rural areas) may be vulnerable to these induced effects in addition to changes in absolute and relative prices of wage goods (Williamson, 2002). Thus globalization can affect poverty directly through relative price changes in factor markets and goods markets.

According to the Stolper–Samuelson theorem as applied to the within-country inequality, developing countries well-endowed with unskilled labour should experience a decline in income inequality through an increased demand for unskilled labour, while unskilled labour in developed countries would lose out, with an adverse effect on equity.[17] Rodrik (1997) confirms this income distribution effect for industrialized countries in terms of a more elastic demand for unskilled domestic labour in the presence of a large international pool of unskilled labour. However, the postulated narrowing wage gaps between skilled and unskilled labour have not been observed in many developing countries, particularly in Latin America and Africa.

Kanbur (1998) explains this disconnection between what theory predicts and the actual outcome in terms of segmented factor markets and the time horizon of the analysis, suggesting that the benign income distribution effects would eventually materialize on the strength of long-run factor mobility.[18] Wood (1999) proposes two possible explanations for the increased wage disparity in Latin America: (i) the entry into world markets in recent decades of low-income Asian economies, such as China and India, with abundant reserves of unskilled labour; and (ii) the nature of new technology heavily biased in favour of skilled and educated labour.[19]

Factor mobility

Globalization winners and losers can be produced through channels other than changes in relative product and factor prices that are a main conduit for the income-distribution effect of trade openness in the Heckscher–Ohlin–Samuelson–Stolper (HOSS) model. For example, unlike in the HOSS world, which assumes factor mobility only within a country, cross-border factor mobility has historically been a dominant force in the globalization process for many centuries. The highly differentiated degree of cross-border factor mobility observed today may be identified as another channel of producing winners and losers as a result of globalization.

In this context, it is of interest to note that income convergence among the globalizing countries during the first wave of modern globalization between 1870 and 1914 was driven primarily by migration. Sixty million people, including largely unskilled workers, migrated from Europe to North America and other parts of the New World during that period (Williamson, 2002; World Bank, 2002). In contrast, in the current phase of globalization, the extent of cross-border mobility differs significantly between skilled and unskilled labour. In consequence, as noted by Faini (2001), the 'wage equalization' theorem postulated by the international trade theory is less likely to take place through labour migration.

Furthermore, according to theory, capital seeking higher returns should move to capital-scarce developing countries, thereby raising the marginal productivity and labour wages in these countries (Easterly, 2004). However, in reality, capital does not flow to developing countries to finance productive investment as much as has been predicted.[20] International capital markets in recent decades have not acted as an intermediation function between saving supply and investment demand on a global scale. Rather, as Obstfeld and Taylor observe:

> today's foreign asset distribution is much more about asset swapping by rich countries – diversification – than it is about the accumulation of large one-way positions – a critical component of the development process in poorer countries in the standard textbook treatments. It is more about hedging and risk sharing than it is about long-term finance. (Obstfeld and Taylor, 2001: 64)

Indeed, the large discrepancies between gross capital flows and net capital flows reflected in countries' current account positions point to a condition where *diversification* finance far outweighs *development* finance in cross-border capital transactions.[21] More generally, Culpeper (2002) summarizes several distinctive features of factor movements in the current wave of globalization: (i) capital and skilled labour do not migrate to poor countries as much as between developed countries; (ii) there is a tendency for skilled labour to migrate from developing countries to developed countries; and (iii) with capital market liberalization, there is a propensity for capital flight to developed countries, particularly during periods of crisis or instability. With such perverse movements, Culpeper points to the possibility that, as globalization proceeds, developed countries would see inequality fall, while developing countries would experience its rise.

We can indeed expect greater global integration to affect internationally mobile factors (skilled labour and capital) differently from those factors that are not (or are less) mobile (unskilled labour and land) in both developed and developing countries (Rodrik, 1997; Kanbur, 1998). In this context, Basu (2003) explains why unskilled labour is additionally disadvantaged in the current phase of globalization. He argues that while the mobility of unskilled labour is severely restricted and regulated, de facto labour mobility has taken place through the increasingly free cross-border capital mobility and TNCs' ability to relocate production sites in response to changes in relative labour costs. In fear of driving away TNCs, governments of developing countries are less likely to enact regulations to protect and enhance labour rights.[22] Thus, as observed over recent decades, the differential factor mobility may profoundly affect the functional income distribution between labour and capital.

Technological progress and technological diffusion

The nature of technical progress and of the technological diffusion process can be a further channel through which globalization could affect income distribution and poverty. Culpeper (2002) suggests that technical change emanates predominantly from R&D activities in the developed (industrialized) countries in response to conditions typical of their own resource endowment. Hence, technical change tends to be labour-saving and skill-biased, and would tend to increase inequalities universally in both developed and developing countries.

Referring to the importance of distinguishing between three categories of labour (skilled, semi-skilled and unskilled labour), Milanovic (2002b) also explains the increased wage inequality in low-income countries with the situation in which increased globalization, through trade and FDI, has raised the demand for semi-skilled labour but not for unskilled labour, as a minimum skill level is required for production. Hence, it is the skilled or semi-skilled labour that benefits from globalization, while unskilled labour has increasingly been marginalized by it.

Similarly, Kanbur (1998) adds the technology factor as an explanation for the observed increase in skilled–unskilled wage differentials in many developing countries; in particular when capital inflow embodying new technology is complementary to skilled labour. Thus, he argues that greater openness and integration into the world economy will have the benefit of providing access to more productive technology, but will widen the gap between skilled and unskilled wages in the modern sector and in the economy as a whole. Agénor (2002) also notes that the wage disparity widens after trade liberalization and the associated decline in the cost of imported technology and capital goods because there is a high degree of substitutability between unskilled labour and capital, in contrast to the high degree of complementarity between skilled labour and capital.

Furthermore, technological diffusion and access to new technology is not universal and spontaneous. Hence, global productivity differences could widen over time, which might increase income inequality. For example, Easterly (2004) argues that, in addition to differences in factor endowments, productivity differences between countries have driven trade and factor flows and income inequality.[23] Indeed, the technological gaps between innovating and imitating countries as discussed in Vernon's product-cycle model are still a dominant factor in determining global inequality between countries in income and wages.

Arguably, globalization has accelerated the process of privatization, including the privatization of research. Nowhere is this trend clearer than in agriculture. The green revolution, which was in the public domain, has been replaced by the biotechnological revolution, which is very much in the private domain. The latter is led by TNCs expecting royalty payments for their new products, in the main genetically modified (GM) seeds.[24] A potential issue is whether small farmers in developing countries (for example, in sub-Saharan Africa and South Asia) can afford to adopt biotechnology and if not, what the consequences are for income distribution and poverty. While it is probably too early to judge, it has been argued that the concern that risk-averse poor farmers cannot afford to purchase the costlier GM seeds does not seem to be vindicated by the dramatic take-up of GM cotton in developing countries as soon as it is available and is seen to be profitable.[25]

Volatility and vulnerability

Greater openness tends to be associated with greater volatility and economic shocks, which affect vulnerable and poor households more severely, and deepen poverty and income inequality (Culpeper, 2002). Goldberg and Pavcnik (2004) also emphasize the effect of trade liberalization on inequality because of the increasing vulnerability of unskilled labour through several labour market channels. Birdsall (2002) reports growing empirical evidence of validating the claim that the poor are harmed disproportionately more during contractionary periods than they benefit from expansionary periods.

Similarly, on the basis of a very extensive survey of the empirical literature, Winters *et al.* (2004) conclude that while the empirical evidence broadly supports the theoretical proposition that while trade liberalization will be poverty-alleviating in the long run and on average, it also necessarily brings about distributional changes. They point to a lot of evidence that poorer households may be less able than richer ones to protect themselves against (short-term) adverse effects, or take advantage of trade liberalization.[26]

The Asian financial crisis demonstrated unambiguously the high price that poor households had to pay during the downturn. Massive capital outflows during the crisis, combined with tight monetary and fiscal policies mandated by the IMF, led to wide currency fluctuations (at one time, the Indonesian rupiah depreciated by some 500 per cent) and a liquidity crisis that reduced output and employment. Poor households in urban areas, lacking safety nets, suffered disproportionately during the transition period before these economies recovered.

Interestingly, there is some evidence that volatility is negatively correlated with growth in developing countries, in contrast with developed countries where this correlation is positive (Kose *et al.*, 2004). An implication of this finding is that poor countries growing slowly are further burdened by greater volatility.

Flow of information

Globalization has contributed to the enormous increase in the flow of information and knowledge worldwide. Internet technology and the spread of mass media transmit information almost instantaneously. Clearly, this provides enormous potential to contribute to the human and technical capital of households in developing countries. At this stage, an important issue is the design and development of channels through which this flow of information is made accessible to poor households in useful form.

Notwithstanding the major contribution this flow of information can make to speed up the development process, there are some drawbacks. Graham (Chapter 10, this volume) has argued that the increasing flow of information about the living standards of others can result in changing reference norms and increased frustration with relative income differences, as members of a given socioeconomic or occupational group in a poor country can compare their welfare increasingly with similar groups in richer countries.

Globalization can also increase volatility and insecurity for many cohorts, particularly those, such as older people, not well positioned to take advantage of the new opportunities offered by the opening up of trade and capital movements.

Globalization and global disinflation

Since the mid-1990s, global inflation has dropped from 30 per cent per year to 4 per cent. Rogoff (2003) attributes this to a number of factors such as improved central bank institutions and practices, improved fiscal policy, and the technological revolution. However he emphasizes the role played by the increased level of competition, in both product and labour markets, that has resulted from the interaction between increased globalization, deregulation, and a decreased role for governments in many economies.

It would be difficult to argue that this dramatic disinflation channel does not have beneficial effects on the poor worldwide. Even small subsistence farmers who tend to be relatively sealed off from the market economy must enjoy certain advantages in terms of lower prices for their consumption goods. However, a question to be raised is whether the over-emphasis on macrostability in some developing countries might not have been at the expense of some additional growth.

Institutions

Institutions mediate the various channels and mechanisms through which the globalization process affects poverty (Sindzingre, Chapter 11 in this volume). Institutions act as a filter intensifying or hindering the positive and negative pass-through between globalization and poverty, and can help to explain the diversity, heterogeneity and non-linearity of outcomes. This filtering process operates at the multi-country, country, and even village-level, respectively. International institutions such as the IMF and WTO follow their own rules of the game, often having a major impact on poverty outcomes. Similarly, institutions that protect agricultural commodities in developed countries can block the channel of exports for the same commodities from the poorest countries (largely in sub-Saharan Africa), thereby preventing them from gaining the benefits of trade openness. At the other extreme there are examples of village-level institutions that can protect resident households from environmental degradation and subsequent poverty caused by over-exploitation of resources, such as forests, by TNCs. It is worth noting that some institutions, such as the Bretton Woods institutions and the World Trade Organization (WTO), embed the rules of the game under which the international trade, financial and monetary systems operate. In this sense these institutions can be thought of as carriers of the globalization process.

Rodrik (1998a, 1998b) argues cogently that the benefits of trade openness can only be reaped fully in countries with effective institutions; in particular, institutions that can resolve successfully the distributional conflicts stemming from trade openness. He also highlights the primacy of institutions over geography and integration in explaining comparative economic development experiences (Rodrik 2004, 2005).

Indeed, once institutions are defined broadly *à la* North as 'the humanly devised constraints that shape human interaction', institutional environments are important in determining whether the benefits of globalization are harnessed and spread positively and evenly, and negative shocks associated with globalization are filtered out. As Sindzingre (Chapter 11 in this volume) argues, for example, the impact of globalization on the poor is intermediated on the one hand by domestic political economy structures and institutions such as social polarization, oligarchic structures and predatory regimes that may bias, confiscate or nullify globalization gains for particular groups of poor. On the other hand, the positive effects of globalization on growth and poverty can be found when institutional conditions are characterized by such elements as political participation, social cohesion and management of social conflict arising directly from globalization effects.

At the same time, globalization can bring about changes in institutional environments. For example, as globalization proceeds, there may emerge a new set of norms and conventions, as well as new standards of transparency, accountability, and enforcement of the law and the accommodation of human rights and civil movements.[27] Yet, traditional institutions may erode under the pressure of market integration. For example, customary land tenure may lose its social security and equity functions through the individualization of land rights and land concentration stemming from market transactions, especially when combined with demographic pressure. More generally, however, institutional changes can be slow, and changes tend to work at the margin, since 'institutional change is incremental as a result of the imbededness of informal constraints in societies' (North, 1990: 6).

Empirical evidence and policy debate in the globalization–inequality–poverty nexus

The convergence debate and the importance of strategic integration

The observed between-country income divergence trend, discussed earlier, tends to call into question the validity of the income *convergence* thesis, advanced by Sachs and Warner (1995), among others. The thesis postulates that the adoption of open trade regimes by the poorer economies would lead to a convergence of their incomes towards those of the richer nations in the process of globalization. Krugman and Venables (1995) also support the convergence thesis by constructing a model of the globalizing world economy. In the latter model, the income levels of countries in both the core and the periphery would converge in the long run after an initial period of divergence, as trade/transport costs decline over time. Their convergence–time profile is essentially driven by the presence of economies of scale and agglomeration effects in the initial period, and factor mobility and relocation of production in the subsequent period. The latter course is assumed to take place as a result of multinational firms responding to continuous shifts in comparative advantages among nations and regions.

It is, however, abundantly clear that the mere adoption of open trade and investment regimes does not guarantee the entry of the developing countries to the convergence club. Dowrick and DeLong (2001) suggest that (i) openness to the world economy does not necessarily promote convergence; and (ii) many poor countries that have opened their economies since the 1980s have fallen behind, not just relatively but also absolutely in terms of both income levels and structural development. In this context, it is pertinent to refer to the analysis by Kitson and Michie which argues that:

> the benefits of trade do not evenly spread globally and trade may indeed lead to persistent divergence in growth, as it could influence economic growth through the *twin* processes depending on the initial conditions of trading countries; virtuous cycles of trade-induced growth for stronger nations and vicious cycles of trade-induced decline for weaker nations. (Kitson and Michie, 1995: 5)

A similar point is made by Kozul-Wright and Rayment (2004: 4), who argue that 'moves towards a more open and integrated economic space are just as likely to reinforce as they are to diminish the gaps between developed and developing countries'. They suggest that, since economies are subject to processes of cumulative and circular causation, whether global market forces establish a virtuous circle or vicious circle will depend on the initial conditions at the time of exposure and the effective design and implementation of policy to manage the integration process. Incidentally, it is relevant to note that non-convergence can also be observed at the interregional level. China is a prime example of a country in which regional inequalities increased dramatically under the influence of the globalization process that brought about large flows of FDI to the coastal provinces but largely by-passed the inland provinces.

Non-convergence and modes of integration

Indeed, the conundrum of the persistent non-convergence of world income should be addressed explicitly in terms of structural features of the global economic relationships as they evolved over time and the institutional conditions found in participating countries.[28] The income convergence trend among nation-states, to the extent that it has been observed historically, is likely to be explained more effectively by the nature of integration and specialization of sub-groups of countries rather than by the degree of openness of the trade and investment regimes *per se*, as is often claimed. In particular, in the current phase of globalization, developing countries have to reach a certain threshold by undergoing substantial changes in trade and production structure before they experience income convergence. As the World Bank study acknowledges:

> successful globalizers are those developing countries which have managed to break into global markets for manufactures and services, and

> reduce inequality in this process. It recognizes that for many low-income countries and poor people, 'globalization is not working'. (World Bank, 2002: 2)

Clearly, countries need to have reached the take off point before they can take advantage of the potential benefits of openness and globalization.

One of the critical reasons why globalization may not be working for low-income developing countries lies in the fact that the effects of international trade on growth are critically dependent on the pattern of specialization and integration. By treating two sectors symmetrically, the conventional Heckscher–Ohlin trade model (consisting of two countries, two sectors and two factors) shows that two countries equally reap aggregate gains from trade through efficiency gains.[29] In reality, however, the pattern of specialization does matter for welfare implications of a trade-induced growth path on at least two accounts.

Two sectors need not be symmetrical, first, through the well-known immiserizing effect of trade *à la* Bhagwati (1958); that is, the terms of trade (TOT) effects. Though many dismiss the likelihood of such an effect in a small economy, low-income countries dependent on the exports of a limited range of primary commodities face a deterioration of TOT, in particular if the 'fallacy composition effect' is taken seriously into account. In the 1980s and 1990s, many primary commodity-exporting countries that implemented structural adjustment programmes underwent simultaneous export drives leading to depressed prices in many export commodities (Nissanke and Ferrarini, 2001). In this context, Birdsall (2002) draws attention to the fact that measured by the trade–GDP ratio or tariff rates, most commodity-dependent countries have not been more reticent than least commodity-dependent countries about participating in international trade, but the former group has failed to grow (especially after 1980), as they have remained dependent on exports of primary commodities.

Furthermore, two sectors are not necessarily symmetrical because of dynamic scale economies – dynamic externalities through technological spillover benefits and the accumulation of knowledge capital. As the endogenous growth theory emphasizes, it is this factor that largely accounts for diverging growth rates among countries. An application of this phenomenon to the trade model implies that a country specializing in an industry with a larger positive externality would experience a faster growth rate compared with the trading partner that specializes in an industry with a weaker externality. Thus the growth rate of the two trading countries might differ considerably, depending on the pattern of specialization.

If a country follows the Rybczynski line dictated by static comparative advantage with given relative resource endowments, the country with an initial comparative advantage in non-dynamic sectors may end up in a low equilibrium trap. Countries that have benefited from globalization and integration – such as those in East Asia – are the ones that have completed the structural transformation of the composition of their production and trade structure successfully, with continuous upgrading of their human skill endowments and technology/knowledge base. Consequently, their comparative advantages have evolved over time to maximize the benefits from dynamic externalities.

Seen from this perspective, openness *per se* is not sufficient to ensure that development will follow. The internal pattern of growth and forms of integration are critical for countries to benefit from globalization-induced growth. It is in this conjuncture that the *polarization* thesis or the *international poverty trap* thesis, advanced by UNCTAD (2002), can be evaluated. The UNCTAD thesis suggests that: (i) there is a close association between the incidence of poverty and dependence on exports of primary commodities;[30] (ii) this explains the increased poverty and the socioeconomic marginalization in the commodity-dependent poorest countries, where an interrelated complex relationship between international trade and finance is reinforcing the cycle of generalized poverty and economic stagnation; and (iii) the current form of globalization is tightening, rather than loosening, this international poverty trap.[31] Indeed, the polarization thesis reminds us of the importance of reaching the take-off stage before countries can benefit from globalization, as discussed.

Strategic integration into the world economy

One of the critical issues facing policy-makers in low-income developing countries in formulating their strategic position towards the globalization process is how to evolve their patterns of comparative advantage over time. A strategic position towards globalization cannot be equated with a simple fine-tuning of the pace and sequence of liberalization measures. Clearly, it is a question concerning the pattern or forms of integration. In particular, national development policies should be designed strategically in the light of the skewed nature of the ongoing process of globalization.

First, dynamic externalities and rent-rich activities are increasingly concentrated in high-skill, knowledge-intensive sectors. In short, the skill- and technology-related divide has become wider over recent decades. This trend is reflected in the continuously declining terms of trade of less skill-intensive manufactured goods relative to high-skill and technology-intensive goods (Maizels, 1998; Wood, 1999). Kozul-Wright and Rayment (2004) note that the markets for many labour-intensive products, consisting increasingly of international-standard goods, have come to resemble those for primary products. Second, trade in the current phase of globalization is largely mediated through international production, with an increasing share of intrafirm trade undertaken by TNCs, which command the lion's share of global production and marketing networks. Considerable asymmetries in market power and access to information, technology and other intangible knowledge assets between TNCs on the one hand, and local farmers and traders in developing countries on the other, have resulted in a hugely skewed distribution of gains from trade. This is reflected in the TNC dominance in commodity and value chains of internationally traded goods, as well as in frequently observed conditions such as the sharp decline in real wages in export processing zones (Kaplinsky, 2002). The benefits of productivity improvements, instead of going to the fragmented producers and farmers, are largely appropriated by the TNCs and global supermarket chains that can exploit oligopolistic commodity markets at later stages of the value chain (UNCTAD, 2004).[32]

This uneven distribution of market power points to the need to improve the negotiating positions of developing country governments *vis-à-vis* TNCs. Kozul-Wright and Rayment (2004) emphasize the desirability of adopting policies to guide FDI within a national development strategy. In this context, Lall (2002) argues for a strategic, targeted approach to FDI so that FDI could facilitate skill and technology transfers and generate strong positive productivity spillovers for domestic firms.

Given the observed trends towards inequality, both globally and within nations, in order to derive benefits from globalization's dynamic forces, developing countries have to take strategic steps to protect themselves with a long-term vision of upgrading their comparative advantages towards high-value-added activities by climbing the technology ladder. This can be realized by developing technological capabilities through learning and adaptation. To succeed, developing country governments should consciously engage in building institutional capacities for integration, including a capable nation-state that is ready to take on the enormous challenges posed by globalization.

The importance of structural transformation

Threshold effects of globalization

Now we turn to the impact of globalization on income distribution and poverty incidence *within* countries. Milanovic's (2002b) cross-country econometric analysis, based on household survey data in 1988 and 1993, suggests that openness worsens individual countries' income distribution before improving it, and that the effect of openness on income distribution depends on the country's initial income level. In his view, this is conditioned by the fact that 'openness helps those with basic and high education, but reduces the income share of those with no education' and 'it is only when basic education becomes the norm even for the poor that openness exerts an income equalizing effect'. Thus, Milanovic postulates that 'openness helps income distribution chart an inverted U-shaped curve as the income level increases. At low income levels, openness is bad for equality: at medium and high income levels, it promotes equality' (Milanovic, 2002b: 13).[33]

Further, Agénor (2002) discusses a similar inverted U-shape relationship between globalization and poverty operating through a 'relative wage effect'. Referring to the close substitution between imported capital goods and unskilled labour, he reckons that the skilled–unskilled wage gap increases initially as a consequence of trade liberalization.[34] However, he argues that this initial widening in wage differentials may lead to investment in human capital, a gradual increase in the supply of skilled labour, and a narrowing wage gap over time. Thus, he suggests that there exists a non-linear Laffer-type relationship between poverty and globalization – at low degrees of globalization, it does hurt the poor, but at higher levels it leads to a decline in poverty. From this perspective, he infers that globalization may hurt the poor in some countries not because it went too far but rather because it did not go far enough.

Thus, these studies suggest there may be critical thresholds that must be reached before globalization can make a positive contribution to poverty reduction. The non-linear relationship between globalization and poverty postulated in these studies is interesting and worth further investigation. However, policy implications from these studies should be drawn very carefully. For example, Agénor's reasoning behind his policy conclusion is based on the assumption that investment in human capital would in some way increase automatically with the widening wage differentials across skills. Even if such an investment in human capital were to occur, it could be a long time before low-income countries experienced a significant reduction in poverty. Hence, sizeable public investment in skill upgrading is likely to be the key to ensure such results. Meanwhile, in countries at an early stage of development – that is, those that have not yet reached the critical threshold – the poor should be protected from the negative effects of globalization through various institutions of social protection and redistributional policies.

Structural transformation of an agrarian economy

Furthermore, it is important to recognize that in a world of interdependent evolution, openness is a necessary but insufficient condition for development to succeed. All countries have to undergo structural transformation throughout their respective development processes. At the outset of the development process a country is predominantly agrarian and the economy relatively closed. The majority of output originates in agriculture, where the bulk of the labour force is employed. A key issue in triggering the cumulative growth process in the early phase of development is generating the resources required to reach the take-off point. Long before most other developing countries, governments in East Asia understood that the major mechanism for obtaining the resources needed to escape the poverty trap and for industrialization was through an intersectoral transfer from agriculture. The role of the agricultural sector was to generate a surplus that could finance the necessary physical infrastructure and pragmatically educated labour force, to enable the industrialization process to succeed.

A lesson learned from the countries that have been the most successful in achieving both growth and equity throughout their development history (for example, Taiwan and South Korea) is that a continuing *gross* flow of resources should be provided to agriculture – irrigation, inputs, research and credit – combined with appropriate institutions and price policies to increase this sector's productivity and potential capacity to contribute an even larger flow to the rest of the economy, and hence a *net* surplus. Exploiting the agricultural sector too early in the development process – so typical in sub-Saharan African and some Latin-American countries – short-circuits the structural transformation. In short, reaching the take-off point is a precondition for embarking on the next phase of development (industrialization) and taking advantage of the potential benefits of openness (Thorbecke and Morrisson, 1989).

The fundamental role of agriculture in reducing poverty has been highlighted within the context of China by Ravallion and Chen (2004). They show that the bulk of the dramatic poverty alleviation in China occurred before 1980, essentially as the consequence of decollectivizing agriculture, shifting responsibility for farming to households and higher food grain procurement prices. They note that when so much of the country's poverty is found in its rural areas, it is not surprising that agricultural growth plays an important part in China, as in other developing countries. They are more sceptical regarding the score-card for trade reform, concluding that:

> While the country's success in trade reforms may well bring longer term gains to the poor … the experience of 1981–2001 does not provide support for the view that China's periods of expanding external trade brought more rapid poverty reduction. (Ravallion and Chen, 2004: 31)

In the next phase (the post-take-off phase), successful development calls for the expansion of the manufacturing and service sectors with continuous structural and technological upgrading. During this potentially high-growth phase, the role of the government is to maintain macroeconomic stability, overcome possible co-ordination failure, and act as an umpire in promoting growth pioneers. Successful countries have evolved along the product cycle determined by the path of dynamic comparative advantage. They climbed the product ladder one rung at a time (from simple textiles to computer chips), relying on their most abundant factors at each development phase. Technological leap-frogging has typically led to failure. The experience of East Asia has clearly demonstrated that a careful structural transformation as outlined above generates a growth process that is pro-poor. Other key elements of the East Asian development model were, in addition to the treatment of agriculture and education in the pre-take-off phase; sound macroeconomic management, stability and openness; the emulation of the USA as the technological leader; and strengthening intra-East and South East Asia connections (Thorbecke and Wan, 2004).

The above analysis applies particularly to countries that have not taken the necessary steps to develop their agricultural sector and consequently have not yet reached the take-off point. Many sub-Saharan countries are prime examples of agricultural exploitation leading to agricultural output stagnation and the short-circuiting of the structural transformation. An industrialization strategy, based on capturing a surplus from stagnating agricultural output, is bound to fail and can have devastating consequences on poverty.

Concluding remarks

The preceding review and critical analysis demonstrate that globalization can affect poverty indirectly through 'growth effects' as well as directly through channels such as changes in relative goods prices in favour of (or against) wage goods; changes in relative factor prices induced by trade or factor mobility; the nature of technological progress and the technological diffusion process; volatility and vulnerability; the nature of the worldwide flow of information; and global disinflation. Similarly, institutions can be designed so as to transmit and amplify the potential positive benefits of the various mechanisms through which globalization affects poverty, or alternatively, to act as a brake or even to block the transmission of those effects.

While there is a widely-held belief that growth reduces the incidence of poverty, a key issue is which structure and pattern of growth best contributes to poverty alleviation. The resulting distributional effects of globalization are known to produce winners and losers, both between and within countries. In particular, the losers (among whom are certain categories of poor) are often extremely vulnerable to changes in absolute and relative prices of wage goods. This calls for effective complementary policies and safety nets to be in place at both national and global levels.

Our review also raises the issue as to whether the present form of globalization/integration is conducive to the growth-cum-structural transformation process, which is capable of engendering and sustaining pro-poor economic growth and favourable distributional consequences. Contrary to the income convergence thesis, it is possible for globalization to generate adverse distributional consequences at the national and global levels, which could slow down or even reverse the present poverty alleviation trend.

Hence, policy-makers need to design and implement an active development strategy not only to benefit from, but also to help to counteract the negative effects of the immutable forces of globalization. Globalization should not be viewed as a reliable substitute for a domestic development strategy (Sanchez, 2003). It is not enough for governments to assume an active role in liberalizing trade and capital movements and deregulating their economies while passively waiting for the fruits of the Washington Consensus and the market forces of globalization to pull them on to a fast track to development. Instead, governments need to pursue both active liberalization and active domestic development policies. In this context, it is pertinent to refer to remarks by Milanovic, who made a careful historical analysis of the most recent period of globalization:

> the last two decades, which witnessed expansion of globalization, are, in terms of overall growth and income convergence between poor and rich countries, vastly less successful than the preceding two decades The attempt to explain divergence of incomes by 'eliminating' the countries with 'bad' policies and focusing solely on those with 'good' policies is flawed because the successful countries, and China in particular, did not follow the orthodox economic advice. (Milanovic, 2003: 676)

We have argued particularly for the need for strategic integration – globalization offers large potential benefits for the countries that decide to engage strategically and actively in the globalization process. But benefits are neither automatic nor guaranteed. Only countries that create patterns of comparative advantage towards highly skilled and highly productive activities will gain significantly from globalization. Passive liberalization may lead to marginalization. At the same time, countries that have not yet reached the critical threshold, need (i) to invest in agriculture in order to reach the take-off point to allow the structural transformation of their economies to proceed; and (ii) to strengthen institutions of social protection.

As Kanbur (1998) notes, the central policy dilemma is 'how to take advantage of the undoubted opportunities that integration into the world economy affords for rapid growth, while managing the attendant risks for domestic income distribution in its different dimensions'. Rodrik (1997) takes a similar position, arguing that while globalization is a positive trend, it can succeed and be sustained only if appropriate domestic measures are undertaken to cushion the impact on groups that are adversely affected. Yet, as Tanzi (2001) notes, the unwillingness or inability to tax international mobile financial capital in the process of tax competition and in fear of capital flight and asset migration, has, among other conditions, termed 'fiscal termites', contributed greatly to the erosion of the capacity of governments to raise revenues for redistributional purposes.

Others argue the need for alternative, more equitable forms and processes of globalization at the outset. This requires a much better grasp of the concept of *pro-poor globalization* than is held at presently. Whichever position one takes in this policy debate, it is critical to conduct well-focused empirical studies towards better understanding the globalization–poverty nexus in a country- or region-specific context, since successful policies for maximizing benefits from globalization while protecting the poor can only be designed and implemented in such a context.

Notes

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1. The first three concepts listed here were defined by Milanovic (2004).
2. Estimates with country weights take each country as one observation, while those with population weights give people equal weights. The merits and demerits of using either method are discussed in detail in Ravallion (2004a). He favours a hybrid weighting scheme as the best way of analysing between-country inequality.
3. Sala-í-Martín (2002) uses national quintile distributions assuming no variance within quintiles and ignoring the increased income inequality in most of Eastern Europe after the fall of communism – among other arbitrary assumptions (Milanovic, 2002a).
4. See Nissanke and Stein (2003) for a critical view on the effect of financial globalization on economic growth in emerging market economies.
5. See World Bank (2002) for a summary of these cross-country studies on the openness–growth link.
6. See Rodríguez and Rodrik (1999) for an excellent critical assessment of these cross-sectional studies.
7. See Thorbecke and Charumilind (2002) for a comprehensive review of this new political economy literature on the subject.
8. For an illustration of this growth–inequality relationship, see fig. 2 in Addison and Cornia (2001).
9. Dollar (2002) further reaffirms the strong positive causality from integration through growth to poverty reduction on the basis of the experiences of five countries (Bangladesh, India, Uganda, Vietnam and China) during the period 1992–8.
10. An early study by Ravallion and Chen (1997), estimates based on a sample of developing countries, the growth elasticity of poverty on average, as measured by the headcount ratio (the proportion of people living below the conventional US$1 a day poverty line) is around 3. Bourguignon (2002) reports an average growth elasticity of poverty of 1.6.
11. This and the following paragraphs are based on Thorbecke (2004).
12. While Berg and Krueger (2002) present a recent survey of mainstream literature on this topic, there have emerged many studies critical of the methodology used to establish these propositions (for example, Bourguignon, 2002; Galbraith and Kum, 2002).
13. Culpeper (2002) notes, however, that the World Bank's strategy of 'pro-poor growth' usually consists simply of: (i) growth-orientated economic policies *à la* the Washington Consensus; (ii) social investments in health and education; (iii) social safety nets that cannot take advantage of new opportunities created by economic growth. Indeed, these three components constitute the strategy adopted in the heavily indebted poor countries (HIPC) initiatives so far.
14. It is important to note here that, irrespective of which concept is used in discussing pro-poor growth, what is considered pro-poor critically depends on the choice of standards for poverty measurement – in particular, the shape of the distribution around the poverty line and the choice of poverty line (Grinspun, 2004).
15. If PEGR is larger than the actual growth rate, which occurs when the incomes of the poor grow more than the average income, then growth is pro-poor. If PEGR is equal or less than the actual growth rate, growth is said not to be pro-poor.

16. See Lopez (2004) for the debate on the trade-offs between pro-growth and pro-poor policies.
17. As Culpeper (2002) notes, international trade theories also predict a similar effect of factor mobility on inequality. Thus, in theory, we predict that globalization would increase inequality within developed countries but decrease inequality within developing countries.
18. Many mainstream economists argue that higher unemployment and greater poverty observed following trade openness are the direct results of pervasive labour market 'distortions' such as minimum wage legislation or imperfect labour mobility across sectors induced by these distortions.
19. Culpeper (2002) notes that technology can be either exogenous (and biased towards factors such as capital or skilled labour) or endogenous and responsive to relative factor abundance.
20. Known as the Lucas Paradox.
21. See Nissanke and Stein (2003) for more discussion on the nature of financial globalization.
22. Basu (2003) also notes that because of this de facto labour mobility, labour market policies of developing nations have become a matter of major concern in international fora and organizations, because working conditions in developing countries have effects on employment conditions in industrialized nations. Thus, with globalization, he argues, there is a need for international labour standards, set preferably by the ILO.
23. Relative cost advantages arising from technology differences are the basis of understanding the trade *patterns* and aggregate gains from trade in classical Ricardian trade theory. Easterly (2004) extends this theory to explain the observed income inequality as globalization proceeds. For the contemporary version of the Ricardian trade model and possible effects of technological innovation in China on global trade flows, see Samuelson (2004).
24. Concerns and anxieties have been raised about the effects of GM seeds on health, environment and other conditions affecting our life in the long run. Here, we do not take a particular position in this controversy, stating that it may still be too early to pass definitive judgement.
25. On the adoption experience in China and India, for example, see Pray *et al.* (2003).
26. Winters *et al.* (2004) stress that there can be no simple general conclusion about the relationship between trade liberalization and poverty, and the impact of trade liberalization on poverty. The outcome is very much context-specific, dependent on the environment in which it is carried out, including the policy design and implementation.
27. However, Sindzingre (Chapter 11 in this volume) suggests that globalization as a set of flows and policies is more likely to induce transformation on the aspects of institutions that are already experiencing rapid change (for example, formal political or economic rules) and less likely to affect slow-changing institutions such as social norms.
28. See Rodrik (2002, 2004, 2005) for the debate on the role of developmental state and institutions in this particular conjuncture.
29. This two-sector model of international trade can easily be extended to an *N*-sector model (for example, see Dornbusch *et al.*, 1977).
30. UNCTAD (2002, 2004) suggests a very close association between the 'commodity trap' and the 'poverty trap' (UNCTAD, 2004: 46).
31. Defining a poverty trap as a situation in which poverty has effects that act as the causes of poverty, Gore (2003) suggests that poverty traps exist at different levels

of aggregation – at the micro (household and community) level, the national level and the global level. At the global level, a country can get stuck in an international poverty trap, where the nature of the international economy and institutional structures that govern international relationships are implicated in the processes of circular causation of persistent poverty at household, community and national levels.

32. UNCTAD (2004) reports that the value of current global retail sales of coffee was about US$70 billion, of which producers received only US$5.5 billion.
33. Easterly (2003) also advances the hypothesis of an inverted U-shaped relationship between inequality and openness, measured as (*exports* + *imports*)/GDP), which would drive out the usual Kuznets curve between income and inequality, typically found in cross-country empirical studies. However, Easterly explains this in terms of the cross-country difference in factor endowments and trade openness – less open economies tend to export mainly natural resource-based commodities that are associated with inequality, while open economies export labour-intensive manufactures and services whereby inequality diminishes. However, as he admits, his hypothesis is based on a casual observation rather than a rigorous analysis.
34. In addition, Agénor (2002) refers to a separate output effect, through which trade liberalization may have an inverted J-curve effect on poverty. This is because trade liberalization produces first a decline in output and income because of a contraction in import competing industries, which could lead to an increase in poverty. However, such a decline is seen as temporary, as output is assumed to increase over time with an expansion of exports, which could attenuate poverty.

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Part II

The Globalization Openness–Growth–Inequality–Poverty Nexus and Channel

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3

The Relationship between Income Inequality, Poverty and Globalization

Almas Heshmati

Introduction

Globalization[1] has become the way to describe changes in international economy and in world politics. Economists define it as the free movement of goods, services, labour and capital across borders. Globalization is the result of reduced transportation and communication costs, lower trade barriers, faster communication, rising capital flows, increased competition, standardization and migration, to mention a few key causal factors. The process has brought the developed economies closer together and made them more strongly interrelated. In the new era of growing integration of economies and societies, individuals and corporations reach around the world further, faster and more economically than before. This subjects states and individuals to more intense developed market forces by causing rapid changes in trade relations, financial flows and the mobility of labour across the world. However, there is a large heterogeneity in the degree of the process of globalization over time and across countries and regions, as well as within countries across cohorts and skill groups. This heterogeneity causes disparity in development, especially with regard to negative effects such as rising inequality within and between countries, and points to the need to find the sources of disparity and to quantify its magnitude and impacts on the living conditions of the world population.

In recent years, theoretical research on the link between globalization and world inequality and poverty has been intense. However, comprehensive analysis of the link at the empirical level is scarce. Globalization generally is expected to reduce poverty through faster growth in more integrated economies. Extensive empirical research on the causal connections between globalization and inequality in developing nations during the pre-globalization phase showed that there was no structural relationship between growth and inequality, and income inequality levels were generally immobile and trendless. Despite the great importance placed on the globalization process, its sources, channels and consequences remain poorly understood. The channels through which globalization affects world inequality have been identified as commodity price equalization, factor price convergence, capital mobility and differentials in marginal products and rates of return of capital among countries, and dynamic convergence of per capita income growth.

The objective of this study is to investigate the usefulness of the two indices of globalization (Kearney, and principal component analysis based) to compare a large sample of industrialized, transition and developing countries on the basis of their integration in the world economy. The two indices are based on the countries' economic integration, personal contact, technology and political engagement. A decomposition of the indices into four distinct underlying components quantifies the individual factors' contribution to the integration. This attempt to analyse the very diverse aspects of globalization and subsequently the different channels through which it can have effects is a significant contribution to the existing analysis. In addition to investigating the international level of globalization, the indices are used for between- and within-region comparisons. The indices are expected to serve as useful tools in the evaluation of the impact of globalization on the welfare of nations and regions. They are used in regression analysis to study the causal relationship between income inequality, poverty and globalization.

The results suggest that the construction of an index, and its breakdown into several distinct components, would be useful. However, very little of the variance in inequality and poverty outcomes can be explained by the globalization that operates through the four channels discussed above. It is important to recognize what happens across the various channels at the country level and to understand their interaction.[2] For example, certain within-country factors such as institutions and weak governance structure seem to explain much of the variance. Therefore, initial endowments and how countries integrate into the international economy determine the distributional effects of globalization. Aggregate static measures such as the Gini coefficient fail to capture many of the distributional shifts that result from the opening of trade and capital markets. Graham (Chapter 10 in this volume) suggests that more disaggregated measures are needed to account for distributional shifts and phenomena such as the economics of happiness, which are not captured by money metric measures within cohorts and across skill groups and regions.

The rest of the chapter is organized as follows. In the next section the literature on the different perspectives of globalization, the links between globalization and inequality and poverty, and measures to reduce its negative impacts, are reviewed. Following this, the Kearney and principal component composite indices of globalization are introduced; the data are described; results based on variations in the two globalization indices, the ranking of countries and regions by the degree of globalization, and the development of globalization over time are discussed; then we look at the results from regression analyses of the impacts of globalization on income inequality and poverty, respectively. The final section summarizes the findings.

A brief review of the literature[3]

Globalization has its roots in the second half of the nineteenth century. The period 1870–2000 is classified into (i) the first wave of globalization 1870–1913; (ii) the de-globalization period of 1913–50; (iii) the golden age of 1950–73; and (iv) the second wave of globalization from 1973 onwards (see O'Rourke and Williamson, 2000; Maddison, 2001; O'Rourke, 2001; Williamson, 2002; World Bank, 2002). Empirical evidence shows that during the first wave of globalization, convergence in per capita income and real wages took place within the Atlantic economy. The de-globalization period is characterized by a widening disparity between the richest and poorest regions as well as within the Atlantic economy. The golden age was a period of rapid growth, relative stability and declining inequality. For more details, see also Solimano (2001).

A vast amount of literature on various aspects of the recent wave of globalization is developing. Several special issues on globalization have been published in *Oxford Development Studies, Journal of World-Systems Research* and the *Journal of African Economies*. Editorial introductions to these special issues are provided by Woods (1998); Manning (1999); Bata and Bergesen (2002a, 2002b); and Bevan and Fosu (2003). In addition, a number of books on the issue have been published. Dollar and Collier (2001) and the World Bank (2002) explore the relationship between globalization, growth and poverty; James (2002) analyses technology, globalization and poverty; Aghion and Williamson (1998) examine the relationship between globalization, growth and inequality; while Khan and Riskin (2001), focusing on history and policies, limit their study to developments in China. O'Rourke and Williamson (2000) look at the evolution of the nineteenth-century Atlantic economy, and Tausch and Herrmann (2002) analyse globalization and European integration.

In recent years, research on the link between globalization and world inequality has been intense. Economic growth has often been given priority as an anti-poverty measure, while the negative links between growth and inequality have been largely ignored by policy-makers. Cornia and Court (2001), in a policy brief covering the second wave of globalization, highlight several inequality-related issues. The negative impacts of inequality and several other factors are discussed in Birdsall (2000) and Stiglitz (1998). In their studies of the link between globalization and inequality, Lindert and Williamson

(2001) and O'Rourke (2001) state that increased world inequality has been driven by between-country rather than within-country inequality. Among other studies linking inequality and globalization are Talbot (2002), Babones (2002), Bata and Bergesen (2002a, 2002b), Beer and Boswell (2002), Bergesen and Bata (2002) and Bornschier (2002).

Agénor (2003) examines the extent to which globalization affects the poor in developing countries. The focus is on the channels through which trade openness and financial integration may have adverse effects on poverty. Collier and Dollar (2001) estimate that poverty in the developing countries will decline by about a half by 2015. In a comparison of actual aid allocation and poverty-efficient aid allocation, Collier and Dollar (2002) find that the level of poverty and the quality of policies do matter. The World Bank (2002) Development Research Group focuses on the impact of economic integration on the poor living in developing countries. In sum, economic integration has supported poverty reduction efforts, but inclusion should be improved (see also Dollar and Collier, 2001; Khan and Riskin, 2001). The World Bank Development Research Group presents a seven-point plan to help developing countries to take greater advantage of the benefits of globalization, and to manage the risks associated with their integration into the world economy.[4]

Yusuf (2003) lists a number of factors that are relevant as a source of growth to both poor and rich countries. These are labour, human capital, research and development (R&D) investment, technological progress and the increase in total factor productivity resulting from scale economies, agglomeration effects and externalities, as well as institutions that secure rights and minimize transaction costs. Concerning globalization in Africa, Ajayi (2003) reaches the conclusion that integration into the global economy alone does not enhance growth. Mussa (2003) gives an overview of the challenges faced by the international community because of globalization.

Globalization has other dimensions than just inequality and poverty. These produce different impacts and can be looked at from different perspectives. James (2002) analyses the causes of globalization in terms of transaction costs. Bhagwati (2000) focuses on trade and FDI, and suggests that appropriate governance is needed to manage globalization and the speed at which it must be pursued. La Porta *et al.*'s (1999) examination shows that from the perspective of promoting development, the performance and quality of governance across countries vary systematically. Milanovic (2002) shows that the effects of openness on income distribution depend on a country's initial income level. Seshanna and Decornez (2003) note that during the previous forty years the world economy has become wealthier, more globally integrated, but also more unequal and polarized. Mahler (2001) finds little evidence of a systematic relationship between any of the three main modes of economic globalization (trade, FDI, financial openness) and either the distribution of disposable income or earnings of households in developed countries.

Several studies address the wage links between globalization and inequality within a country. The effects of globalization on skill premium, unemployment and the social policies of countries are addressed by Ethier (2002). Miller (2001) demonstrates that globalization accounts for a significant increase in earnings inequality in the USA. Eckel (2003) shows that changes in relative wages are independent of wage rigidities, but wage inequality is affected by capital market integration. Manasse and Turrini (2001) study the effects of globalization on income inequality by looking at trade integration. In line with Sen (2002), Ravallion (2003) is concerned about the continuing deprivation and rising disparity in standards of living.

Countries need a number of measures to reduce the negative impact of the rapid globalization process, but the current system is incapable of dealing with the surfacing problems. Nayyar and Court (2002) identify ways in which the governance needs of the world economy and policy can be strengthened. Addison and Rahman (2002) identify the geographical characteristics, institutional and political factors, economic policy and history that can influence an individual country's capacity to globalize. Bordo *et al.* (1999) conclude that commercial and financial integration was more limited before. Chirathivat and Murshed (2001) argue that the domestic institutional capacities of Southeast Asia were inadequate to prevent the 1997/98 Asian economic crisis.

There is a link between exports and inequality. Calderón and Chong (2001) find that an increase in inequality is associated with the primary export countries, while a decreasing inequality is linked to manufacturing exporters. Despite increased inequality, Mayer (2001) finds that globalization has improved access to new technologies and provides unique opportunities for poor countries to raise their incomes, but that countries differ in technology upgrading and skill accumulation (see also Meyer, 1999). Despite the limitations of the existing literature, a majority of empirical studies concludes that the positive impacts of integration outweigh its negative effects.

A composite globalization index

Kearney and others (2002, 2003) is the first attempt to construct a database and to compute a composite globalization index. The index is composed of four major components – economic integration, personal contact, technology, and political engagement – each generated from a number of determinant variables; thirteen in total. The globalization index (hereafter denoted as KEARNEY) is based on the normalization of individual variables and the subsequent aggregation using an *ad hoc* weighting system as follows:

$$KEARNEY_{it} = \sum_{j=1}^{J}\sum_{m=1}^{M} \omega_{jm}\left\{(X_{jmit} - X_{jmt}^{\min})/(X_{jmt}^{\max} - X_{jmt}^{\min})\right\} \tag{3.1}$$

where i and t indicate country and time periods, m and j are within and between major component variables, ω_{jm} are the weights attached to each variable, min and max are minimum and maximum values of respective variables across countries in a given year. The index is similar to the commonly used human development index (HDI) which is based on educational attainment, life expectancy and real GDP per capita.[5]

In the calculation of the Kearney index, the component's weights are chosen on an *ad hoc* basis and are constant across countries and over time. We consider this index to be a benchmark index. In the basic index, each of the thirteen determinants of the index is given equal weight ($w = 1$). In the alternative case, a number of variables are given double weights ($w = 2$). Using a smaller set of countries, Lockwood (2004) finds the ranking of countries to be sensitive to the way the indicators are measured, normalized and weighted. There are two alternative approaches to the Kearney index for computing an index of globalization: using the principal component (Heshmati, 2003), or factor analysis (Andersen and Herbertsson, 2003).[6] Lockwood and Redoano (2005) present an overall index of globlization that measures the economic, social and political dimensions of globalization. The data cover an unbalanced panel data of countries observed during 1982–2001. This index has its own weaknesses, though the country coverage is wider, with a longer unbalanced time series and the social sub-index component is an extension to other globalization indices discussed above. In this study we adopt the principal component (PC) approach.[7] PC analysis is a multivariate technique for examining relationships within a set of variables consisting of several quantitative variables. Recently, Agénor (2003) used trade and financial openness to compute a simple economic globalization index based on PC analysis.

Given a dataset with p numeric variables, at most p principal components can be computed; each is a linear combination of the original variables with coefficients equal to the eigenvectors of the correlation of the covariance matrix. The principal components are sorted according to the descending order of the eigenvalues, which are equal to the variance of the components. PC analysis may be viewed as a way of uncovering approximate linear dependencies among variables. This method gives a least-squares solution to the following model:

$$Y = XB + E \tag{3.2}$$

where Y is an $n \times p$ matrix of the centred observed variables, X is the $n \times j$ matrix of scores of the first j principal components, B is a $j \times p$ matrix of eigenvectors, E is an $n \times p$ matrix of residuals, n is the number of observations, p the number of partial variables, and j the number of variables or indicators of globalization. Here we minimize the sum of all the squared residuals, which are measured as distances from the point to the (first) principal axis. In the least-squares case, the vertical distance to the fitted line is minimized.

The globalization indices indicate the level and progress of globalization for different countries over time. A breakdown of the index into major components provides the possibility of identifying the sources of globalization, and quantifying their impact on the integration of countries, and the index can be used to study the causal relationship between globalization, income inequality and poverty.

The data

The database created by Kearney and others (2002, 2003) in *Foreign Policy* magazine[8] is used for the computation of the globalization index. These data constitute a small, balanced panel covering sixty-two countries observed over the period 1995–2000, and were originally collected from national sources, international organizations and financial institutions. The data variables on economic integration, personal contacts, technology and political engagement are expected to proxy the channels through which globalization affects economic growth, inequality and the poverty of nations.

The data on economic integration consist of four variables: trade, FDI, portfolio capital flows, and income payments and receipts. All four variables are given as a share of GDP. The trade variable includes total trade and is measured as the sum of trade of goods and services. FDI is measured as an aggregate of inflows and outflows of FDI. Portfolio flows are measured as the sum of portfolio inflows and outflows. Income payments and receipts include the compensation of non-resident employees, and income earned and paid on assets held abroad.

The second component for personal contact consists of three variables: international telephone traffic, international travel and tourism, and transfer of payments and receipts. The variable for telephone traffic is defined as the per capita sum of incoming and outgoing calls. The variable for travel and tourism is defined as the share of travellers entering and leaving a country in relation to its population. The variable for transfers and payments is measured as the total of in- and out-transfer payments as a share of GDP.

The technology component builds on three variables: internet users, internet hosts and secure internet servers. This component is very much communication specific and is inadequate to reflect technology in a broad sense. The internet user variable is measured as a share of population, while internet hosts and secured servers are measured per capita.

The last component, political engagement, is based on three variables which include the number of embassies in a country, the number of memberships in international organizations, and the number of UN Security Council missions undertaken during a calendar year.

Table 3.1 Summary statistics, globalization data, 1995–2000 (NT = 62 × 6 = 372 observations)

Variable	**Mean**	**Median**	**Std dev**	**Minimum**	**Maximum**
A Economic integration					
Trade ($w = 1$)	0.777	0.6750	0.505	0.157	3.475
Foreign direct investment ($w = 2$)	0.043	0.0285	0.050	0.000	0.331
Portfolio investment ($w = 2$)	0.057	0.0229	0.150	0.000	1.669
Income payments and receipts ($w = 1$)	0.090	0.0604	0.099	0.005	0.782
B Personal contacts					
International telephone traffic ($w = 2$)	97.432	44.245	128.910	0.900	707.460
International travel and tourism ($w = 1$)	0.806	0.348	1.056	0.003	6.361
Transfer payments and receipts ($w = 1$)	0.033	0.027	0.030	0.000	0.150
C Technology					
Internet users ($w = 2$)	0.064	0.018	0.101	0.000	0.594
Internet hosts ($w = 1$)	0.013	0.002	0.027	0.000	0.295
Secure internet servers ($w = 1$)	0.011	0.001	0.029	0.000	0.283
D Political engagements					
Embassies in country ($w = 1$)	71.613	68.500	34.197	13.000	172.000
Membership in international organizations ($w = 1$)	48.806	47.800	10.382	6.000	77.000
Participation in UNSC missions ($w = 1$)	0.251	0.222	0.205	0.000	0.778
E Income inequality measures ($n1 = n2 = 60$)					
Gini from most recent year	38.349	36.670	9.218	23.702	59.000
Mean multiple period Gini	38.342	36.580	9.326	21.990	60.690
F Poverty measures ($n1 = 29$, $n2 = n3 = 38$ and $n4 = 59$)					
Percentage population below poverty line	28.348	28.600	14.281	4.600	64.000
Percentage population below US$1 per day	12.826	6.350	18.269	2.000	82.200
Percentage population below US$2 per day	31.853	24.050	27.997	2.000	96.400
Share of 20 per cent poorest of national income and consumption	6.583	6.900	2.219	1.400	10.600
G Kearney globalization indices					
Unweighted Kearney index (*K*)	2.980	2.437	1.420	1.069	7.978
Weighted Kearney index (*KW*)	3.646	2.825	2.035	1.168	11.055
H Principal component globalization indices					
First principal component (*PC1*)	1.029	0.598	1.000	0.000	6.279
Second principal component	4.279	4.375	1.000	0.000	8.832
Third principal component	6.810	6.853	1.000	0.000	10.530
Weighted first three *PC* (*PCW*) index	2.945	2.808	0.636	1.613	5.238

Notes: w = weights. UNSC = United Nations Security Council. NT = number of (observations) total.

The supplementary data include population and GDP variables used for normalization purposes. For summary statistics of the variables, see Table 3.1, where we can observe large variations in the variables underlying the calculation of the index and its components. The distribution of the index components (not reported here) is not uniform. This is particularly evident in the case of the technology component, which indicates large dispersion and with the sample mean significantly higher than the median. In the case of the political component, the mean and median values overlap. The range of principal component-based indices differs from those of Kearney-based indices.

Correlation coefficients among the various index components are presented in Table 3.2. As expected, the various components are positively and mostly significantly correlated among themselves. The economic integration component is negatively correlated over time, while technology is positively correlated with time. The remaining personal and political components as well as the two Kearney globalization indices are not correlated with time. The economic integration consists of four variables, defined largely by trade and capital flows. There was a major East Asian financial crisis in 1997/8 and a crisis in the emerging Russian and Brazilian markets in 1998. These resulted in a major decline in capital flows to the emerging-market countries as well as high volatility in the East Asian financial markets. This could well explain the negative correlation between economic integration and time trend.[9]

The application of different weights does not change the rank of the countries much. The overall Kearney index is dominated by political and economic integration. We have not decomposed the principal component index into its underlying four components. Such decomposition would require, first, the application of PC analysis on each component separately, and then the aggregation of the components into a single globalization index by assigning some weights to each component, or, alternatively, the use of canonical correlation analysis looking at the correlation relationship between two or more sets of variables.

Table 3.2 Pearson correlation coefficients (NT = 372)

	Year	**Economic**	**Personal**	**Technology**	**Political**	***K***	***KW***	***PC*1**	***PCW***
Year	1.0000								
Economic	−0.1380	1.0000							
	0.0076								
Personal	0.0399	0.5871	1.0000						
	0.4423	0.0001							
Technology	0.1150	0.2906	0.3446	1.0000					
	0.0265	0.0001	0.0001						
Political	0.0046	0.0312	0.0243	0.3952	1.0000				
	0.9282	0.5475	0.6403	0.0001					
K	0.0010	0.7119	0.6840	0.7576	0.5523	1.0000			
	0.9832	0.0001	0.0001	0.0001	0.0001				
KW	−0.0082	0.7630	0.6863	0.7550	0.4738	0.9909	1.0000		
	0.8746	0.0001	0.0001	0.0001	0.0001	0.0001			
*PC*1	0.2946	0.6395	0.6327	0.7127	0.3947	0.8774	0.8842	1.0000	
	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001		
PCW	0.2314	0.3759	0.3313	0.6712	0.7975	0.8156	0.7840	0.8392	1.0000
	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0000	

Notes: *K* = unweighted Kearney index; *KW* = weighted Kearney index; *PC*1 = unweighted (first) principal component index; *PCW* = weighted principal component index based on the first three principal components. *p*-values are given under the coefficients. NT = number of (observations) total.

Variations in the globalization index

The Kearney and principal component indices of globalization are computed for each of the sixty-two countries and for six years of observation. A weighted principal component index is obtained by aggregating the first three principal components, where in the aggregation their normalized contribution to the explanation of the total variance is used as weight.[10] Following Kearney's approach, a number of economic, personal and technology factors are given higher weights. For a sensitivity analysis, the Kearney index as a benchmark model is also computed with equal weights. The summary statistics of the index components are given at the bottom of Table 3.1.

Table 3.2 reports the correlation coefficients for the different indices and their components. The economic component is decreasing (−0.14) over time, while technology shows an increasing trend (0.12). The personal and economic components are highly correlated (0.59). Unlike the Kearney indices, the first (*PC*1) and weighted first three principal component (*PCW*) indices indicate that the globalization process is increasing over time (0.24 and 0.29, respectively). The within-group correlation among the two Kearney indices is high (0.99), as well as among the two *PC* indices (0.84). The between index group correlation coefficients are also quite high (0.77–0.88). The numbers in parenthesis are the respective correlation coefficients.

Ranking countries by the level of globalization

The mean of the four globalization indices by country, together with the period mean Gini coefficient and most recent years of Gini coefficient, is reported in Table 3.3. The countries are ranked in the descending order of the first principal component index. However, for comparison, the rank numbers by the weighted Kearney index are also given in the same table. The rank of countries according to the degree of globalization differs somewhat, depending on the computation method chosen. The ranking position of the least globalized countries is higher than that of the most globalized ones.

The results based on the first principal component show that Uganda, Iran and Morocco rank as the three least globalized countries, versus Ireland, Singapore and Switzerland which are ranked as the most advanced in terms of globalization. Slovenia, the Slovak Republic and Nigeria are among the average countries with regard to globalization. Internal and external conflicts seem effectively to reduce the globalization process of the low-ranking countries by affecting their economic and technology components negatively. With few exceptions, the high-ranking countries share similar patterns in the distribution of the various components, but several exceptions

Table 3.3 Globalization index by country, ranked by the first principal component (*PC*1)

Rank 1	Country	Economy	Personality	Technology	Political	*K*	Rank 2	*KW*	*PC*1	*PCW*	*Gini*	*mgini*
1	Ireland	2.477	1.899	0.560	1.510	6.446	1	8.643	3.726	3.887	36.962	36.80
2	Singapore	2.729	1.551	0.920	0.734	5.935	2	8.575	3.181	3.197	38.115	42.49
3	Switzerland	1.545	1.746	0.999	1.689	5.979	3	8.137	3.050	3.996	33.100	33.20
4	Sweden	1.444	0.900	1.346	2.178	5.868	4	7.941	2.735	4.074	33.663	38.14
5	Netherlands	1.892	0.927	0.807	1.577	5.202	6	7.125	2.506	3.725	32.200	32.10
6	Canada	0.872	0.825	1.467	2.434	5.598	5	7.170	2.456	4.101	30.050	30.83
7	USA	0.436	0.275	2.400	2.531	5.641	8	6.739	2.391	4.299	40.425	38.65
8	Norway	0.874	0.836	1.699	1.685	5.094	7	6.881	2.289	3.615	39.422	30.74
9	Finland	0.790	0.731	1.752	1.818	5.091	9	6.586	2.260	3.682	31.500	29.33
10	Denmark	1.242	1.000	0.903	1.925	5.069	10	6.529	2.228	3.666	35.525	34.04
11	Austria	0.890	1.272	0.761	2.081	5.005	11	6.313	2.132	3.793	26.500	25.91
12	UK	1.265	0.545	0.736	2.181	4.727	12	6.030	2.011	4.012	37.275	30.87
13	New Zealand	0.603	0.699	1.311	1.144	3.757	13	4.913	1.681	3.081	30.335	45.61
14	Czech Republic	0.833	1.281	0.225	1.410	3.749	18	4.346	1.620	3.254	23.900	23.22
15	France	0.683	0.479	0.302	2.564	4.028	14	4.875	1.603	4.061	32.700	38.14
16	Germany	0.712	0.472	0.513	1.960	3.657	16	4.631	1.477	3.679	31.787	31.67
17	Australia	0.535	0.354	1.309	1.396	3.594	17	4.526	1.456	3.242	44.600	37.68
18	Panama	1.943	0.322	0.039	0.642	2.947	22	3.725	1.224	2.508	52.034	49.22
19	Portugal	0.883	1.008	0.335	1.404	3.630	15	4.641	1.199	2.990	35.600	36.26
20	Hungary	0.898	0.690	0.165	1.283	3.036	23	3.650	1.183	3.000	25.300	24.61
21	Malaysia	1.159	0.642	0.145	1.244	3.190	21	3.756	1.182	2.689	48.500	47.71
22	Spain	0.635	0.676	0.297	1.530	3.139	20	3.850	1.132	3.214	23.702	30.93
23	Italy	0.649	0.544	0.210	2.096	3.499	19	4.171	1.102	3.469	31.217	35.68
24	Israel	0.547	0.999	0.536	0.764	2.847	24	3.566	0.927	2.487	38.200	32.70
25	Poland	0.412	0.565	0.124	1.891	2.991	25	3.376	0.925	3.124	32.700	26.60
26	Chile	0.784	0.197	0.106	1.124	2.211	29	2.879	0.763	2.779	55.516	50.93
27	Japan	0.284	0.073	0.549	1.496	2.403	27	2.940	0.763	3.168	24.900	35.53
28	Argentina	0.473	0.091	0.056	1.981	2.600	26	3.024	0.743	3.225	46.660	51.79
29	Greece	0.223	0.861	0.154	1.278	2.515	28	2.919	0.697	2.807	32.700	41.56
30	Slovenia	0.510	0.490	0.514	0.500	2.014	37	2.618	0.670	2.239	29.690	25.66
31	Slovak Republic	0.631	0.412	0.209	0.875	2.127	38	2.576	0.653	2.378	23.709	21.99
32	Nigeria	0.617	0.305	0.001	1.653	2.576	32	2.781	0.618	2.804	50.300	43.20

Continued

Table 3.3 Continued

Rank 1	Country	Economy	Personality	Technology	Political	*K*	Rank 2	*KW*	*PC*1	*PCW*	*Gini*	*mgini*
33	Croatia	0.547	0.873	0.111	0.594	2.125	34	2.727	0.608	2.242	30.067	25.68
34	Russian Federation	0.322	0.090	0.032	2.168	2.613	30	2.801	0.585	3.190	39.575	34.14
35	Korea Republic	0.478	0.258	0.322	1.058	2.116	35	2.698	0.560	2.635	31.600	34.18
36	Mexico	0.550	0.235	0.041	1.122	1.947	40	2.340	0.520	2.750	51.978	51.08
37	Tunisia	0.441	0.507	0.005	1.288	2.241	39	2.407	0.510	2.598	40.410	44.92
38	Botswana	0.811	1.153	0.017	0.477	2.458	36	2.659	0.504	1.966	52.302	53.90
39	Venezuela	0.467	0.102	0.038	1.312	1.919	44	2.226	0.501	2.812	47.248	42.90
40	Philippines	0.802	0.161	0.013	0.876	1.852	49	2.172	0.464	2.454	47.900	46.94
41	Thailand	0.647	0.133	0.021	1.034	1.835	51	2.117	0.460	2.522	41.750	45.03
42	Indonesia	0.451	0.069	0.006	1.492	2.018	47	2.195	0.456	2.759	35.270	36.36
43	Egypt	0.242	0.496	0.005	1.904	2.647	33	2.747	0.447	2.946	28.900	33.72
44	China	0.393	0.043	0.009	1.577	2.022	42	2.289	0.412	2.887	40.300	29.35
45	Romania	0.345	0.303	0.044	1.207	1.899	50	2.128	0.404	2.623	36.378	26.38
46	Brazil	0.258	0.045	0.059	1.464	1.825	53	2.078	0.400	2.887	58.846	54.99
47	South Africa	0.507	0.123	0.145	0.985	1.759	45	2.215	0.393	2.607	59.000	54.89
48	Taiwan	0.530	0.372	0.427	0.010	1.339	55	1.977	0.382	1.766	31.700	33.04
49	India	0.166	0.215	0.004	1.697	2.082	46	2.208	0.362	2.898	35.457	34.55
50	Turkey	0.260	0.278	0.036	1.301	1.875	54	2.026	0.362	2.696	45.625	49.21
51	Pakistan	0.186	0.378	0.001	1.674	2.238	41	2.307	0.354	2.760	31.200	34.26
52	Saudi Arabia	0.518	0.959	0.009	0.979	2.464	31	2.799	0.347	2.308	–	–
53	Senegal	0.350	0.535	0.003	1.263	2.151	43	2.279	0.344	2.483	41.300	49.96
54	Colombia	0.347	0.133	0.031	0.962	1.472	59	1.770	0.297	2.592	57.100	51.79
55	Ukraine	0.349	0.240	0.010	1.033	1.632	60	1.766	0.278	2.353	32.941	28.43
56	Peru	0.342	0.159	0.021	0.899	1.422	61	1.668	0.274	2.527	49.006	49.46
57	Bangladesh	0.076	0.414	0.000	1.609	2.099	52	2.116	0.260	2.595	38.800	37.68
58	Kenya	0.196	0.495	0.003	1.459	2.153	48	2.173	0.255	2.511	51.000	60.69
59	Sri Lanka	0.406	0.597	0.006	0.721	1.730	56	1.872	0.178	2.138	34.400	40.40
60	Morocco	0.234	0.599	0.003	0.953	1.789	57	1.841	0.166	2.313	–	–
61	Iran	0.085	0.049	0.002	1.055	1.191	62	1.203	0.076	2.532	42.900	45.59
62	Uganda	0.221	0.824	0.001	0.619	1.664	58	1.799	0.036	2.008	39.200	37.19

Notes: *K* = unweighted Kearney index; *KW* = weighted Kearney index; *PC*1 = unweighted (first) principal component index; *PCW* = weighted principal component index based the first three principal components. Gini and *mgini* are the recent period and mean multiple period Gini coefficients. Rank 1 and Rank 2 are rank orders by *PC*1 and *KW*.

can be noted. Russia is allocated a very high political factor, which crucially affects its rank (34) and France, ranked 15, has the highest political factor. The same is true in the case of China which, despite its high political engagement, is ranked only 44. The mean unweighted Kearney index decomposed into sub-components by country is given in Figure 3.1. The mean of each of the four indices by country is shown in Figure 3.2. The position of the countries, with the exception of the weighted principal component index, is very similar. The difference in the latter is because of normalization prior to aggregation of the three principal components. The three principal components are shifted so that the minimum values are 0 and the sum of variances used as weights in the aggregation adds up to 1.

Ranking regions by the degree of globalization

The mean level of globalization by regions is presented in Table 3.4 and Figure 3.3. The ranking of regions differs depending on whether an identical or different weighting system for the Kearney index is applied, or whether only the first principal component or a weighted index of the first three principal components is used. As a result of attaching a higher weight to the technology factor, Latin America, with a relatively low technology component, shifts its position to a lower rank in favour of East Asia. Based on equal weights, the South Asian region is identified as the least advanced in terms of globalization, and its low level of globalization is very much determined by the absence of the technology factor. This picture is shared by sub-Saharan African, Middle East and North African regions. The ranking based on the first principal component is close to that of the Kearney-based weighted index.

The Eastern European and East Asian regions are identified at the medium level of globalization; however, the two regions differ according to index components. For example, East Asia has the advantage in technology transfer, while Eastern Europe enjoys better personal contacts. In terms of political engagements they are also different. East Asia shows high economic integration and technology transfer, but its level of globalization is limited by relatively low personal contacts and political engagements. The East European region shows progress in all four factors, but it has relatively low technology transfer. Western Europe[11] and Southeast Asia constitute the highest globalized economic and geographic regions. Economic integration for the Southeast Asian region is higher, while the remaining three components are higher in Western Europe. There is large heterogeneity in the globalization process of the countries belonging to these two regions.

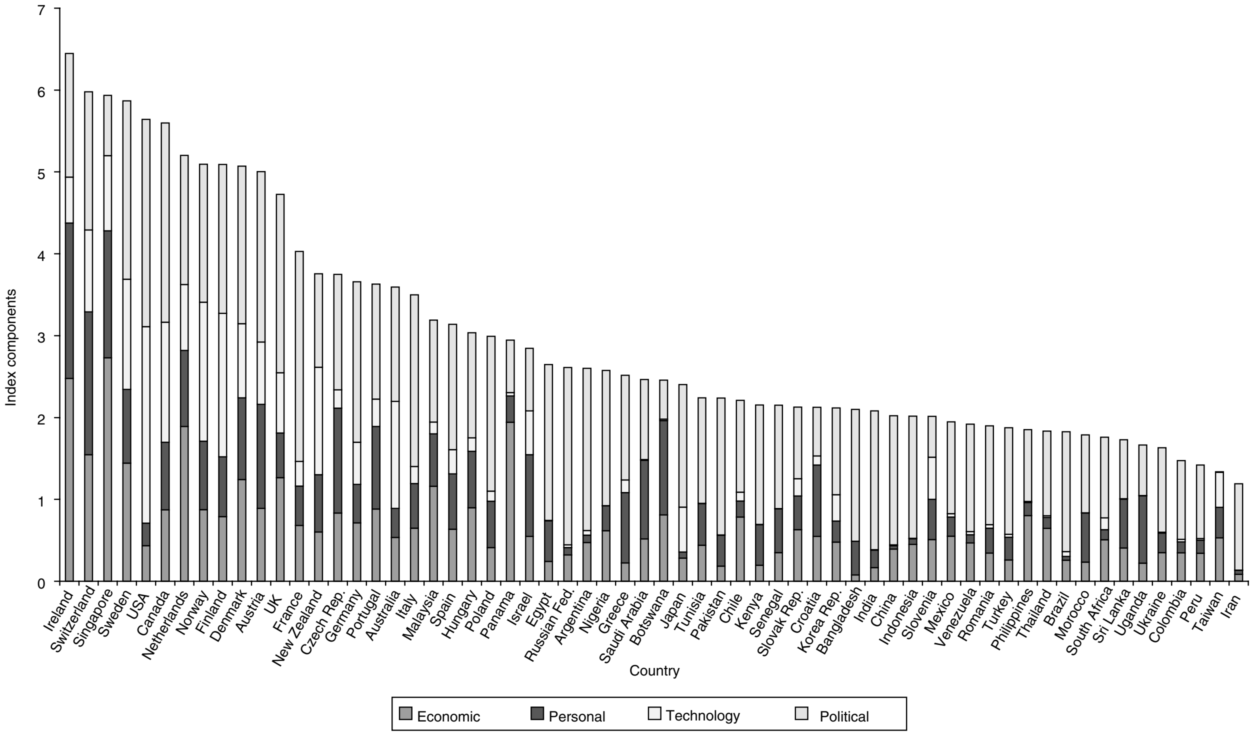

Figure 3.1 Unweighted Kearney globalization index (*K*) decomposed by its components

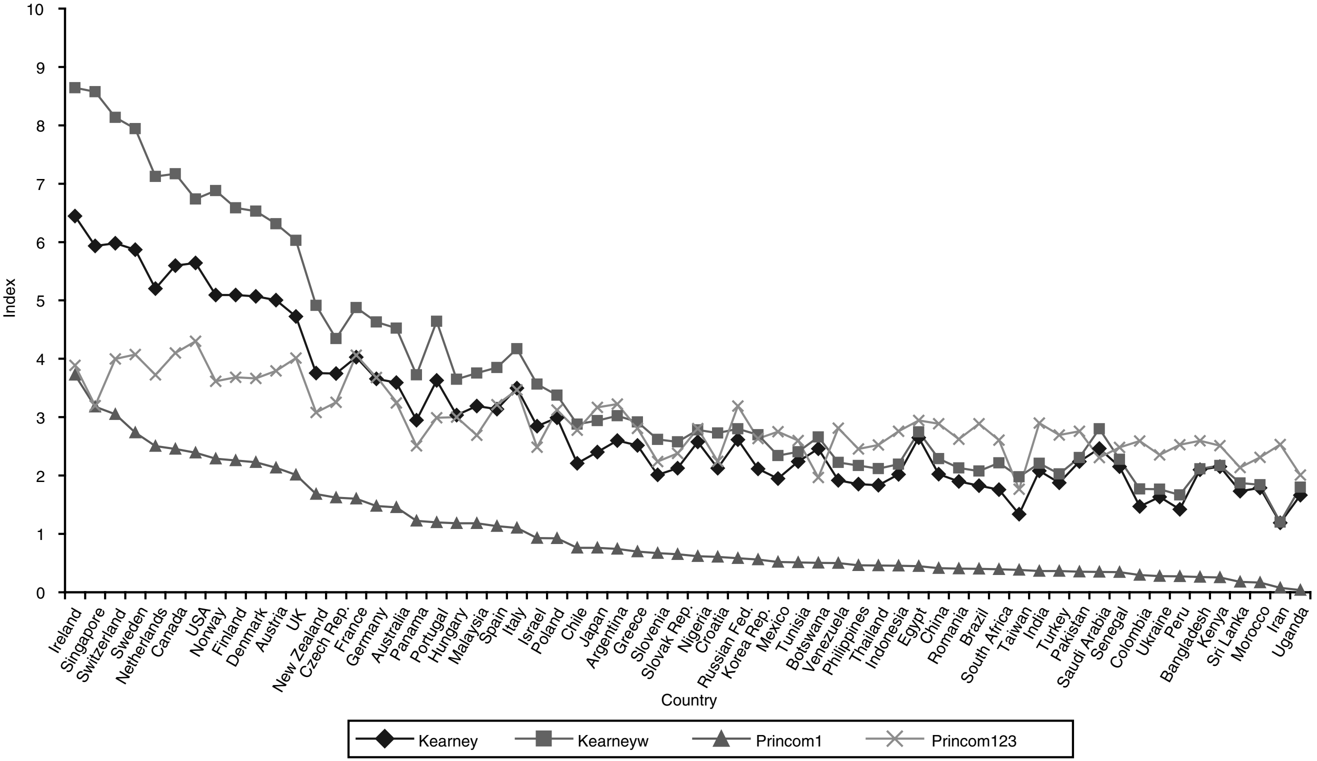

Figure 3.2 Globalization indices by country

Table 3.4 Globalization index by region, ranked in descending order of the first principal component index (NT = 372)

Region	Economic	Personal	Technology	Political	*K*	*KW*	*PC*1	*PCW*
Western Europe*	0.982	0.845	0.940	1.841	4.607	5.927	2.007	3.652
Southeast Asia	1.158	0.511	0.221	1.076	2.966	3.763	1.149	2.724
Eastern Europe	0.539	0.549	0.159	1.218	2.465	2.887	0.770	2.712
Latin America	0.645	0.161	0.049	1.188	2.043	2.464	0.590	2.760
East Asia	0.421	0.167	0.327	1.035	1.970	2.947	0.529	2.614
Middle East & North Africa	0.374	0.640	0.099	1.198	2.311	2.564	0.460	2.558
Sub-Saharan Africa	0.450	0.572	0.028	1.076	2.127	2.318	0.359	2.396
South Asia	0.184	0.331	0.003	1.351	1.868	1.941	0.246	2.585

Note: * Equivalent of industrialized countries. It includes Western Europe and Australia, New Zealand, USA and Canada.

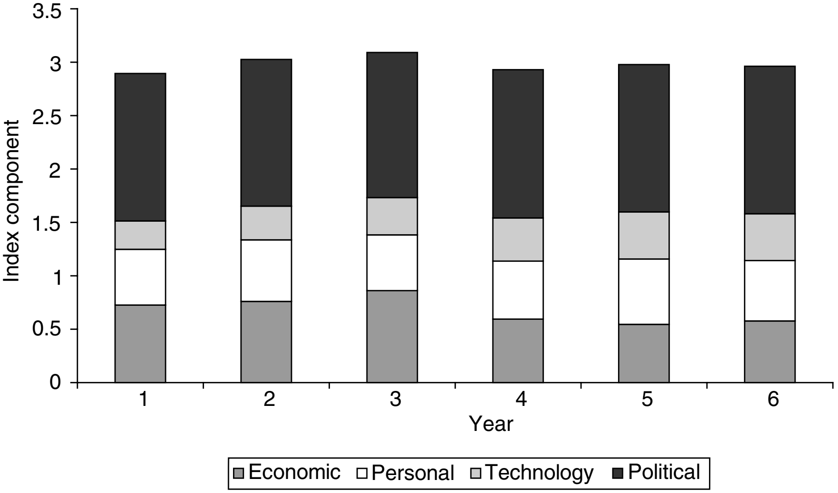

Figure 3.3 Development of unweighted Kearney index of globalization (*K*) over time

The development of globalization over time

The mean indices and their components (based on the unweighted Kearney index) for each year of observation from 1995 to 2000 are reported in Table 3.5 and Figure 3.4. Ideally, this should be weighted by the countries' share of GDP or population to provide a more accurate picture of the temporal changes in the globalization process. Despite the short period, it does provide a partial picture of the development of globalization. In terms of total GDP, size of population and total volume of trade, the small sample provides a satisfactory survey of the coverage of globalization.

Unweighted economic integration increased during 1995–7, from 0.73 to 0.86. It declined sharply to 0.60 in 1998 and remained below this level until

Table 3.5 Development of globalization index over time (NT = 372)

Year	Economic	Personal	Technology	Political	*K*	*KW*	*PC*1	*PCW*
1995	0.726	0.522	0.266	1.380	2.893	3.546	0.689	2.767
1996	0.760	0.576	0.316	1.374	3.026	3.725	0.749	2.815
1997	0.861	0.522	0.349	1.359	3.091	3.841	0.872	2.869
1998	0.595	0.543	0.404	1.388	2.929	3.553	1.050	2.945
1999	0.545	0.612	0.441	1.380	2.978	3.595	1.264	3.079
2000	0.577	0.566	0.438	1.381	2.961	3.614	1.550	3.179

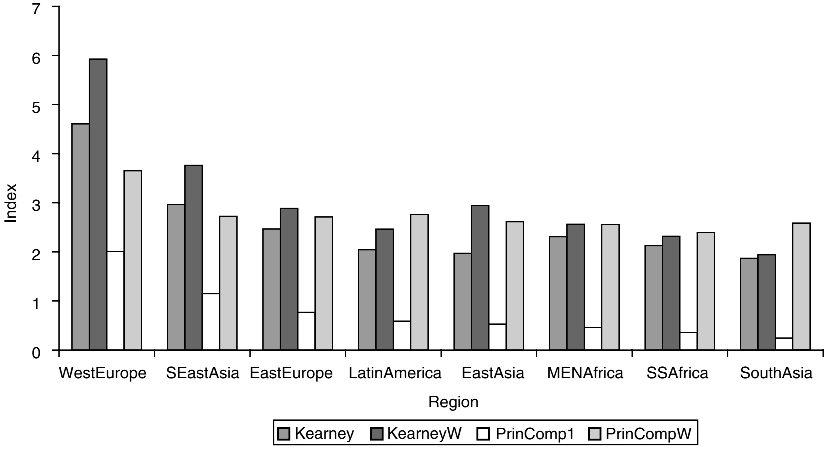

Figure 3.4 Globalization indices by regions

2000. The decline is a consequence of the emerging markets and the East Asian financial crisis. The two principal component indices increased continuously over time – these are preferred as they are not restricted by assumption of the same weights or arbitrarily chosen weights. The technology component increased continuously from 0.27 to 0.44. The political component is constant over time and, as expected, it does not change over a short period. The average annual changes in index components and composite indices are reported in Table 3.6. Here, the changes are based on annual means, neglecting the between-country variation. The between-country variation is quite high as a share of the total variation. Because of the increasing patterns of the technology component and the principal component indices over time, their temporal percentage changes are all positive.

A comparison to previous results

A number of factors distinguish this study from those undertaken previously. First, unlike earlier studies, which are often based on trade only to proxy globalization, our analysis is based on a general index of globalization that

Table 3.6 Percentage change in globalization index over time (NT = 372)

Year	Economic	Personal	Technology	Political	*K*	*KW*	*PC*1	*PCW*
1995/6	10.07	18.80	63.45	−0.02	5.43	6.15	8.56	1.73
1996/7	16.93	−8.05	31.21	−0.33	2.53	3.77	22.85	1.88
1997/8	−28.19	3.27	55.97	2.20	−5.23	−7.17	18.18	2.40
1998/9	−9.41	16.96	52.00	0.67	1.82	0.80	16.94	4.14
1999/2000	9.06	−6.79	29.17	0.62	−0.55	0.41	21.32	3.32

Notes: *K* = unweighted Kearney index; *KW* = weighted Kearney index; *PC*1 = unweighted (first) principal component index; *PCW* = weighted principal component index based the first three principal components.

covers various aspects of changes in international economy, technology transfer and world politics. Thus it captures better the free movement of goods, services, technology, labour, capital and politics across borders and over time, that result from lower transportation costs, lower trade barriers, faster communication technologies, competition and standardizations. Second, the time period is very short and covers only the last years of the second wave of globalization. Third, the number of countries is limited by data availability.

Despite the limitations of country and time coverage, our results provide a clear picture of the heterogeneity in the process of globalization during its recent revival phase, disparity in development and its possible impact on rising inequality between and within countries and regions over time. Before turning to the regression analysis, we note that in some studies there are indications that globalization has reduced poverty in several integrated economies through faster growth. In our sample and period, there is a pattern of globalized countries having experienced high growth and reduced poverty. But, inequality can also be linked to poor governance, infrastructure, institutions, taxes and redistribution policies in lagging countries rather than to fast growth and their degree of globalization.

The impact of globalization on income inequality

Specification of the relationship

Income inequality from a country perspective may depend on a number of internal and external factors, with globalization being one of the latter. The link between globalization, income inequality and growth has been the focus of much research attention for some years. However, with the exception of a partial view in studies such as Mahler (2001) and Agénor (2003) who looked at the relationship between inequality and the economic components of globalization (trade, FDI and financial openness), the lack of a globalization index has not allowed the relationship to be statistically estimated and tested. In this section we aim to address this by means of regression analysis:

$$GINI_i = \alpha_0 + \alpha_1 GINDEX_i + \sum_{j=1}^{J} \gamma_j REGION_{ji} + u_i \tag{3.3}$$

where *GINI* and *GINDEX* refer to the Gini coefficient and globalization index, *REGION* is a *J* vector of regional dummies, *u* an error term and the subscript *i* refers to a country. Since the two datasets (Kearney and the World Income Inequality Database – WIID) do not fully overlap, we are forced to use a cross-sectional approach as a second best alternative in establishing the inequality–globalization relationship. The Kearney database covers the period 1995–2000, while WIID covers the period before 1998. The former is a balanced panel data of sixty-two countries, while in the other 146 countries are observed non-consecutively on an irregular basis.

The Gini coefficient is a standard measure of income inequality obtained from WIID. It is given as a mean of multiple observations for a given country in a given year. The multiplicity of observations is because of the different definitions of income, area coverage and units of measurement. It is defined here in two different ways. First, the most recent observation (1996–8) is used in the cross-sectional regression analysis; a number of countries (sixteen) were observed prior to 1995. For the second definition, instead of the last year of observation, we use the mean Gini by country for all years that a country is observed. For summary statistics of the inequality variables, see Table 3.1.

The globalization index is defined in four ways: the unweighted and weighted Kearney and principal component indices. In the unweighted Kearney case, all thirteen indicators are given identical weights ($w = 1$). In order to avoid the strong assumption of equal weights, a number of factors in the weighted Kearney case are given double weights ($w = 2$) on an *ad hoc* basis. The unequally weighted factors are FDI, portfolio investment, international telephone traffic, and internet users. The unweighted principal component index is based on the first principal component of the same thirteen indicators, while the weighted index is based on the weighted average of the first three principal components.

Correlation between globalization, inequality and poverty

Correlation among the different unweighted components of the Kearney globalization index and the different aggregate globalization indices are reported in Table 3.7. Calculations here are based on cross-sectional data obtained as multiple period means to be used in the regression analysis. The correlation coefficients and their significance are very similar to those based on the non-averaged individual observation reported in Table 3.2. All coefficients are positive and significantly different from zero, indicating a positive

Table 3.7 Pearson correlation coefficients (N = 60)

	Economic	**Personal**	**Technology**	**Political**	***K***	***KW***	***PC1***	***PCW***	***Gini***	***mgini***	***PBPL***	***PB$1***	***PB$2***	***IS20***
Economic	1.000													
Personal	0.648	1.000												
	0.001													
Technology	0.365	0.350	1.000											
	0.003	0.005												
Political	0.039	0.024	0.407	1.000										
	0.762	0.851	0.001											
Kearney(*K*)	0.729	0.690	0.782	0.562	1.000									
	0.001	0.001	0.001	0.001										
Kearneyw(*KW*)	0.774	0.698	0.786	0.487	0.992	1.000								
	0.001	0.001	0.001	0.001	0.001									
princom1(*PC1*)	0.803	0.689	0.765	0.452	0.978	0.989	1.000							
	0.001	0.001	0.001	0.001	0.001	0.001								
princomp(*PCW*)	0.444	0.332	0.689	0.852	0.859	0.828	0.820	1.000						
	0.001	0.008	0.001	0.001	0.001	0.001	0.001							
Gini	−0.065	−0.373	−0.267	−0.224	−0.326	−0.314	−0.302	−0.289	1.000					
	0.619	0.003	0.038	0.084	0.011	0.014	0.018	0.024						
mgini	−0.082	−0.298	−0.273	−0.208	−0.305	−0.298	−0.292	−0.279	0.841	1.000				
	0.530	0.020	0.034	0.110	0.017	0.020	0.023	0.030	0.001					
PBPL	−0.148	0.032	−0.302	−0.216	−0.314	−0.322	−0.329	−0.337	0.202	0.211	1.000			
	0.440	0.868	0.110	0.258	0.096	0.088	0.081	0.073	0.300	0.281				
PB$1	−0.210	0.056	−0.345	0.041	−0.135	−0.220	−0.323	−0.208	0.189	0.146	0.511	1.000		
	0.204	0.737	0.033	0.803	0.415	0.183	0.047	0.208	0.261	0.387	0.005			
PB$2	−0.369	−0.103	−0.574	0.206	−0.247	−0.392	−0.505	−0.184	0.117	0.162	0.455	0.831	1.000	
	0.022	0.537	0.001	0.212	0.133	0.014	0.001	0.266	0.490	0.335	0.014	0.001		
IS20	−0.037	0.262	0.239	0.214	0.234	0.216	0.195	0.199	−0.850	−0.760	−0.102	−0.093	0.019	1.000
	0.777	0.044	0.067	0.102	0.074	0.099	0.137	0.129	0.001	0.001	0.604	0.578	0.908	

Notes: *p*-values are given under the coefficients. *K* and *KW* are unweighted and weighted Kearney globalization indices. *PC*1 and *PCW* are the unweighted (first) and weighted (first three) principal component globalization indices. *Gini* and *mgini* are the recent period and mean multiple period Gini coefficients. *PBPL* is percentage of population below national poverty line, *PB$1* is percentage of population below $1 per day, *PB$1* is percentage of population below $2 per day, and *IS20* is share of 20 per cent poorest of national income or consumption.

within- and between-group correlation among the indices and their decomposition. An exception is insignificant correlation of the political component with the economic and personal components. In general, the correlation among the aggregate indices is stronger (0.82 to 0.99) than the correlation among the disaggregated four index components (0.35 to 0.65). The correlation between the components of the two groups varies in the interval of 0.33 to 0.85.

The correlation between globalization, income inequality and poverty indices, based on the over-time mean values, is also reported in Table 3.7. The two Gini coefficients are highly correlated with each other (0.84). They are negatively correlated (−0.27 to −0.37) with the personal and technology components, negatively and weakly correlated with political component but uncorrelated with the economic component. The same negative but statistically significant relationship holds between inequality and the aggregate globalization indices (−0.28 to −0.33).

The poverty measures representing the percentage of the population below the national poverty line of less than US$1 and less than US$2 per day, are positively correlated with each other (0.45 to 0.83). However, none of these three measures is correlated with the fourth measure, which is based on the share of the poor in the lowest 20 per cent of national income or consumption. The first three poverty measures are uncorrelated with inequality, while the last measure is negatively correlated (−0.76 to −0.85). Increased inequality is more damaging to the poorest 20 per cent of the population. Regarding the correlation between our four poverty measures and four globalization indices, the results show that globalization reduces poverty (−0.31 to −0.50) and increases (0.22 to 0.23) the share of the poorest 20 per cent of national income or consumption, thereby also reducing inequality. The declining poverty is mainly associated with the technology and personal components of globalization.

Estimation results

The estimation results from a regression of the Gini coefficient on the unweighted Kearney globalization index, when Gini is defined as the most recent year of observation, are reported in Table 3.8. Results based on an alternative definition, where Gini is defined as mean income inequality over time, are reported in Table 3.9. Regression results from the two Gini measures on the unweighted (first) principal component measure of globalization are presented in Table 3.10. Results based on the weighted first three principal components are not reported here because of limited space.

It is worth mentioning that, since we use cross-sectional regression analysis, it has not been possible to identify the unobservable country-specific effects. However, in addition to the globalization index we have added a number of dummy variables to represent the unobservable regional effects. These capture regional heterogeneity in income inequality.

Table 3.8 Least squares parameter estimates of the impact of the Kearney globalization index on the most recent years of income inequality (*Gini*)

Explanatory variables	**Unweighted Kearney globalization index (*K*)**								**Weighted Kearney (*KW*)**	
	Model A1	**Model A2**	**Model A3**	**Model A4**	**Model A5**	**Model A6**	**Model A7**	**Model A8**	**Model A9**	**Model A10**
Intercept	45.8642*	37.5410*	34.2443*	34.9793*	38.4699*	33.4670*	34.1586*	32.4668*	45.2898*	39.4501*
Log K globalization index	−7.4923*					–	−0.6478****	–	–	–
Log KW globalization index						–	–	–	−6.9937*	−3.4690
Log economic integration		−1.2966****				3.7486**	–	2.1313	–	–
Log personal contact			−4.2817*			−4.5780*	–	−3.3735*	–	–
Log technology				−1.3914*	−1.2066**	–	0.9879***	–	–	
Log political engagement					−0.6328****	−0.4883****	–	0.3044****	–	–
Middle East + North Africa						–	4.6848****	9.3241*	–	3.4092****
East Asia						–	0.7517****	0.1785****	–	−5.8351****
Southeast Asia						–	8.7789*	8.5782*	–	7.5161**
South Asia						–	2.7820	8.1049**	–	0.8502****
Latin America						–	18.5843*	17.5835*	–	13.2485*
Sub-Saharan Africa						–	15.1725*	21.0475*	–	12.7544*
East Europe						–	−3.1218****	−1.0605****	–	−9.1353*
Industrialized countries (reference)						–	–	–	–	–
R-square adjusted	0.1119	−0.0068	0.1804	0.0998	−0.0145	0.2274	0.6381	0.6834	0.0952	0.6870
F-value	8.4300*	0.6000****	13.9800*	7.5400*	0.1500****	5.3400*	14.000*	12.5800*	7.2000*	17.1900*
RMSE	8.6873	9.2495	8.3457	8.7460	9.2851	8.1027	5.5458	5.1870	8.7734	5.1599
Number of observations	60	60	60	60	60	69	60	60	60	60

Notes: Significant at less than 1% (*), 1–5% (**), 5–10% (***); and greater than 10% (****) level of significance. The square of weighted and unweighted Kearney globalization indices in Models A1 and A9 are insignificant, indicating the absence of a U-shaped relationship between inequality and globalization. RMSE is root mean square error.

Table 3.9 Least squares parameter estimates of the impacts of unweighted Kearney globalization index (*K*) on period's mean income inequality (*mgini*)

Explanatory variables	Model B1	Model B2	Model B3	Model B4	Model B5	Model B6	Model B7	Model B8
Intercept	45.3279*	37.0677*	35.1122*	34.7682*	38.4625*	33.7618*	40.4570*	34.4889*
Log K globalization index	−6.9450*					–	−3.9352****	–
Log economic integration		−2.0444****				2.0001****	–	−0.9609****
Log personal contact			−3.3687*			−2.8938**	–	−1.5141****
Log technology				−1.4755*		−1.2950**	–	0.5202****
Log political engagement					−0.6325****	−0.4388****	–	−0.7727****
Middle East + North Africa						–	3.0800****	5.6964***
East Asia						–	−5.9775****	−5.7022****
Southeast Asia						–	7.0789**	8.8086*
South Asia						–	0.4034****	2.7974****
Latin America						–	12.5126*	13.8832*
Sub-Saharan Africa						–	12.5341*	16.1924*
East Europe						–	−10.7333*	−8.8150*
Industrialized countries (reference)						–	–	–
R-square adjusted	0.0918	0.0082	0.1023	0.1114	−0.0146	0.1303	0.7129	0.7082
F-value	6.9600*	1.4900****	7.7200*	8.4000*	0.1500****	3.2100**	19.3200*	14.0200*
RMSE	8.8877	9.2877	8.8363	8.7912	9.3939	8.6974	4.9966	5.0377
Number of observations	60	60	60	60	60	60	60	60

Notes: Significant at less than 1% (*), 1–5% (**), 5–10% (***), and greater than 10% (****) level of significance. The square of the unweighted Kearney globalization index *(K)* in Model B1 is insignificant indicating absence of U-shaped relationship between inequality and globalization. RMSE is root mean square error.

Table 3.10 Least squares parameter estimates of the impact of the first principal component globalization index (*PC*1) on income inequality

Explanatory variables	**Dependent variable is last year's Gini**			**Dependent variable is multiple period mean Gini**		
	Model C1	**Model C2**	**Model C3**	**Model C4**	**Model C5**	**Model C6**
Intercept	41.6658*	45.0123*	32.9088*	41.5862*	45.3190*	37.1401*
PC1 globalization index	−3.1456**	−10.5145**	0.2568****	−3.0770**	−11.2968**	−1.2632****
Squared PC1 globalization Index	–	2.3479***	–	–	2.6190***	–
Middle East & North Africa	–	–	5.4308****	–	–	3.7066****
East Asia	–	–	1.7087****	–	–	−4.3802****
Southeast Asia	–	–	9.3033*	–	–	8.0168*
South Asia	–	–	3.7795****	–	–	1.6664****
Latin America	–	–	19.4381*	–	–	13.8757*
sub-Saharan Africa	–	–	16.0495*	–	–	13.2845*
East Europe	–	–	−2.4331****	–	–	−9.8667*
Industrialized countries (reference)	–	–	–	–	–	–
R-square adjusted	0.0758	0.1030	0.6380	0.0697	0.1063	0.7053
F-value	5.8400**	4.3900**	14.0000*	5.4200**	4.5100**	18.6500*
RMSE	8.8622	8.7305	5.5466	8.9951	8.8166	5.0630
Number of observations	60	60	60	60	60	60

Note: Significant at less than 1% (*), 1–5% (**), 5–10% (***), and greater than 10% (****) level of significance.

For sensitivity analysis, a number of alternative specifications of the simple relationship (Equation (3.3)) are estimated. In the basic model in Table 3.8 (Model A1) the between-country variations in income inequality are explained by an aggregate unweighted Kearney globalization index. The coefficient is negative and statistically highly significant. It indicates a negative relationship between the level of globalization and income inequality. The same relationship applies when globalization is differently weighted (Model A9). However, globalization explains only 11 per cent of the variations in income inequality among the sixty countries.[12] This is in line with Lindert and Williamson (2001), who find the net impact of globalization to be too small to explain the long-term rise in world inequality. The inclusion of the squared globalization indices in Models A1 and A9 was insignificant, indicating the absence of a Kuznets U-shaped relationship between inequality and globalization.

Results from a decomposition of the unweighted Kearney globalization index into its four sub-components (Model A2 to A5 of Table 3.8) show that economic integration and political engagement individually do not explain any of the variations in income inequality.[13] However, simultaneous inclusion of the four components (Model A6) indicates that personal contacts and technology transfers reduce inequality, while economic integration increases inequality. Political engagement is found to have no significant effect. Personal contact is the single component that contributes the most to the explanation of inequality variations as well as to its reduction. To control for regional heterogeneity, we add a number of regional dummies. Accounting for regional heterogeneity (Model A7) captures most variations in inequality among the countries. The explanatory power of the model increases from 0.11 to 0.64. Similar results are obtained when the weighted globalization index is used (Model A10). However, the weighted globalization index turns out to be insignificant. It should be noted that there is a risk that regional inequality and globalization are correlated, biasing the effects of globalization on income inequality. This applies also to the case where both sub-components of globalization and regional effects are included (Model A8).

Regression results corresponding to Models A1 to A8, based on alternative definitions of income inequality, where the mean Gini coefficient over time is used, are reported in Table 3.9 and labelled as Models B1 to B8. The signs of coefficients, compared to the previous case, where Gini coefficient is from the most recently observed years, do not change. However, their significance and size change in a number of cases. The regional variables play an even more important role in the explanation of variation in income inequality.

In Table 3.10 we present regression results on the link between income inequality defined in two different ways, and globalization computed using the first principal component method. As in the previous cases, the results indicate a negative relationship between globalization and income inequality. The squared globalization index is positive and weakly significant (Models C2 and C5), indicating a U-shaped or declining negative relationship. The fit of the model is somewhat lower compared to the two Kearney-based indices. Adding regional dummies to the relation (Models C3 and C6) produces similar results in terms of signs, significance and the size of effects. Again, the globalization index turns out to be statistically insignificant when regional dummies are added to the model.

The results above suggest that the construction of the index and its decomposition are useful, although very little of the variance in inequality is explained by globalization operating through these four channels. Because of the cross-sectional nature of the data, we have not been able to control for country effects. However, what happens at country level across various channels is important. For example, within-country factors such as institutions and governance structure seem to explain the differences in the outcome. Therefore, initial endowment and a country's integration determine the distributional effects of globalization. The aggregate Gini coefficient fails to capture many distributional shifts that result from the opening of trade and capital markets. More disaggregated measures are needed to account for the distributional shifts within and between different population sub-groups and regions. Furthermore, the current data and study cannot distinguish between the effects from technology, trade or such demographic trends as the increased number of two high-skilled breadwinners and single, low-wage breadwinners at the top and bottom of the distribution scale. As suggested by Graham (Chapter 10 in this volume) and Nissanke and Thorbecke (Chapter 2 in this volume), it is important to conduct empirical studies to understand better the globalization–inequality–poverty nexus in a country-specific context.

Our results are in line with Mahler (2001). Using the Luxembourg Income Study database, Mahler finds little evidence of a systematic relationship between the three main modes of economic globalization – namely trade, outbound investment and financial openness – and either the distribution of disposable personal income or earnings of households. The overall conclusion is that economic integration does not lead systematically to increased income inequality across entire economies.

It is to be noted that the results presented here are primary. The results provide some initial support to the hypothesis of the existence of a (negative) relationship between inequality and globalization, but several essential improvements are still needed to confirm this finding.

Guidelines to construct a modified index

The index should take an axiomatic approach that sets out its desirable properties and provides a family of indices that fulfil such properties. The index should fully quantify globalization by including several other relevant components. These could include some measure of cost–benefit ratio of globalization, impacts on standards of living, environmental aspects, wage inequality, skill-biased technological change, the volume and direction of foreign trade and movements of skilled labour, democracy and conflict, shifts in power and aspects of cultural uniformity.

The direction of causality, simultaneity and bias caused by omitted effects must be investigated. Non-linearity would also shed more light on the Kuznets inverted-U hypothesis on the inequality–globalization relationship that is conditional on growth. Industrialized countries dominate the current sample, having different relationships between development, redistribution and inequality than the developing countries. The over-weighting of the advanced industrial countries in the sample results in smaller and slow changes in the mean globalization over time. It negatively biases the overall effects of globalization on inequality and poverty. Furthermore, it also biases the composition of the effects from a developing country perspective. The sample of countries should be expanded to include more developing and transition economies.

The identification of the major determinants of globalization and the quantification of the effects on the ranking of countries are key issues forming the basis on which policy options can be provided. Analysis will help to identify ways of initiating fair treatment of products, services and people that would enable poor countries to benefit from globalization to a greater extent. To reduce the negative effects on inequality and the poor from openness and globalization, these need to be accompanied by redistribution policies and an improvement in social protection.

The impacts of globalization on poverty

Model specification

The relationship between globalization and poverty is examined in several studies. Cornia and Court (2001) find that rising inequality threatens growth and poverty reduction targets, and persistent poverty at high levels makes poverty reduction difficult. Results in Agénor (2003) suggest that globalization at a low level hurts the poor, but at higher levels it reduces poverty. Ravallion (2003) sees the reduction of inequalities through opportunities within the developing countries as crucial for realizing globalization's potential for poverty alleviation. Globalization is one external factor that might affect earnings as well as the distribution of income and poverty. In this section we aim to address the link between globalization and poverty by means of regression analysis:

$$POVERTY_i = \lambda_0 + \lambda_1 GINDEX_i + \sum_{j=1}^{J} \eta_j REGION_{ji} + v_i \tag{3.4}$$

where *GINDEX* refers to the globalization index, *REGION* is a vector of regional dummies, v an error term and the subscript i refers to a country.

The poverty data are prepared by the World Bank's Development Research Group (World Bank, 2002). The *POVERTY* variable is defined in four different ways: percentage of the population below the national poverty line, percentage of the population with income below US$1.08 and US$2.15 per day at 1993 international prices;[14] and share of the poorest 20 per cent in national income or consumption 1990–2001. National estimates of the poverty line are based on population weighted sub-group estimates from household surveys.

To conserve space, the globalization index chosen is the unweighted Kearney index defined previously. Information on the national poverty line is available only for twenty-nine developing and transition countries included in the globalization database, and for thirty-eight countries we have information on the share of population with income below US$1 and US$2 per day. The observation period mainly covers 1993–2000, with a few exceptions dating back to 1989. Information on the share of the poorest 20 per cent in national income or consumption is available for fifty-nine countries.[15] As the World Bank does not provide data on poverty in industrialized countries, so these are excluded from the poverty regression analysis.[16]

Estimation results

The estimation results from a regression of poverty on the unweighted Kearney globalization index are reported in Table 3.11. For a sensitivity analysis, a number of alternative specifications of the relation in Equation (3.4) are estimated. In the basic model (Model C1) variations in poverty defined as the percentage of the population below the poverty line are explained by the aggregate unweighted Kearney globalization index. The coefficient is negative and statistically weakly significant. Globalization explains, at most, only 9 per cent of the variations in poverty among the countries indicating a negative relationship between the level of globalization and poverty at the national level. The negative relationship holds even when poverty is measured as the share of poorest 20 per cent in national income or consumption. However, the relationship is not significantly different from zero when poverty is defined as income below US$1 (Model C3) or US$2 per day (Model C5). To control for regional heterogeneity, we add a number of regional dummies. Accounting for regional heterogeneity (Models C2, C4, C6 and C8) captures most variations in poverty among the countries. The explanatory power of the models increases to 0.53 in Model C8.

In both inequality and poverty models, we have noted that, when regional variations are controlled for, many of the globalization coefficients in the regression become insignificant. This suggests that the countries within each region are relatively homogenous, indicating the prevalence of variation among the regions. For example, Africa has very high levels of poverty, and low levels of technology and economic integration, while Latin America has the highest inequality level and high volatility in its short-term capital

Table 3.11 Least-squares parameter estimates of the impact of unweighted Kearney globalization index (*K*) on poverty

Explanatory variables	**Percentage of population below poverty line**		**Percentage of population below $1 per day**		**Percentage of population below $2 per day**		**Share of 20% poorest of national income or consumption**	
	Model C1	**Model C2**	**Model C3**	**Model C4**	**Model C5**	**Model C6**	**Model C7**	**Model C8**
Intercept	45.9115*	42.8558*	18.9551***	0.6690****	48.9832 *	12.4765****	5.2204*	8.3772*
Log *K* globalization index	−23.4127***	−20.7256***	−8.1328****	2.0192****	−22.7321****	−1.6524****	−1.3508**	−0.1029****
Middle East & North Africa	–	−12.1044****	–	0.0962****	–	8.3839****	–	−1.7002**
East Asia	–	−23.6639***	–	8.1132 ****	–	16.5746****	–	1.5520****
Southeast Asia	–	−3.7445**	–	4.2234****	–	19.6980****	–	−2.6117*
South Asia	–	5.8022****	–	18.5577**	–	45.9763*	–	−0.6390****
Latin America	–	3.3624****	–	8.3663****	–	12.6077****	–	−5.4438*
Sub-Saharan Africa	–	13.7536***	–	36.5491*	–	53.3331*	–	−3.8369*
Eastern Europe (reference)	–	–	–	–	–	–	–	–
Industrialized countries (reference)	–	–	–	–	–	–	–	−1.1481****
R-square adjusted	0.0914	0.2979	−0.0153	0.3707	0.0138	0.4104	0.0540	0.5231
F-value	3.8200***	2.7000**	0.4400****	4.1100*	1.5200****	4.6800*	4.3100**	8.9500*
RMSE	13.6133	11.9663	18.4079	14.4924	27.8032	21.4981	2.1579	1.5322
Number of observations	29	29	38	38	38	38	29	59

Note: Significant at less than 1% (*), 1–5% (**), 5–10% (***), and greater than 10% (****) level of significance. RMSE is root mean square error.

flows. The situation for South Asia in terms of globalization is similar to the one for Africa. This regional divergence in the patterns of globalization components will obviously determine how inequality and poverty are affected by the four components. The small sample size does not allow us to estimate the relationship for separate regions or allow for parameter heterogeneity in the pooled model.

Again, the results presented here must be interpreted with caution. With the exception of Models C7 and C8, the sample is very small and the periods when poverty and globalization are measured do not overlap in all cases. In Model C8, where the sample is the largest for the Middle East and North Africa regions, the poorest 20 per cent (Southeast Asia, Latin America and sub-Saharan Africa) have a significantly lower share of income relative to the reference group (Eastern Europe). The shares of the Eastern European countries are insignificantly different from those of Western Europe, an indication that no link exists between globalization and poverty when poverty for the poorest is defined as the share of national income and consumption. As mentioned previously, several factors limit the comparability of this study with those found in the literature. The strength of the current study lies in the computation of a multi-dimensional index for globalization and the use of statistical methods to establish the relationship between globalization, inequality and poverty depending on regional location of countries. The main limitations are the short and partially overlapping time period, and the small number of countries included in our regression analysis.

Summary

This study addressed the measurement of two indices of globalization (Kearney and principal component analysis based) that quantify the level and development of globalization for ranking countries. The indices are composed of four main components – economic integration, personal contact, technology, and political engagement – each of which develops differently over time and across countries. Alternative weighted and unweighted versions of the two indices were also computed. The results show that internal and external conflicts seem effectively to reduce the globalization prospects of the countries. The low-ranking position of a country is often associated with economic and technology factors that certain developing countries are unable to address. The high-ranking countries share similar patterns in various component distributions. The mean globalization by region shows that personal and technology factors play an important role in determining the ranking position of the regions. This breakdown of the index into major components offers the possibility of identifying the sources of globalization, and link these to economic policy measures to bring about desirable changes in national and international policies.

When looking at the simple correlation among the indices for income inequality, poverty and globalization, we find the Gini coefficients negatively correlated with disaggregated personal, technology and political components, but uncorrelated with the economic component. The same negative relationship exists between the income inequality and the aggregate globalization indices. We do not find correlation between the share of poor and inequality, but their share of income is negatively correlated with income inequality. This is interpreted as increased inequality being more damaging to the poorest in the population. Concerning correlation between poverty and globalization indices, results show that globalization reduces poverty and increases the income share of the poorest group, thus reducing inequality. The reduction in poverty is associated mostly with the technology component of globalization.

In a regression analysis we investigated the relationship between inequality, poverty and globalization. The results show that the globalization index explains only 7–11 per cent of the variations in income inequality, and 9 per cent of poverty among the countries. By breaking down the aggregate globalization index into four components, the results show that personal contacts and technology transfers reduce inequality, while economic integration increases it. Political engagement is found to have no significant effect on income inequality. The results provide weak evidence that globalization reduces poverty. When controlling for regional heterogeneity, we find that the regional variable plays an important role in explaining the variation in inequality and poverty, which makes the globalization coefficient insignificant. This suggests that variations among regions are a dominant factor in how poverty and inequality are affected by the four globalization components.

Although the current version of the index quantifies the level of globalization well, it has certain limitations and the results should be interpreted with caution. We have introduced a number of improvements to overcome several of the shortcomings. These include an axiomatic approach to set out the desirable properties of the index, the use of panel data, identification and incorporation of more dimensions or components, and the use of estimation methods that avoid the choice of weights attached to each index component on an *ad hoc* basis. These are important issues in understanding how globalization functions, and learning to use the generated information in policy formulation and development evaluations. The index is in its early stage of development but has identified several directions along which future advances can be made. In order to make the regression results on the link between globalization, inequality and poverty more stable, less biased towards industrialized countries, and to cover different phases of globalization, one should extend the data both in time and transition and developing country dimensions.

Notes

1. Sklair (1999) and Woods (1998) discuss competing conceptions, main approaches to, definitions, debates and implications of globalization.

2. I thank Carol Graham for making this point.
3. For a more comprehensive review of the literature, see Nissanke and Thorbecke (Chapter 1 in this volume).
4. The seven-point plan includes: (i) a 'development round' of trade talks to bring down the trade barriers; (ii) improving the investment climate in developing countries to encourage inflows of FDI; (iii) improving delivery of education and health services to enable the poor to benefit from growth; (iv) providing social protection to a changing labour market to enable workers to take more risks and to avail themselves of new opportunities; (v) rich nations to increase foreign aid with impact on growth and poverty; (vi) supporting debt relief for reforms in marginalized countries; and (vii) tackling greenhouse gases which have been burdensome to poor countries and poor people.
5. For a review of the HDI, its components, criticisms on the index and alternative indices, see Noorbakhsh (1998).
6. The data underlying the two studies differ with respect to country coverage, period of observation and selected indicators of globalization. Heshmati (2003) is based on a panel data containing 13 indicators of globalization and 62 industrialized and developing countries observed during 1995–2000, while Anderson and Herbertsson (2003) use data on 9 indicators from 23 OECD countries for the period 1979–2000.
7. A PC procedure produces standardized or unstandardized PC scores. A factor analysis (FA) produces the same results as PC except that scoring coefficients from FA are normalized to give PC scores with unit variance. For a discussion of each method's advantages over the other, see SAS/STAT Users' Guide (SAS Institute, 1993).
8. The data sources can be viewed on these websites: www.foreignpolicy.com and www.atkearney.com.
9. I thank Carol Graham for making this point.
10. For the principal component analysis we identified three eigenvalues exceeding one: 4.5862, 2.6419 and 1.3622. The proportions of the total variance explained by these principal components are: 0.3528, 0.2032 and 0.1048. The cumulative proportion of total variance explained is 0.6608.
11. In order to reduce the number of regions we have pooled Australia, New Zealand, the USA and Canada with the West European region and labelled the group as industrialized countries.
12. The income inequality variables for South Africa and Morocco are missing. These two countries are excluded from the regression analysis.
13. Agénor (2003) finds an inverted U-shape relationship between globalization and poverty. The globalization index was based on trade and financial integration. The index is similar to our economic integration component.
14. This is equivalent to US$1 and US$2 in 1985 prices, adjusted for PPP.
15. No data are available for Argentina, Saudi Arabia and Taiwan.
16. Alternatively, one could assign the minimum poverty rate of 2 per cent to the industrialized countries and, instead of least squares, apply Tobit analysis to the censored data to establish the link between poverty and globalization.

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4

Globalization and Poverty Trends across Regions: The Role of Variation in the Income and Inequality Elasticities of Poverty

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Introduction

The call for the eradication of poverty is stronger now than ever before. The World Bank and IMF, the UN and in particular UNDP, all development banks and nearly all multilateral and bilateral aid agencies profess themselves to be concerned principally with reducing the number and proportion of people who live in conditions of absolute poverty. However, in the case of some of the organizations mentioned, the professed concern with poverty reduction has not made much difference to their policy recommendations. Despite poverty reduction being the central objective, the principal focus of the policies that are pursued in the name of poverty reduction is on promoting economic growth. Poverty reduction is more popular than ever, but so is economic growth, with the difference that growth is no longer seen as an end in itself but as a means to an end, expressed succinctly in the title of Dollar and Kraay (2002), 'Growth Is Good for the Poor'.

If economic growth is the 'royal avenue' for reducing poverty, international trade is seen to be the royal avenue for promoting growth (see, for example, Dollar and Kraay, 2003, 2004). Policies of deregulating internal markets, providing macroeconomic stability, encouraging private investment through a stable and transparent legal framework, and of course removing barriers to international trade, are recommended as part of the attempt to integrate a local economy into the global economy so that it benefits optimally from this integration. The dominant view on the impact of globalization on the poor can be summed up as: trade is good for growth and growth is good for the poor. At the same time, increasing trade openness is only one aspect of the world's ever-closer integration that is intensifying the spill-over effects of research and development (R&D), and facilitating the flow of ideas, capital, goods and services, financial and other. Based on endogenous growth theory, all these aspects associated with globalization may be hypothesized to have a positive impact on growth (Agénor, 2004), providing further ammunition for the 'globalization is good for the poor' school of thought.

The exclusive focus on growth for pursuing poverty reduction, itself pursued through an unreflective advocacy of the supposed prosperity-enhancing impact of globalization, has worried more than a few commentators, particularly among NGOs. Two major concerns have been expressed most forcefully (Jomo, 2003). One is that globalization will promote income growth only in some regions, but not in others. In other words, globalization will increase global inequality. Indeed, although in a Heckscher–Ohlin framework, increasing trade openness should lead to a more efficient international allocation of resources, the view that, as a consequence, all countries' steady-state output levels will increase is arguably simplistic (Harrison, 2005). In particular, when an initial comparative advantage in low-productivity sectors, such as raw materials and primary commodities, prevents a country from diversifying into high-productivity sectors, such as manufacturing and formal, specialized services, its steady-state output levels will be lower than would have been the case if its borders had not been opened prematurely (Matsuyama, 1992). Similarly, global financial integration, through enabling investors to spread financial risks, should lower interest rates and through that channel contribute to growth. At the same time, the increased exposure to the volatility of short-term capital that capital account liberalization brings has been shown to be detrimental to growth prospects (Agénor and Aizenman, 1998). In short, based on economic-theoretical considerations, we may expect differences across regions in the effects of globalization on income growth. A second concern is that, even in regions where globalization does promote income growth, the poor will be left behind. In other words, globalization is said to increase local inequality (Jomo, 2003). Whether or not it will is not a priori obvious. A comparative advantage in unskilled labour-intensive sectors will tend to narrow the wage gap between skilled and unskilled labourers whereas a comparative advantage in skilled labour-intensive sectors will tend to widen it. The latter short-term effect on inequality may persist over time, when credit market imperfections prohibit the acquisition of human capital by the poorer sections of society (Agénor, 2004). Which tendency will prevail and define the ultimate winners and losers of globalization is an empirical matter and, as with economic growth, regional contrasts in the impact of globalization on local income inequality are to be expected. Globalization in some accounts may thus be held responsible for increasing both between-region and within-region inequality. The quality of the evidence for and against this assertion is hotly debated and it may be some time before the dust settles (contrast, for example, Rodríguez and Rodrik, 2000 with Lee *et al.*, 2004). Whatever one's view on the balance of the evidence, what is indisputable is that there is considerable 'churning under the surface' at whatever level of disaggregation one considers the evidence (Ravallion, 2003). In other words, globalization-induced income and inequality changes vary considerably across regions, which, as argued above, is in line with economic theory.

There exists, however, a third concern – arguably as important as the other two – that has received relatively little attention. The impact of globalization on income growth and inequality is a bone of contention, but even supposing that we knew this impact precisely, could we then settle decisively the issue of the impact of globalization on the poor? In other words, is it possible to *predict* the impact of globalization-induced income growth and inequality changes on poverty? That is the central question of this study. The answer, in our view, is a qualified 'yes'. It is possible to predict with a considerable degree of accuracy the impact of (globalization-induced) income growth and changes in inequality on poverty by studying features of the *current* distribution of income. An important caveat is that the evidence this study provides in support of this assertion implies that the responsiveness of poverty to income growth and changes in inequality varies widely across regions and, to a lesser extent, over time, exactly in line with variation in features of the distribution of income that is in place at the onset of these globalization-induced income and inequality changes.

This study provides evidence in support of these claims through a detailed examination of the role of variation in the income and inequality elasticities of poverty, both over time and across the six major developing regions: East Asia, Eastern Europe and Central Asia, Central and Latin America, Middle East and North Africa, South Asia, and sub-Saharan Africa. The immediate aim is to shed light on the casual empiricism which contends that the poor appear to benefit much more from income growth, and suffer much more from rising inequality, in some situations than in others (see, for example, Besley and Burgess, 2003). For example, a given amount of growth appears to reduce poverty by more than twice as much in East Asia as in sub-Saharan Africa, a region which, therefore, seems doubly cursed both by low levels of growth and by a low responsiveness of poverty to growth. Paradoxically, in Eastern Europe and Central Asia, as the Gini index of inequality soared to unprecedented heights throughout the 1990s, each extra unit of increase of this index (naturally, controlling for changes in mean income) appeared to add an ever *smaller* number of people to the growing legion of those with an income below US$2 per day. The proximate causes of poverty changes – changes in mean income and inequality – appear to work out very differently depending on when and where they occur.

In order to make rigorous sense of these casual observations, this study builds on two strands of the research literature on proximate causes of poverty changes. The first strand is the literature, pioneered by Ravallion (1997), which shows that, other things being equal, higher inequality of income at the onset of an episode of income growth *reduces* the extent to which the (absolute) poor benefit from that income growth. The finding that high inequality reduces the prospects for pro-poor growth has since been confirmed many times (see, for example, Hanmer and Naschold, 2000; Ravallion, 2001; Mosley *et al.*, 2004), but was left, as it were, hanging in mid-air until the studies of Bourguignon (2003) and Epaulard (2003). Starting from the common-sense observation that poverty, mean income and inequality are related aspects of one income distribution, they show that the relationship between their changes depends *entirely* on properties of the initial income distribution (both mean income and inequality), which therefore need to be taken into account explicitly when examining the responsiveness of poverty to changes in mean income or income inequality.

This study also builds on the studies that decompose poverty changes into an effect caused by changes in mean income and an effect caused by changes in inequality. Studies that pioneered such a decomposition of poverty changes, using a parametric specification of the Lorenz curve, are Ravallion and Huppi (1991) for Indonesia; Datt and Ravallion (1992) for regions of Brazil and India; and Kakwani (1993) for Côte d'Ivoire. The decomposition methodology introduced in Datt and Ravallion (1992) has become very influential, sparking off a voluminous literature applying their methodology.[1] Recent applications of their methodology make use of kernel smoothing techniques instead of parametric specifications of the Lorenz curve, with potentially large gains in accuracy (Contreras, 2003; Alwang *et al.*, 2002). In the concluding section of this chapter, we return to the significance of this literature for policy-makers concerned with the impact of globalization on the world's poor.

In the methodological section we take Bourguignon (2003) and Epaulard (2003) as our point of departure to show how the responsiveness (elasticity) of poverty to income growth and changes in inequality can readily be calculated when assuming a log-normal income distribution. We next show how, based on a first-order approximation, a Datt-and-Ravallion-style decomposition of poverty changes across regions and over time can be obtained based on changes in mean income and inequality, and the income and inequality, elasticities of poverty.

In the empirical section we use unbalanced panel data containing information for seventy-six developing countries over the period 1981–98. We use these data to construct for each of the six regions weighted averages over time of poverty, mean income and income inequality. Based on these regional averages, we derive analytically the income and Gini elasticities of poverty by region and show that these vary considerably across regions. For example, for 1990 we find an income elasticity of poverty equal to −1.06 on average, ranging from −0.47 for South Asia to −4.21 for Eastern Europe and Central Asia. These values differ considerably from the 'universal' growth elasticity of −2 that Collier and Dollar (2001, 2002) use in their influential policy simulations. We find a Gini elasticity of poverty equal to 0.21 on average, ranging from −0.06 in South Asia to 2.94 in Eastern Europe and Central Asia. We also find evidence for variation over time, but this appears to be quantitatively less important. The analytically derived elasticities form the inputs for our decomposition of regional poverty trends during the 1980s and 1990s. Using our calculated region specific elasticities, we find that income changes account for most of the variation in poverty trends across regions and over time, and that the impact of changes in inequality is relatively small, except in Eastern Europe and Central Asia. The impact of changes in the income and inequality elasticities of poverty over time is also relatively small, except again in Eastern Europe and Central Asia, but the variation in these elasticities across regions is large, and consequently accounts for a substantial part of observed regional variation in poverty trends.

A comparison of our predictions with those implied by assuming an income elasticity of poverty equal to −2, as in Collier and Dollar (2001, 2002), show that using the latter elasticity consistently over-estimates the amount of poverty reduction during the 1980s and 1990s (by a factor of two when we pool all regions). Collier and Dollar (2001) examine whether the Millennium Development Goal (MDG) of halving global poverty can be met through the use of poverty-efficient aid. They conclude that it can be met. In the light of the poor within-sample performance of their elasticity, it is perhaps not advisable to use it for out-of-sample poverty projections, and it may yet be too early to start celebrations in so far as this particular MDG is concerned, even if policy-makers were to follow Collier and Dollar's aid allocation rule.

The final section concludes with the observation that the relevance of the two strands of the literature discussed above for policy-makers concerned with the impact of globalization on the world's poor cannot be overstated: whether or not globalization will be *equitable* in its consequences depends to a considerable extent on the shape and the location (current mean income) of the distribution of income on which these consequences have an impact. Moreover, poverty's responsiveness to the immediate effects of globalization can be quantified *before* these effects materialize. A detailed study of the current distribution of income therefore has tremendous potential payoffs for increasing our understanding of the impact of globalization on the world's poor. It provides a very powerful handle indeed on the tricky matter of the degree in which the poor will benefit from globalization-induced changes in average prosperity and the distribution thereof.

Income and inequality elasticities of poverty and decomposition methodology

Shortly, we shall formalize how changes in a poverty headcount measure relate to changes in mean income and the Gini index of inequality. Following Bourguignon (2003) and Epaulard (2003), we then derive the income and Gini elasticities of poverty analytically. By assuming income to be log-normally distributed, one can compute unit-specific elasticities of poverty with respect to changes in mean income and Gini. They show that such 'theoretical' values predict changes in poverty reasonably well, and considerably better than *ad hoc* econometric specifications. Subsequently, we outline how we decompose regional poverty trends into effects caused by changes in mean income and inequality, and by variation in the income and inequality elasticities of poverty.

Poverty, income and inequality

Our measure of poverty is the proportion of the population at time t with an income below the absolute poverty line z, which is equal to the probability that income Y_t is lower than the poverty line:

$$H_t = \Pr(Y_t < z) \equiv F_t(z) \tag{4.1}$$

$F_t(.)$ is the distribution function of income. Following Bourguignon (2003) and Epaulard (2003), we assume a log-normal income distribution, and in this case poverty is expressed as follows:

$$H_t = \Phi\left(\frac{\log(z/\mu_t)}{\sigma_t} + \frac{1}{2}\sigma_t\right) \tag{4.2}$$

where $\Phi(.)$ is the cumulative distribution function of the standard normal distribution, which is denoted by $\phi(.)$. The standard deviation of the logarithm of income is denoted by σ_t and μ_t is mean income. Gini in period t, denoted by G_t, is now given by:

$$G_t = 2\Phi\left(\frac{\sigma_t}{\sqrt{2}}\right) - 1 \tag{4.3}$$

Using a first-order approximation, we can decompose the relative change in poverty over time into an income growth and a redistribution effect:

$$\frac{dH_t}{dt} = \frac{\partial H_t}{\partial \mu_t}\frac{d\mu_t}{dt} + \frac{\partial H_t}{\partial G_t}\frac{dG_t}{dt} + \xi_t \tag{4.4}$$

In terms of elasticities we can rewrite Equation (4.4) as follows:

$$\frac{dH_t}{dt} = \varepsilon_{\mu}^{H} \frac{d\mu_t}{dt} \frac{H_t}{\mu_t} + \varepsilon_{G}^{H} \frac{dG_t}{dt} \frac{H_t}{G_t} + \zeta_t \tag{4.4$'$}$$

where ε_{μ}^{H} denotes the (distribution-neutral) income elasticity of poverty and ε_{G}^{H} the Gini elasticity of poverty. ζ_t is a residual, indicating that a first-order approximation is used and that we do not consider second-order effects.

Figure 4.1 illustrates the decomposition by considering a move from an initial to a final log-normal distribution in two stages: by first shifting its mean, and next its dispersion parameter.[2] The initial distribution shifts to the right so that its mean is identical to that of the final distribution, but at first it does not change shape – the *relative* distribution remains unchanged. The area between the two identically shaped distributions to the left of the poverty line is the poverty reduction that results from the growth that has in fact taken place, under the assumption that the relative distribution of income has not changed. The final distribution has a different shape from the initial distribution – so the relative distribution *has* changed. In Figure 4.1 we illustrate decreasing inequality. The area between the shifted initial and the final distribution is the poverty reduction resulting from a changing Gini.

The impact on a poverty headcount ratio of changes in mean income and Gini depends on the shape and location of the initial distribution of income. In a carefully selected example, this can readily be seen. Figure 4.2 illustrates the income elasticity of poverty. An identically-sized spread-preserving shift *B* of mean income implies a much larger poverty headcount change for a distribution such as the one illustrated in the top panel of the figure than in the one illustrated in the bottom panel. However, the influence of the initial distribution of income on Gini and income elasticities of poverty is not always so obvious, and below we provide an analytical derivation of these elasticities.

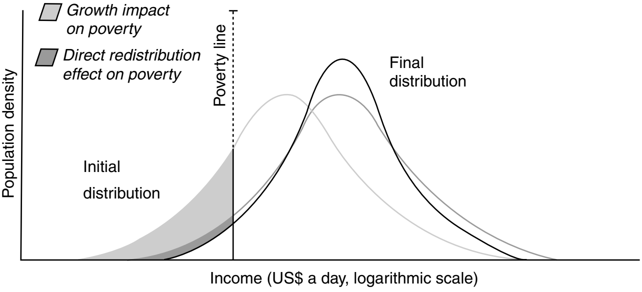

Figure 4.1 Growth and direct redistribution effects on poverty

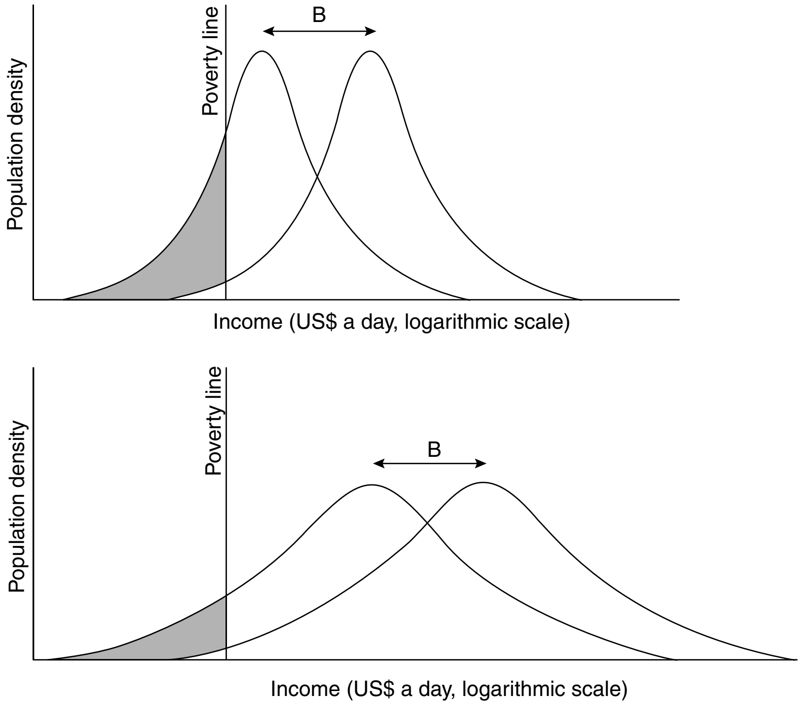

Figure 4.2 The role of the initial income distribution in the income–growth effect on poverty

Income and inequality elasticities of the poverty headcount ratio

Analytically, using Equation (4.2) as our definition of poverty, we can derive the income elasticity of poverty as follows:

$$\varepsilon_{\mu}^{H} = \frac{\partial H_t}{\partial \mu_t}\frac{\mu_t}{H_t} \equiv -\frac{1}{\sigma_t}\frac{\phi_t\left(\frac{\log(z/\mu_t)}{\sigma_t}+\frac{1}{2}\sigma_t\right)}{\Phi_t\left(\frac{\log(z/\mu_t)}{\sigma_t}+\frac{1}{2}\sigma_t\right)} \leq 0 \tag{4.5}$$

The income elasticity is always negative. Gini is a known function of σ_t (see Equation (4.3)), and positively correlated with σ_t. The elasticity of poverty with respect to inequality, σ_t, is given by:

$$\varepsilon_{\sigma}^{H} = \frac{\partial H_t}{\partial \sigma_t}\frac{\sigma_t}{H_t} \equiv \frac{\phi_t\left(\frac{\log(z/\mu_t)}{\sigma_t}+\frac{1}{2}\sigma_t\right)}{\Phi_t\left(\frac{\log(z/\mu_t)}{\sigma_t}+\frac{1}{2}\sigma_t\right)}\left(\frac{-\log(z/\mu_t)}{\sigma_t}+\frac{1}{2}\sigma_t\right) \geq 0 \tag{4.6}$$

Note that $\varepsilon_G^H = \varepsilon_\sigma^H \dfrac{\partial \sigma_t}{\partial G_t} \dfrac{G_t}{\sigma_t}$, with the second term in the right-hand side (r.h.s.) always being positive. The inequality elasticity is positive unless a country has a very low mean income – that is, this elasticity is positive only if $\mu_t > z \times \exp(-\frac{1}{2}\sigma_t^2)$.

The elasticities derived in Equations (4.5) and (4.6) depend on three parameters: the poverty line, mean income, and the standard deviation of log-income. Given these three parameters, we can calculate the income and inequality elasticity of the poverty headcount ratio.

Decomposition of poverty trends

The decomposition of poverty trends is based on Equation (4.4′). We first disentangle the effect on poverty of a total income-growth effect and of an effect caused by a change in Gini:

$$\begin{aligned}\frac{dH_{rt}}{dt} = {} & \varepsilon_\mu^H(z,\mu_{rt},\sigma_{rt})\left(\frac{d\mu_{rt}}{dt}\frac{H_{rt}}{\mu_{rt}}\right) \\ & + \varepsilon_G^H(z,\mu_{rt},\sigma_{rt})\left(\frac{dG_{rt}}{dt}\frac{H_{rt}}{G_{rt}}\right) \\ & + \zeta_{rt}\end{aligned} \tag{4.7}$$

where *r* is a region index. The income and Gini elasticity of poverty for region *r* in year *t* are denoted by, respectively, $\varepsilon_\mu^H(z,\mu_{rt},\sigma_{rt})$ and $\varepsilon_G^H(z,\mu_{rt},\sigma_{rt})$. The first term in the r.h.s. of Equation (4.7) is the percentage point reduction in poverty caused by a change in mean income, and the second term is the percentage point reduction in poverty caused by a change in Gini. In essence, the decomposition shown in Equation (4.7) is identical to that of Datt and Ravallion (1992), bearing in mind that both rely on a parametric specification of the distribution of income.

Next, we decompose the income-growth effect and the effect caused by a change in Gini, each into three components:

$$\begin{aligned}\frac{dH_{rt}}{dt} = {} & \varepsilon_\mu^H(z,\mu_0,\sigma_0)\left(\frac{d\mu_{rt}}{dt}\frac{H_{rt}}{\mu_{rt}}\right) \\ & + \left(\varepsilon_\mu^H(z,\mu_{r0},\sigma_{r0}) - \varepsilon_\mu^H(z,\mu_0,\sigma_0)\right)\left(\frac{d\mu_{rt}}{dt}\frac{H_{rt}}{\mu_{rt}}\right) \\ & + \left(\varepsilon_\mu^H(z,\mu_{rt},\sigma_{rt}) - \varepsilon_y^H(z,\mu_{r0},\sigma_{r0})\right)\left(\frac{d\mu_{rt}}{dt}\frac{H_{rt}}{\mu_{rt}}\right) \\ & + \varepsilon_G^H(z,\mu_0,\sigma_0)\left(\frac{dG_{rt}}{dt}\frac{H_{rt}}{G_{rt}}\right) + \left(\varepsilon_G^H(z,\mu_{r0},\sigma_{r0}) - \varepsilon_G^H(z,\mu_0,\sigma_0)\right)\left(\frac{dG_{rt}}{dt}\frac{H_{rt}}{G_{rt}}\right)\end{aligned} \tag{4.8}$$

$$+ \left(\varepsilon_G^H(z,\mu_{rt},\sigma_{rt}) - \varepsilon_G^H(z,\mu_{r0},\sigma_{r0})\right)\left(\frac{dG_{rt}}{dt}\frac{H_{rt}}{G_{rt}}\right)$$

$$+ \zeta_{rt}$$

The income and Gini elasticity of poverty by region in a base year are denoted by, respectively, $\varepsilon_\mu^H(z,\mu_{r0},\sigma_{r0})$ and $\varepsilon_G^H(z,\mu_{r0},\sigma_{r0})$. In the empirical section, we use 1985 as the base year. The income and Gini elasticity of poverty for all regions in a base year are denoted by, respectively, $\varepsilon_\mu^H(z,\mu_0,\sigma_0)$ and $\varepsilon_G^H(z,\mu_0,\sigma_0)$. The first term in the r.h.s. of Equation (4.8) is the effect on poverty of a change in income in region *r*, using the elasticity in the base year for all regions. In other words, this term is the effect of income growth in region *r* in the hypothetical case that all regions have the same income elasticity $\varepsilon_\mu^H(z,\mu_0,\sigma_0)$. The second term in the r.h.s. is the effect on poverty of income growth in region *r* because this region's actual income elasticity of poverty in the base year differs from the all-region one. In the case that the income elasticity does not vary across regions, this second term would be equal to zero. The third term in the r.h.s. is the effect on poverty of income growth due to a change over time in the income elasticity of poverty in region *r*. The fourth term in the r.h.s. is the effect on poverty of a change in Gini in region *r*, using for each region the Gini elasticity for all regions $\varepsilon_G^H(z,\mu_0,\sigma_0)$. The fifth term in the r.h.s. is the effect on poverty of a change in Gini in region *r* because this region's actual Gini elasticity of poverty in the base year differs from the all-region one. Where the Gini elasticity does not vary across regions, this term would be equal to zero. The sixth term in the r.h.s. is the effect on poverty of a change in Gini caused by a change over time in the Gini elasticity of poverty in region *r*.

The last term is a residual capturing the fact this decomposition is based on a first-order approximation (Equation (4.4′)). This residual term may, furthermore, capture effects caused by deviations in the distribution of income from the log-normal distribution.

The data

The dataset we use has been developed by Ravallion and Chen, and is known as the World Bank Poverty Monitoring Database (see, for example, Ravallion and Chen, 1997; Chen and Ravallion, 2001). The dataset is based on nationally representative household surveys, carried out mainly by government statistical agencies, and values of all variables for one country-year are computed from a single underlying survey. In this study we use three variables: mean income per month in 1993 PPP and normalized by household size; the Gini index of inequality (based on the same welfare measure); and a poverty headcount measure based on the US$2/day poverty line (strictly speaking, US$2.16 in 1993 PPPs). Mean 'income' is, in about 60 per cent of cases, based on household expenditure (see Chen and Ravallion, 2001, 2004). The poverty headcount measure is equal to the percentage of the population living in households with a per capita income lower than the poverty line. An analysis based on the US$1/day poverty line does not change the main conclusions of this study.

We have information on the US$2/day poverty headcount measure, mean income and the Gini index of income inequality for seventy-six countries: a total of 227 observations. Six countries in the sample (27 observations) are from East Asia, eighteen (58) from Eastern Europe and Central Asia, another eighteen (62) from Central and Latin America, five (11) from the Middle East and North Africa, another five (24) from South Asia, and twenty-four (45) from sub-Saharan Africa. All data points are plotted in Figure 4.3. Separate regional plots provide much clearer pictures in Figures 4.4–4.6. The time trends are allowed to be non-linear (see below) but turn out to be virtually linear.

Predicted regional trends in mean income, inequality and poverty

Ideally, one would like to examine poverty trends for each country over many years, but there simply are not enough data points; we have on average about three observations per country over the period 1980–98. We therefore restrict our investigation to average trends in the six developing regions, with the further limitation that we have data only for a sub-set of

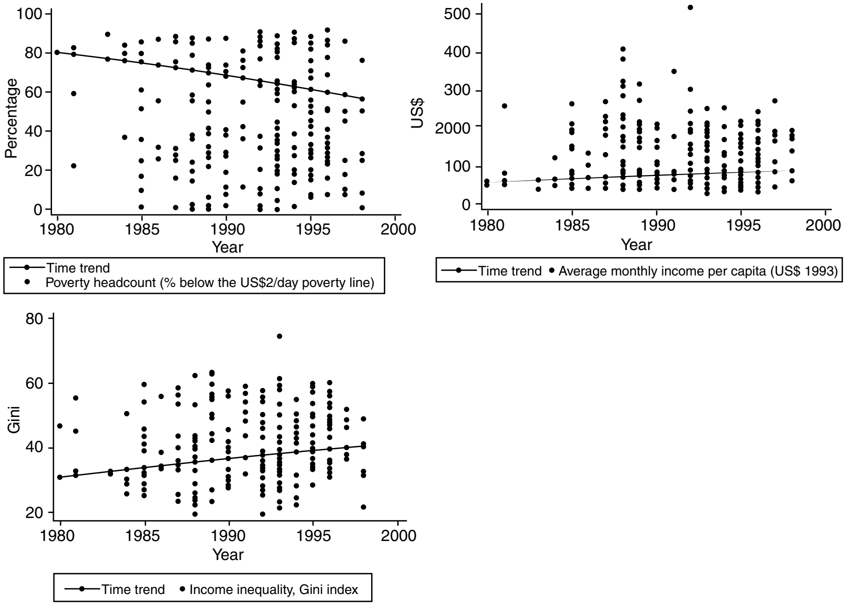

Figure 4.3 Trends in poverty, mean income and inequality, all regions pooled

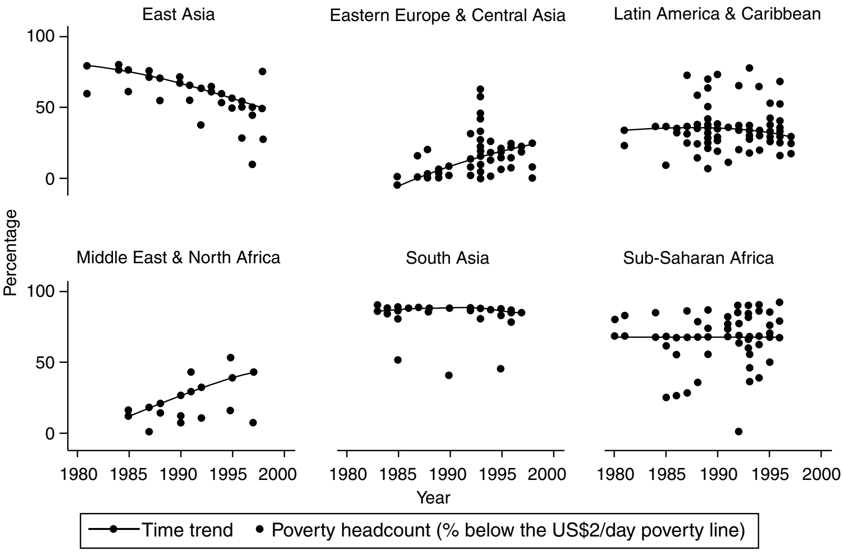

Figure 4.4 Regional trends in poverty, 1980–98

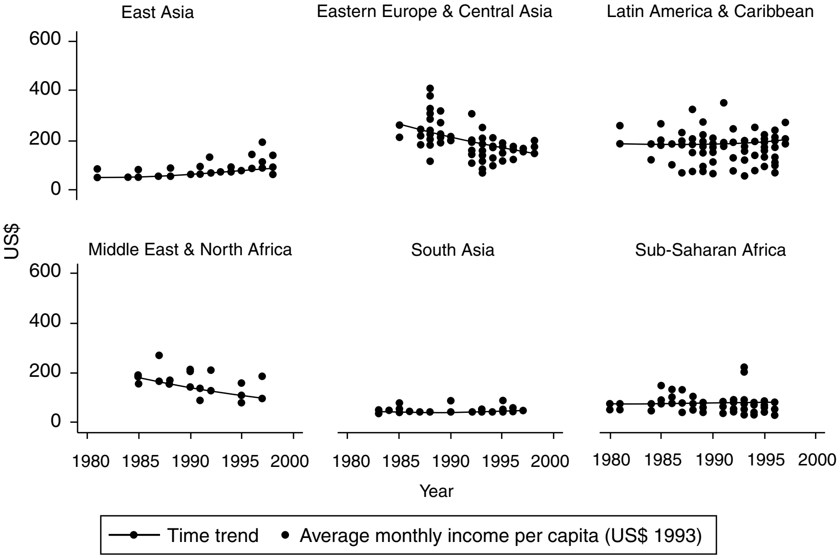

Figure 4.5 Regional trends in mean income, 1980–98

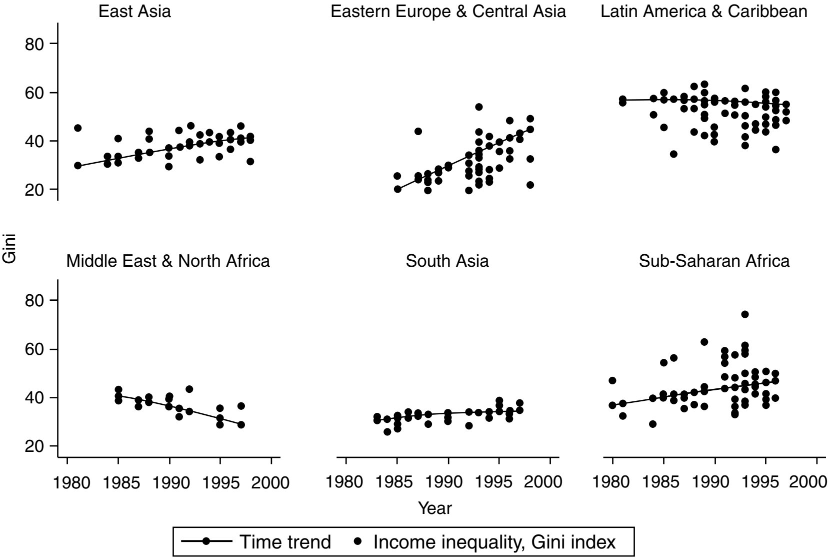

Figure 4.6 Regional trends in inequality, 1980–98

countries within each region. For this reason we need to determine regional averages per year for the variables of poverty, mean income and Gini. While one could simply compute average values for each year, a more sophisticated approach – which also allows us to take into account differences in population size relatively easily – is to make regression-based regional predictions for each variable and year. Naturally, in a balanced panel these predictions are weighted averages; in our unbalanced panel this regression-based approach predicts averages also for years for which we have no observations by means of interpolation. We do not perform out-of-sample predictions; that is, no extrapolations. Figures 4.3–4.6 show the predicted time trends for all regions and for each region separately. In essence we run for each variable and per region auxiliary regressions in which the variable is regressed on a third-order polynomial in years with each observation weighted with population size. Adding higher-order terms makes no difference to the fitted lines in these figures, referred to as the 'time trend'. The general picture that arises from this exercise is that all regional trends are virtually linear; a formal test would not reject linear trends. The estimation results of the trend models with linear time trends are reported in Appendix A on page 115. The (population size weighted) predicted region and time specific values for each variable are used when calculating the income and Gini elasticities of poverty in a later section.

Descriptive statistics

Figure 4.3 shows the trends for all regions pooled. These trends are similar to the ones documented in previous studies (Chen and Ravallion, 2001, 2004): poverty has decreased by about 25 percentage points from 82 per cent in 1980 to 57 per cent in 1998. Over this period mean income has increased by 50 per cent, and income inequality as measured by Gini has risen from 31 in 1980 to 41 in 1998.

Figures 4.4–4.6 show the regional trends in poverty, mean income and the Gini index of inequality during the 1980s and 1990s, as captured by the weighted averages described above. East Asia experienced considerable income growth and poverty reduction, especially during the 1990s, and a modest rise in inequality. More than a third of usable observations for this region are for China, and because of both the composition of the dataset and, more importantly, because of China's size, East Asia's trends in poverty and income are therefore very much a Chinese story. In Eastern Europe and Central Asia, poverty and inequality rose sharply, while the economies contracted severely. The region went from being the lowest-inequality region to being a high-inequality region. Inequality trends are often described as sluggish (see, for example, Atkinson and Bourguignon, 2000), but this is belied by this region's experience. Latin America saw some growth, some poverty reduction and slightly falling inequality. The Middle East and North Africa experienced economic contraction, rising poverty and falling inequality. It should be remembered, though, that this region is underrepresented in our data. In South Asia, mean income and inequality rose moderately, and poverty fell somewhat. In sub-Saharan Africa, mean income fell somewhat, and both Gini and poverty rose moderately.

Elasticities and decomposition

We next compute the income and Gini elasticity of poverty by region for several years, based on Equations (4.5) and (4.6), and using as inputs the estimated time trends of mean income and Gini by region and year, as reported in Figures 4.4–4.6. We then use these elasticities and the region-specific changes in income and inequality to decompose poverty changes for each of the six regions. This decomposition is based on Equations (4.7) and (4.8).

Income and Gini elasticities of poverty

We compute the income elasticity using Equation (4.5) and the Gini elasticity using Equation (4.6), and use these in the decomposition exercise in the next section. Tables 4.1 and 4.2 show these elasticities for the selected years 1985, 1990 and 1995.

Table 4.1 reports the responsiveness of poverty to changes in income; that is, the income elasticity of poverty. The overall responsiveness remained

Table 4.1 Income elasticities of poverty across regions and time

Region	1985	1990	1995
East Asia	−0.61	−0.85	−0.98
Eastern Europe and Central Asia	−10.28	−4.21	−2.04
Central and Latin America	−0.91	−0.98	−1.05
Middle East and North Africa	−1.94	−2.11	−2.10
South Asia	−0.44	−0.47	−0.49
Sub-Saharan Africa	−0.93	−0.85	−0.78
All regions	−1.03	−1.06	−1.06

Source: Authors' calculations based on Equation (4.5).

Table 4.2 Gini elasticities of poverty across regions and time

Region	1985	1990	1995
East Asia	−0.04	0.09	0.25
Eastern Europe and Central Asia	7.54	2.94	1.36
Central and Latin America	0.93	1.00	1.08
Middle East and North Africa	1.39	1.14	0.73
South Asia	−0.07	−0.06	−0.05
Sub-Saharan Africa	0.21	0.24	0.27
All regions	0.12	0.21	0.29

Source: Authors' calculations based on Equation (4.6).

virtually constant; the income elasticity of poverty is equal to −1.03 in 1985 and −1.06 in 1990 and 1995. The income elasticity of poverty across regions ranges in 1990 from −0.47 for South Asia to −4.21 for Eastern Europe and Central Asia. As can be seen from Equation (4.5), this is solely because of variations in income inequality and the ratio poverty line over mean income. *Ceteris paribus*, a higher level of inequality is associated with a lower (absolute value of the) income elasticity of poverty and a higher level of mean income is associated with a higher (absolute value of the) income elasticity (see Bourguignon, 2003; Epaulard, 2003). Our results are not consistent with the findings of Besley and Burgess (2003) – that poverty is twice as responsive to economic growth in East Asia as it is in sub-Saharan Africa; we find the income elasticity of poverty to be of the same order of magnitude in both regions. Although we also find considerable cross-regional variation in the income elasticity, our results may differ from theirs because we take into account explicitly the underlying distribution of income when computing this elasticity, while Besley and Burgess (2003) do not control for differences in the distribution of income. In other words, they estimate what Epaulard (2003) calls the 'apparent' income elasticity of poverty. Table 4.1 implies considerable intertemporal diversity in poverty's responsiveness to growth for two regions. As mean income increased in East Asia (see Figure 4.5), the responsiveness of poverty to income changes increased (a higher level of mean income *ceteris paribus* increases the absolute value of the income elasticity of poverty), although this effect has been tempered somewhat by increases in inequality (see Figure 4.6). Eastern Europe and Central Asia saw their income elasticity fall from an astonishing −10.28 in 1985 (primarily because of its very low levels of inequality at the time) to a much more modest −2.05 in 1995, because of both the spectacular increase in inequality and the severe contraction of the economy apparent in the large fall of mean income.

Table 4.2 reports the responsiveness of poverty to changes in inequality; that is, the Gini elasticity of poverty. The overall responsiveness more than doubled, from 0.12 in 1985 to 0.29 in 1995. This is mainly the result of the strong increase in responsiveness in East Asia, which in turn is a result of a strong increase in mean income. The Gini elasticity of poverty varies considerably across regions, ranging in 1990 from −0.06 in South Asia to 2.94 in Eastern Europe and Central Asia. It is noteworthy that the poverty headcount ratio in South Asia remains almost insensitive to changes in inequality, and that the elasticity is even negative due to its very low mean income (see Figure 5). A trend that dominates all others is observed in Eastern Europe and Central Asia, where the Gini elasticity of poverty was at its highest (7.54) in 1985, but fell to 1.36 in 1995. This strong decrease in the Gini elasticity in this region is caused by a strong rise in inequality and a fall in mean income (see Figures 4.5 and 4.6).

The decomposition of poverty trends

Table 4.3 presents the results of the decomposition based on Equation (4.7). For all the regions except Eastern Europe and Central Asia, the largest effect on poverty results from changes in income alone. Nevertheless, the size of the effect caused by a change in Gini is non-negligible in most regions apart from East Asia and South Asia. The finding that the effects on poverty through income changes dominate the effects through changes in Gini is a common finding in the decomposition literature cited in the Introduction. The relatively small contribution of changes over time in Gini to poverty changes is the combined result of the fact that these changes themselves are relatively small and of relatively low Gini elasticities of poverty. The exception to this general pattern is clearly Eastern Europe and Central Asia, a region that has a large Gini elasticity and has experienced a large increase in Gini, as a result of which the change in Gini is responsible for about a third of the increase in poverty in this region. The fact that the all-region residual of the decomposition is equal to zero is not by construction but happens coincidentally to be the case. The fact that most regional residuals are not equal to zero indicates that there may be second-order effects at work, but examining this is beyond the scope of this study.

Table 4.3 Decomposition of regional poverty trends in income and inequality effects based on Equation (4.7)

	Period	**Change in poverty caused by a:**				**Assume, following Collier–Dollar (2002)**
		Observed change in poverty	**Change in income**	**Change in Gini**	**Residual**	$\varepsilon^{H}_{\mu}(r,t) = -2$ & $\varepsilon^{H}_{G}(r,t) = 0$
East Asia	1981–98	−1.91	−2.58	0.06	0.60	−7.17
Eastern Europe and Central Asia	1985–98	2.07	0.93	0.74	0.40	0.92
Central and Latin America	1981–97	−0.42	−0.32	−0.11	0.01	−0.67
Middle East and North Africa	1985–97	2.44	2.93	−0.68	0.18	2.82
South Asia	1983–97	−0.15	−0.28	−0.04	0.17	−1.20
Sub-Saharan Africa	1980–96	−0.05	−0.43	0.22	0.17	−0.98
All regions	1980–98	−1.30	−1.46	0.16	0.00	−2.83

Note: All numbers are percentage points per year.

The last column of Table 4.3 reports on the predicted poverty reduction when using an income elasticity of poverty equal to −2, as used by Collier and Dollar (2001, 2002) in their policy simulations. As they do implicitly, we set the Gini elasticity of poverty equal to zero. A comparison of their implied predictions for the period 1980–8 in column 3 with our predictions on the one hand and the actual poverty reduction on the other shows clearly that using the Collier–Dollar elasticity considerably overestimates rates of poverty reduction over time (by a factor two when we pool all regions), which should caution against expressing euphoric sentiments on the basis of their simulations.

Examining the role in regional poverty trends of regional variation in the income and Gini elasticities is one of the main objectives of this study. In order to investigate this we perform the decomposition as outlined earlier; see Equation (4.8). This decomposition naturally depends on the base year chosen (here 1985), but the main conclusions of our study are independent of the choice of base year. The results of this extended decomposition are reported in Table 4.4. For 'all regions' the effect of changes in elasticies over time is of minor importance. Hence we reach the same conclusion as above – the all-region poverty reduction of about −1.3 percentage points a year is chiefly the result of an increase in mean income, −1.5 percentage points a year, whereas changes in Gini have resulted in a relatively small increase in poverty of about 0.2 percentage points a year. The effects on poverty of changes in the elasticities are small.

For East Asia, income growth would have resulted in a poverty decrease of −3.81 percentage points a year had the all-region income elasticity prevailed in this individual region. However, its relatively low income elasticity yielded a 'loss' in poverty reduction of about 1.23 percentage points a year (0.75 + 0.48). The effect of its increase in Gini, taken on its own, would have caused a 0.25 percentage point increase per year in poverty had the all-region Gini elasticity prevailed in this region; however, this effect was somewhat mitigated by a relatively low Gini elasticity, as a result of which no more than a 0.06 percentage point increase in poverty per year is caused by increasing inequality.

Eastern Europe and Central Asia experienced a strong increase in poverty over the period 1985–98. Only around 0.5 percentage points are solely a result of a decrease in income, and 1.5 percentage points a year are because of the relatively high responsiveness to this income change. Over time, the income elasticity has decreased strongly (see Table 4.1), resulting in the smaller increase in poverty of about 1 percentage point a year. These figures show that, as inequality rose, the economic contraction of the region became increasingly associated with less extra poverty (per percentage point of contraction, that is). The direct effect of a change in inequality has been small, but the relatively high Gini elasticity caused poverty to increase relatively strongly (1.28 percentage points a year). However, most of this

Table 4.4 Decomposition of regional poverty trends in income and inequality effect, taking into account changes in the income and Gini elasticity of poverty, based on Equation (4.8) (all numbers percentage points per year)

	Period	**Observed change in poverty**	**Change in poverty because of a**						**Residual**
			Change in income			**Change in Gini**			
			$\varepsilon_{\mu}^{H}(0)$	$\varepsilon_{\mu}^{H}(r,0) - \varepsilon_{\mu}^{H}(0)$	$\varepsilon_{\mu}^{H}(r,t) - \varepsilon_{\mu}^{H}(r,0)$	$\varepsilon_{G}^{H}(0)$	$\varepsilon_{G}^{H}(r,0) - \varepsilon_{G}^{H}(0)$	$\varepsilon_{G}^{H}(r,t) - \varepsilon_{G}^{H}(r,0)$	
East Asia	1981–98	−1.91	−3.81	0.75	0.48	0.25	−0.14	−0.05	0.60
Eastern Europe & Central Asia	1985–98	2.07	0.49	1.45	−1.01	0.10	1.28	−0.64	0.40
Central & Latin America	1981–97	−0.42	−0.35	0.03	0.00	−0.02	−0.09	0.00	0.01
Middle East & North Africa	1985–97	2.44	1.49	1.48	−0.04	−0.15	−0.65	0.12	0.18
South Asia	1983–97	−0.15	−0.64	0.36	0.00	0.14	−0.18	0.00	0.17
Sub-Saharan Africa	1980–96	−0.05	−0.52	0.10	−0.01	0.20	0.03	−0.02	0.17
All regions	1980–98	−1.30	−1.50		0.04	0.21		−0.04	0.00

Notes: $\varepsilon_{\mu}^{H}(0) = \varepsilon_{\mu}^{H}(z,\mu_{0},\sigma_{0})$, $\varepsilon_{\mu}^{H}(r,0) = \varepsilon_{\mu}^{H}(z,\mu_{r0},\sigma_{r0})$, $\varepsilon_{\mu}^{H}(r,t) = \varepsilon_{\mu}^{H}(z,\mu_{rt},\sigma_{rt})$.
$\varepsilon_{G}^{H}(0) = \varepsilon_{G}^{H}(z,\mu_{0},\sigma_{0})$, $\varepsilon_{G}^{H}(r,0) = \varepsilon_{G}^{H}(z,\mu_{r0},\sigma_{r0})$, $\varepsilon_{G}^{H}(r,t) = \varepsilon_{G}^{H}(z,\mu_{rt},\sigma_{rt})$.

Base year 0 is 1985.

increase vanished over time because of the strong decrease in the Gini elasticity.

An increase in income in Central and Latin America is the major reason for the decline in poverty in this region by about 0.4 percentage points a year. The Middle East and North Africa (or at least those countries for which we have data) experienced a strong increase in poverty. Most of this results from a decrease in income, but a large proportion of this is caused by a high income elasticity, pushing a relatively large number of people into poverty when income declined. Falling income inequality strongly diminished the increase in poverty resulting from a high income elasticity. South Asia experienced a tiny decrease in poverty on the back of some income growth associated with a low income elasticity. Sub-Saharan Africa experienced virtually no change in poverty over the period 1980–96, a worrying observation. Our decomposition shows that income growth yielded some poverty reduction, but the increase in inequality increased poverty. Quantitatively more importantly, this increase in inequality has also led to a decreased responsiveness of poverty to income growth.

Conclusions

The long- and short-run impact of globalization on changes in mean income and inequality is still hotly debated, but the evidence does suggest considerable regional contrasts in the actual size of these globalization-induced changes. A major concern that has received relatively little attention when evaluating the impact of globalization on the world's poor is the variation in the responsiveness of poverty to changes in mean income and inequality across regions and, to a lesser extent, over time. This variation is in line with variations in the shape and location of the initial distribution of income. We have therefore examined the role in poverty reduction of changes in income and inequality, as well as that of variation in the responsiveness of poverty to these changes, across all major developing regions, over the period 1980–98. We have computed the income and inequality elasticity of poverty for each region over time, and decomposed observed regional poverty trends, explicitly quantifying the effects on poverty changes resulting from cross-regional variation in the income and inequality elasticity of poverty in addition to the effects of variation in changes in income and inequality themselves. We have assumed income to be log-normally distributed in order to be able to calculate the income and Gini elasticity of the poverty headcount ratio, and used a first-order approximation in the decomposition of poverty over time.

The decomposition of observed trends in the US$2/day poverty headcount measure during the 1980s and 1990s reveals that:

- *East Asia* saw its poverty headcount fall from 85 per cent in 1981 to 50 per cent in 1998. Most of this was because of income growth alone, but the growth impact on poverty reduction was mitigated by the effect of rising inequality on the responsiveness of poverty to income growth.

- *Eastern Europe and Central Asia* experienced an increase in poverty from 1 per cent in 1987 to 26 per cent in 1998. Rather unfortunately, most of this increase was an indirect effect of its low levels of initial inequality, which, through causing poverty to respond strongly to income changes, meant that the severe contraction it experienced was felt so acutely. A large proportion of the population, before the contraction came, had an income not much above the poverty line. Paradoxically, the 'protection' it obtained from rising inequality meant that fewer people were hurt by the contraction of the late 1990s than that of the early 1990s. This effect is of the same order of magnitude as the total effect of the contraction on its own (that is, the effect of the contraction on poverty, assuming that the growth elasticity of poverty reduction is a universal constant).
- *Central and Latin America* saw its poverty fall from 39 per cent in 1981 to 32 per cent in 1997. This was mainly an income growth effect.
- The *Middle East and North Africa* experienced a poverty increase from 13 per cent in 1985 to 44 per cent in 1997. Most of this was because of the economy contracted, but its sharply falling inequality (from which it suffered because the economy contracted) diminished this increase in poverty.
- In *South Asia* average growth of income per capita has been negligible and the distribution of incomes remained unchanged, hence virtually no changes to its poverty headcount measure of over 80 per cent.
- In *sub-Saharan Africa* poverty remained at around 68 per cent, a negligible decrease of only 1 percentage point over the entire period 1980–98. It would have experienced a decrease in poverty resulting from income growth that would have at least registered, but rising inequality cancelled this out almost exactly.

We carried out this decomposition exercise primarily to illustrate a number of important implications of the recent literature that quantifies the proximate causes of poverty changes, discussed in the Introduction. The view that globalization is good for the poor because it promotes approximately distribution-neutral income growth needs to be nuanced. Our findings reinforce what has been known since Ravallion (1997) and properly understood since Bourguignon (2003) and Epaulard (2003) that inequality has an important indirect effect on poverty through diminishing prospects for pro-poor growth. It is possible to go even further and identify other features of the income distribution in place at the onset of episodes of globalization-induced changes in average income and inequality that affect poverty's response. In a cross-country exercise such as ours, with only a handful of parameters known, the location of the mean of the distribution relative to the poverty line is the most obvious candidate. However, when the entire income distribution can be approximated – for example, through kernel smoothing techniques – as has been the practice in the most recent within-country decomposition exercises cited in the Introduction, the impact on poverty of globalization-induced changes in the location and shape of the income distribution can be quantified more precisely than we have been able to do here. The value of our study should be seen to lie primarily in the fact that we have given an indication of the order of magnitude of the impact of these changes, and of the extent of their variation. It is hard to overstate the importance of the insight that this variation can be *predicted*; that is, before a country opens its economy to the blessings or otherwise that globalization can bring.

Appendix A

Table 4.A1 Estimation results of the trend models

Dependent variable	**Poverty H_{rt}**		**Mean income μ_{rt}**		**Gini G_{rt}**	
Explanatory variable	**Parameter estimate**	**Standard error**	**Parameter estimate**	**Standard error**	**Parameter estimate**	**Standard error**
Constant	167.85	1723.29	−1103.88	−3340.63	−1209.12	412.70
Region specific constant (dummy variables)						
East Asia	3933.74	1777.44	−4879.44	3415.38	−23.81	471.44
Eastern Europe + Central Asia	−4603.63	1818.42	18637.39	4671.38	−2496.28	1184.07
Central and Latin America	752.06	1953.05	−2402.81	5438.99	1631.96	541.38
Middle East and North Africa	−5393.28	2948.50	15544.06	6229.16	3154.84	596.41
South Asia	241.79	1724.14	523.59	3342.12	714.81	423.27
Sub-Saharan Africa	0.00		0.00		0.00	
Region specific trend (dummy variable times year of obs)						
East Asia	−2.03	0.22	3.04	0.36	0.64	0.11
Eastern Europe + Central Asia	2.23	0.29	−8.70	1.64	1.88	0.56
Central and Latin America	−0.44	0.46	1.86	2.16	−0.18	0.17
Middle East and North Africa	2.64	1.21	−7.18	2.65	−0.96	0.22
South Asia	−0.16	0.03	0.31	0.05	0.27	0.05
Sub-Saharan Africa	−0.05	0.86	0.59	1.68	0.63	0.21
R-squared	0.91		0.83		0.75	

Notes

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1. Contreras (2003) for Chile; Bigsten *et al*. (2003) for Ethiopia; Alwang *et al*. (2002) for Zimbabwe, and Gibson (2000) for Papua New Guinea are but a handful of recent examples that apply Datt and Ravallion’s decomposition methodology to poverty changes in other contexts. The decomposition proposed by Datt and Ravallion is not exact, that is, a residual change in poverty is left unexplained, and,

as an alternative, Kolenikov and Shorrocks (2005) propose an exact poverty decomposition which they apply to regions in Russia, taking also into account changes in local prices.

2. The figure has been used by a number of authors; our direct source is Bourguignon (2003).

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5

Looking Beyond Averages in the Trade and Poverty Debate

Martin Ravallion

Introduction

Some observers have argued that poor people share amply in the gains from external trade liberalization in developing countries, while others argue that the benefits are captured by those who are not particularly poor. Various methods have been used to address the issue empirically, including cross-country comparisons, aggregate time series analyses at the country level, and various simulation methods using both partial and general equilibrium analyses.[1] A common feature of all these methods is that they attempt to measure the impact of higher trade volume (or policies to promote trade openness) on some aggregate measure of inequality or poverty.

This chapter aims to expose the inadequacies of the conventional 'macro lens' on the trade–poverty relationship in developing countries. We have learnt from the (massive) expansion in household-level data availability for developing countries since the start of the 1990s that there is considerable heterogeneity among poor people in their net trading positions in most markets. Some of the poor are net consumers of food, for example, while some are net producers. This heterogeneity carries an important lesson for the debate on trade and poverty: conventional poverty and inequality aggregates may hide much more than they reveal.

The chapter is structured as follows. The following section reviews evidence from cross-country comparisons, and the subsequent section examines the same issues using aggregate time series data for China. Then we turn to two case studies using the 'micro lens' of household-level data, in combination with a general equilibrium analysis of the impacts of trade reform in China and Morocco. The final section concludes.

Macro lens 1: cross-country comparisons

The extensive literature using cross-country comparisons has left ambiguous implications for the impact of trade openness on poverty within countries.

A number of studies have combined survey-based measures of income inequality at country-level with data on trade and other control variables to assess the distributional impacts of 'trade openness' – the latter is typically measured by 'trade volume', defined by exports plus imports as a share of GDP.[2] An influential study by Dollar and Kraay (2002, 2004) finds little or no effect of higher trade volume on inequality. Other studies have reported adverse effects on inequality. Lundberg and Squire (2003) find evidence that external trade tends to increase inequality. Some studies also find evidence that higher trade volume is increasing inequality in poor countries, but that the reverse holds at higher mean incomes (Ravallion, 2001; Milanovic, 2005).

Of course, the implications for poverty will also depend on the growth impacts. Empirical support for the view that trade expansion promotes economic growth can be found in (among others) Dollar (1992), Sachs and Warner (1995), Harrison (1996) and Edwards (1998). In a meta-study of all the cross-country growth regressions with an average of seven regressors (chosen from sixty-seven candidates drawn from the literature on cross-country growth regressions) Sala-í-Martín *et al.* (2004) report that trade volume is significant in two-thirds of the regressions, though is not among their subset of eighteen robust predictors of economic growth.

Whether the growth effects are strong enough such that poverty falls with trade openness remains unclear. The findings of Dollar and Kraay (2004) and others, that a higher volume of trade does not affect inequality but rather fosters growth make it very likely that trade expansion lowers absolute poverty (meaning that the poverty line is fixed in real terms).[3] However, if, as some studies have claimed, the growth gains are captured more by the non-poor then this will attenuate the impact on poverty.

There are continuing concerns about the data and econometric specifications in this literature. Results have differed across datasets and regression specifications, with little effort being made to reconcile the results. There are numerous differences in the control variables and differences in the assumptions made about the error term. On the latter, some studies have allowed for country-level fixed effects (such as Dollar and Kraay, 2002) while others have not (such as Milanovic, 2005). Allowing for country effects has the attraction that the results are then robust to the latent heterogeneity in (time-invariant additive) country characteristics, but it can also make it harder to detect the true relationship of interest when there is noise in the data. Differences in survey design and processing between countries and over time can add considerable (time-varying) noise to the measures of poverty and inequality. There is also the issue of whether trade volume can be treated as exogenous in these cross-country regressions. Higher trade volume may be a *response to* growth rather than a cause of it. The policy implications are unclear, since trade volume is not a policy variable – see the discussion in Rodrīguez and Rodrik (2001). The attribution of either growth or inequality impacts to trade policy reforms is clearly problematic.

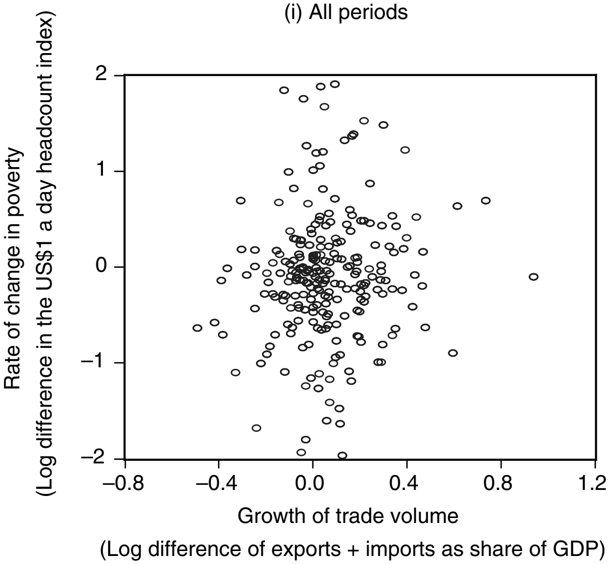
This study makes no attempt to resolve these issues. However, it is of descriptive interest to at least see what the available data suggests about the relationship between trade and poverty. A convincing analysis of the relationship between the *levels* of poverty and trade volume would clearly require a large number of control variables to account for country heterogeneity, and even then there will no doubt be concerns about unobserved heterogeneity. Instead, the following analysis will bundle all time-invariant country characteristics into an additive error component and then examine the relationship between the changes over time in poverty and changes in trade volume, robustly to all latent heterogeneity due to time-invariant additive effects on poverty. The obvious place to start is the most common single measure of poverty and the most widely used measure of trade volume. The poverty measure is the percentage of people living on less than US$1.08 at 1993 PPP, and the trade measure is the sum of exports plus imports as a share of GDP.[4]

Figure 5.1 plots the proportionate changes in the poverty measure (difference in logs between two surveys) against the proportionate change in trade volume matched as closely as possible to the survey dates. The data used in the top panel of Figure 5.1 are for 178 periods defined by two surveys with more than one observation for most countries; there are seventy-five countries represented. The lower figure gives the results for the longest period for each country.

There is no sign of any relationship in the top panel of Figure 5.1. The simple correlation coefficient across the 178 periods is 0.09. This does not change much if one allows for lagged effects of trade expansion by regressing the change in poverty on both the current and lagged changes in trade volume; the multiple correlation coefficient is 0.13 ($R^2 = 0.02$). Nor does the result change if one adds controls for the initial poverty measure, initial mean income (private consumption per capita from national accounts), initial inequality (the Gini index), and the interactions between the latter two variables and the change in trade volume.[5] Again, the parameters related to trade expansion were individually and jointly insignificant. There is clearly a lot of noise in the short-term periods. Arguably, the lower panel of Figure 5.1 using the seventy-five country-specific longest periods is more reliable, and it is arguably closer to the tests found in the literature using cross-country comparisons. Then a negative correlation emerges, with a correlation coefficient of -0.20. The regression coefficient of the change in log headcount index on the change in log trade volume is -0.84, which is significantly different from zero at the 3 per cent level ($t = -2.18$).[6] This is driven entirely by a correlation between growth rates in the survey mean and growth in the trade share; controlling for the change in the (log) survey mean the correlation vanishes ($t = -0.80$).

However, the correlation found in these long periods appears to be rather fragile. Just adding controls for initial conditions makes the correlation

(i) All periods



(ii) Longest periods only

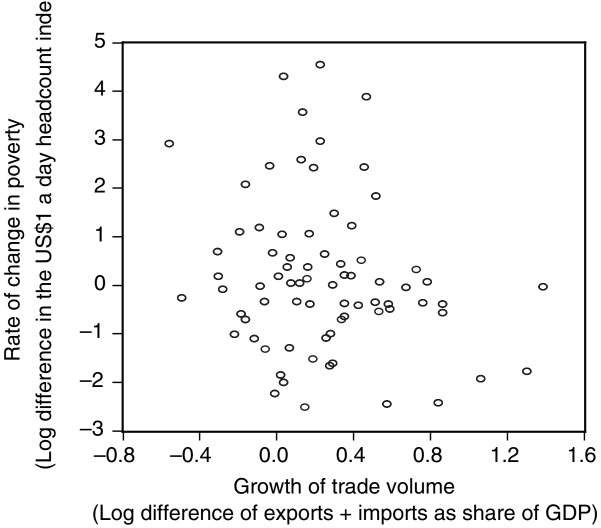


Figure 5.1 Rate of change in poverty against change in trade volume

vanish. For example, if one controls for the initial level of poverty, then the regression coefficient of the change in log headcount index on the change in log trade volume drops to −0.41, and is not significantly different from zero ($t = -1.05$). Adding the further control variables mentioned above does not make the relationship any stronger. It is clear that there is considerable variance in rates of poverty reduction at a given rate of expansion in trade volume.

The evidence presented above is clearly nothing like an acceptable test for the causal impact of trade volume on poverty. That would require more complete control variables for other time-varying factors correlated with both poverty reduction and trade expansion. However, there can be no presumption that doing so would reveal stronger evidence that trade expansion is poverty-reducing. Indeed, if a higher volume of trade is positively correlated with omitted factors that are good for growth, then correcting for this would suggest that trade expansion is in fact poverty-increasing. And even with extra controls, the aforementioned problems of measurement error suggest that these data may well have rather low power to detect the true relationship. All one might reasonably conclude is that the graphs in Figure 5.1 cast doubt on any generalization that greater trade openness necessarily means lower poverty in developing countries. There is clearly much more to the story. Rather than attempting to explore the issue further using cross-country regressions, the rest of this study follows rather different approaches.

Macro lens 2: time series analysis for China

China is attractive as a case study in that going back to the early 1980s allows one to span both a large expansion in trade volume and one of the most dramatic poverty reductions in history; while China's poverty rate today is probably slightly lower than the average for the world as a whole, it was a very different story around 1980, when the incidence of extreme poverty in China was one of the highest in the world.[7] It has been argued by a number of observers that the country's greater openness to external trade since Deng Xiaoping's 'open door' policy of the early 1980s was the key to the subsequent success against poverty (World Bank, 2002; Dollar, 2004).

This section attempts to test the claim that China's greater trade openness has been an important factor in reducing poverty. The test uses aggregate time series data spanning the period 1980–2000. First, the poverty measures are described. Then the role of trade openness as a potential explanatory factor is explored, in the context of some competing explanations for China's (undeniable) success against absolute poverty.

Table 5.1 gives trade volume and estimates of poverty measures for China over the period 1980–2001; the poverty measures are from Ravallion and Chen (2006) where the data and methods are described in full.[8] The table

Table 5.1 Trade and poverty in China, 1981–2001

	Trade volume (%)	**GDP per capita (yuan as at 1990)**	**Gini index (%)**	**Poverty measures (%)**					
				National			**Rural**		
				H	***PG***	***SPG***	***H***	***PG***	***SPG***
1981	15.12	808	27.98	52.84	16.17	6.81	64.67	19.99	8.44
1982	14.57	868	25.91	38.14	10.19	3.92	47.78	12.85	4.95
1983	14.49	949	26.02	30.42	7.80	2.85	38.38	9.89	3.63
1984	16.75	1,079	26.89	24.11	5.83	2.01	30.93	7.51	2.58
1985	23.05	1,208	26.45	17.55	4.04	1.33	22.67	5.23	1.71
1986	25.29	1,295	29.20	18.53	4.63	1.65	23.50	5.99	2.16
1987	25.78	1,423	28.90	16.77	4.10	1.45	21.91	5.33	1.83
1988	25.6	1,558	29.50	17.71	4.23	1.47	23.15	5.52	1.89
1989	24.58	1,597	31.78	23.37	6.60	2.65	29.17	7.98	3.05
1990	29.98	1,634	31.55	22.15	5.65	2.04	29.18	7.60	2.76
1991	33.43	1,760	33.10	22.16	6.37	2.61	29.72	8.52	3.43
1992	34.24	1,985	34.24	20.75	5.61	2.27	28.18	7.59	3.03
1993	32.54	2,228	36.74	20.01	5.72	2.29	27.40	7.84	3.13
1994	43.59	2,480	37.60	17.01	5.26	2.32	23.32	7.24	3.19
1995	40.19	2,711	36.53	14.74	4.08	1.58	20.43	5.66	2.16
1996	35.55	2,940	35.05	9.79	2.52	1.07	13.82	3.55	1.50
1997	36.22	3,167	35.00	9.30	2.41	0.87	13.33	3.45	1.23
1998	34.28	3,381	35.37	8.10	1.88	0.65	11.58	2.61	0.81
1999	36.43	3,587	36.37	7.63	1.79	0.60	11.40	2.66	0.85
2000	43.93	3,847	38.49	8.49	2.33	0.89	12.96	3.55	1.33
2001	n.a.	4,105	39.45	7.97	2.13	0.80	12.49	3.32	1.21

Notes: Trade share is defined as exports plus imports as percentage of GDP; *H* = headcount index; *PG* = poverty gap index; *SPG* = squared poverty gap index; n.a. = not available.

Source: The poverty and inequality measures are from Ravallion and Chen (2006); other data are from the World Bank's SIMA database.

gives both national poverty measures and the measures for rural areas only. Results are given for three poverty measures: the *headcount index* (*H*) is the percentage of the population living in households with income per person below the poverty line. The *poverty gap index* (*PG*) gives the mean distance below the poverty line as a proportion of the poverty line (where the mean is taken across the whole population, counting the non-poor as having zero poverty gaps). The third measure is the *squared poverty gap index* (*SPG*), in which the individual poverty gaps are weighted by the gaps themselves, to reflect inequality among the poor (Foster *et al.*, 1984).

Figure 5.2 plots both the trade share, which rises from 15 per cent to 44 per cent over the period, and the national headcount index, which falls from 53 per cent to 8 per cent. Certainly, a cursory look at Figure 5.2 might be taken to support the view that expanding trade has reduced poverty. The

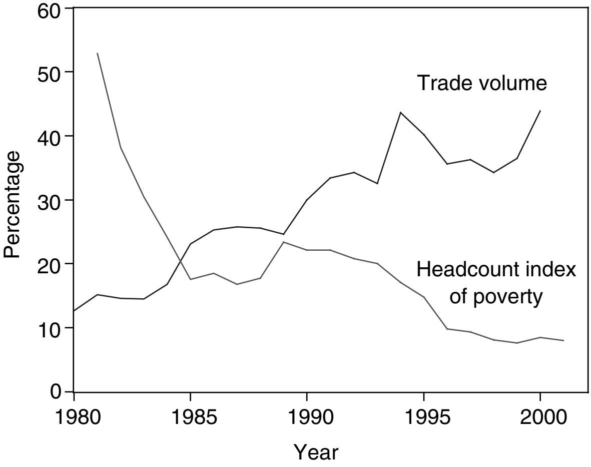


Figure 5.2 Poverty rate and trade volume in China, by year

simple correlation coefficient is −0.75. The regression coefficient of the log headcount index on the log trade share is −1.11, with a *t*-ratio of 5.20. However, trade reform in China must be seen in the context of the many other factors that helped to reduce poverty. Here the time profile of China's poverty reduction is instructive. As can be seen in Table 5.1, there was a dramatic decline in poverty in the first few years of the 1980s; the rural poverty rate fell from 76 per cent in 1980 to 23 per cent in 1985. The late 1980s and early 1990s were more difficult periods for China's poor. Progress was restored around the mid-1990s, though the late 1990s saw a deceleration (Figure 5.2).[9] The early 1980s saw high growth in agricultural output and rapid rural poverty reduction in the wake of introducing the 'household responsibility system', whereby farmers became the residual claimants on output beyond stipulated quotas. (Agricultural land had previously been farmed by organized brigades, sharing the output more-or-less equally, with weak incentives to produce.) The literature has pointed to the importance of these reforms in stimulating rural economic growth at the early stages of China's transition (Fan, 1991; Lin, 1992; Chow, 2002).

The sectoral composition of economic growth has clearly played an important role in overall poverty reduction. Ravallion and Chen (2006) divided GDP into 'primary' (mainly agriculture), 'secondary' (manufacturing and construction) and 'tertiary' (services and trade) sectors. The primary sector share fell from 30 per cent in 1980 to 15 per cent in 2001, though not monotonically. Almost all of this decline was made up for by an increase in the tertiary sector share. Ravallion and Chen (2006) used a regression decomposition method to test whether the source of growth mattered to the rate of poverty reduction. They found that primary sector growth had a far higher impact (by a factor of about four) than either the secondary or tertiary sectors. The regression coefficient on the (share-weighted) growth rate in primary sector GDP was four times higher than for either the secondary or tertiary sectors, and the impacts of the latter two sectors were similar (and one cannot reject the null hypothesis that they have the same impact). With a relatively equitable distribution of access to agricultural land and higher incidence and depth of poverty in rural areas it is plausible that agricultural growth would have brought large gains to China's poor.

Agricultural pricing policies also played a part. Until recently, the government operated a domestic foodgrain procurement policy by which farmers were obliged to sell fixed quotas to the government at prices that were typically below the local market price. For many farmers, this was an inframarginal tax, given that they produce more foodgrains than their assigned quota; for others, it affected production decisions at the margin. Reducing this tax by raising procurement prices stimulated primary sector GDP. Ravallion and Chen (2006) find a strong correlation between the growth rate of primary sector output and the real procurement price of foodgrains (nominal price deflated by the rural Consumer Price Index – CPI). There is both a current and a lagged effect. The impact on agricultural incomes in turn meant lower poverty measures.

Another factor in China's success against poverty was macroeconomic stability. When one controls for procurement price changes, Ravallion and Chen (2006) find an adverse effect of lagged changes in the rate of inflation for all three poverty measures. There are also strong (pro-poor) distributional effects of higher procurement prices and inflationary shocks. This is consistent with evidence for other developing countries, indicating that inflation hurts the poor.[10] The adverse impacts on poor people of inflationary shocks probably stem from short-term stickiness in some of the key factor and output prices determining their real incomes.

Returning to the question of what part trade reform has played in China's success against poverty, there are reasons to be sceptical of the correlation given in Figure 5.2. We have seen that a number of other factors were at work. Granted, trade reforms had also started in the early 1980s as part of Deng Xiaoping's 'open door' policy. These mainly entailed favourable exchange rates and tax treatment for selected exporters, and the creation of the first special economic zone – Shenzhen, near Hong Kong. However, the bulk of the trade reforms did not occur in the early 1980s, when poverty was falling so rapidly, but came later, notably with the extension of the special economic zone principle to the whole country (in 1986) and from the mid-1990s, in the lead up to China's accession to the World Trade Organization (WTO). Table 5.2 shows that mean tariff rates fell only slightly in the 1980s

Table 5.2 China's barriers to external trade

	Mean tariff rates (%)				**Incidence of non-tariff barriers (%)**			
	1980–3	**1984–7**	**1988–90**	**1991–3**	**1980–3**	**1984–7**	**1988–90**	**1991–3**
Primary	22.7	20.6	19.1	17.8	n.a.	19.7	58.9	40.7
Manufactured	36.6	33.2	34.3	37.1	n.a.	16.1	34.4	19.2
All products	31.9	29.2	29.2	30.6	n.a.	17.2	42.6	26.4

Source: Weighted averages from UNCTAD (1994).

and non-tariff barriers in fact increased. And some of the trade policies of this early period were unlikely to have been good for either equity or efficiency.[11] Arguably, the bulk of China's trade reform has been after times of rapid poverty reduction and, indeed, in times of relatively stagnant poverty measures.

On closer inspection, Figure 5.2 looks suspiciously like a spurious correlation, driven by common time trends. The Durbin–Watson statistic from the regression of log headcount index on log trade volume is 0.42. Allowing for deterministic trends and one year's lag in first differences, the Johansen test rejects cointegration between the log of the headcount index and the log of trade share; the same holds for both the poverty gap and squared poverty gap. (Nor, for that matter, is log GDP per capita cointegrated with trade share.) These data are not consistent with the existence of a stable, long-run relationship between trade volume and poverty in China. The correlation between trade and poverty vanishes if one looks instead at the changes over time. The simple correlation between changes in trade volume and changes in the log headcount index is 0.00!

Allowing for both current and lagged effects of the aforementioned variables in a multivariate dynamic model, Table 5.3 gives estimates of the following regression for the changes over time in the log poverty measures:

$$\begin{aligned}\Delta \ln P_t &= \alpha_0 + \alpha_1 \Delta \ln P_{t-1} + \beta_0 \Delta \ln PP_t + \beta_1 \Delta \ln PP_{t-1} \\ &\quad + \gamma_0 \Delta^2 \ln CPI_t + \gamma_1 \Delta^2 \ln CPI_{t-1} + \gamma_0 \Delta \ln T_t + \gamma_1 \Delta \ln T_{t-1} + \varepsilon_t \qquad (5.1)\end{aligned}$$

where *P* is the poverty measure, *PP* is the real procurement price for foodgrains (nominal price deflated by rural CPI), *CPI* is the rural CPI (so Δ ln *CPI* is the inflation rate) and *T* is the trade volume (ratio of exports plus imports to GDP). Table 5.3 also gives a more parsimonious model that passes the joint parameter tests; this specification keeps the trade variables but drops other (jointly and individually) insignificant variables. Again, for all three poverty measures, there is no sign of any significant effect of current or lagged trade volume on poverty in China. Notice also that Equation (5.1)

Table 5.3 Time series regressions for China's poverty measures

	Headcount index		**Poverty gap index**		**Squared poverty gap index**	
Constant	−0.048	−0.063	−0.050	−0.061	−0.041	−0.053
	(−1.230)	(−1.834)	(−0.921)	(−1.332)	(−0.663)	(−1.048)
Poverty measure (−1)	0.140	–	0.089	–	0.093	–
	(0.735)		(0.431)		(0.388)	
Real procurement price	−0.728	–	−0.881	–	−0.678	–
	(−1.509)		(−1.313)		(−0.878)	
Real procurement price (−1)	−1.222	−1.412	−1.613	−1.837	−1.973	−2.162
	(−3.069)	(−3.773)	(−2.887)	(−3.660)	(−3.067)	(−3.913)
Inflation rate	0.294	–	0.378	–	0.325	–
	(0.530)		(0.485)		(0.362)	
Inflation rate (−1)	1.836	1.404	2.193	1.646	2.257	1.865
	(2.671)	(2.587)	(2.298)	(2.272)	(2.055)	(2.338)
Trade volume	−0.319	−0.207	−0.173	−0.034	0.096	0.018
	(−1.296)	(−0.879)	(−0.499)	(−0.107)	(−0.240)	(0.053)
Trade volume (−1)	0.111	0.028	0.039	−0.034	0.001	−0.057
	(0.449)	(0.117)	(0.113)	(−0.104)	(0.003)	(−0.159)
R^2	0.666	0.560	0.609	0.530	0.601	0.562
D–W	2.501	1.960	2.661	2.256	2.502	2.079

Notes: All variables in logs and differenced over time. *T*-ratios in parentheses.

does not include measures of aggregate economic growth, since it may be argued that there might be important channels through which trade reduced poverty. However, it is of interest to repeat these tests, and adding the difference in log mean income to Equation (5.1) to see if there is any sign of a distributional effect of trade volume. On doing so, one again finds that both current and lagged trade volume are highly insignificant. (The effects of procurement prices and inflation remained strong, however; indeed, they became more significant when the change in log mean was added to Equation (5.1).)

Three caveats are of note. First, trade volume may well be endogenous in this test, though it is not clear that correcting for the bias would imply that trade played a more important role against poverty in China. This would require that changes in trade volume are positively correlated with the omitted variables. However, one would probably be more inclined to argue that trade volume is negatively correlated with the residuals in a regression for poverty, on the grounds that other (omitted) growth-promoting policies are more likely simultaneously to increase trade and reduce poverty. Second, the gains to China's poor may well take a longer time to realize than these regressions allow. For example, longer lags may be needed to capture the gains through higher factor productivity associated with the trade-induced adoption of new technologies. Third, the open-door policy may well have had other poverty-reducing effects not evident at higher trade volumes. For example, greater openness may have facilitated the rise in domestic procurement prices for foodgrains, to help line up domestic prices with world prices. This effect might not be reflected in trade volume. (Trade expansion is not strictly necessary to shift the prices of tradable goods.)

Though recognizing these caveats, the evidence for China clearly casts doubt on the view that greater openness to external trade has been the driving force in poverty reduction. Indeed, it is hard even to make the case from the available data that, on balance, trade has helped the poor. More plausible candidates to explain China's success against poverty can be found in the role played by the agrarian reforms starting in the late 1970s, subsequent agricultural growth (which had an unusually large impact on poverty, given a relatively equitable allocation of land achieved in the wake of the early reforms to decollectivize agriculture), reduced taxation of farmers, and macroeconomic stability.

Micro lens 1: household impacts of WTO accession in China

Aggregate inequality or poverty need not change with trade reform even though there are both gainers and losers at all levels of living. Numerous sources of such 'horizontal' impacts of policy reform can be found in developing country settings. For example, geographic disparities in access to human and physical infrastructure affect prospects for participating in the opportunities created by greater openness to external trade. To give another example, differences in the demographic composition of families will influence consumption behaviour, and hence the welfare impact of the shifts in relative prices often associated with trade openness.

We now turn to a very different method, which has often been used as a macro lens, but can also throw useful light on the micro impacts. By this method, the price and wage effects of trade reform are first simulated using a computable general equilibrium (CGE) model and are then passed on to a household survey to estimate welfare effects at household level.[12] One typically then aggregates up to obtain the effects on measures of poverty. However, as we shall see, much can also be learnt from the disaggregated impact estimates. The strength of this approach is that minimum aggregation can be imposed on the analysis of welfare impacts. Even if the trade reforms have little effect on income distribution in the aggregate, the impacts may vary across household types and regions, given the likely heterogeneity in net trading positions in relevant markets. In China, for example, the economic geography of the impacts of policy reforms is high on the domestic policy agenda. Considerable geographic diversity in the welfare impacts of economy-wide reforms can be anticipated. An analysis that simply averaged out such differences would miss a great deal of what matters to the policy debate.

This approach has its limitations too. Four limitations should be noted: first, the CGE and household-level analyses are not integrated, which would require an extraordinarily high dimensional CGE model in this case (with 85,000 households in the survey).[13] While the micro simulations are based on economic assumptions that are consistent with the CGE model – notably that households take prices as given and those prices clear all markets – no attempt is made to assure full consistency between the micro-analysis and the CGE model's predictions. Second, the method does not readily identify certain dynamic gains from greater trade openness. There are ways that the economy might respond to trade-induced price and wage changes that are not captured. For example, trade may facilitate learning about new technologies and innovation that brings longer-term gains in productivity. There may also be response through labour mobility, which could be expected to attenuate horizontal welfare impacts at given real income. Third, the method relies on linear approximations in a neighbourhood of an initial equilibrium. This may be deceptive if the price or wage changes are large, or the household was initially out-of-equilibrium, such as resulting from rationing (including involuntary unemployment of labour). In principle, there are ways of dealing with these problems by estimating complete demand and supply systems. This may prove to be a fruitful avenue for future research, and there are some examples in the literature,[14] though it should be noted that these methods generate their own problems, such as arising from incomplete data on price and wage levels at household level. Finally, the geographic differences in welfare impacts arise entirely from differences in consumption and production behaviour. In reality, there are also likely to be differential impacts on local prices, caused by transport or other impediments to internal trade. As implemented in this case study, the approach does not incorporate such differences, and doing so would pose a number of data and analytic problems. This might, however, be a fruitful direction for future work in settings in which one has the necessary geographic data on prices and wages. While acknowledging these limitations, the approach used here can at least illuminate the likely short-term poverty impacts of trade reforms.

Measuring the welfare impacts of trade reform

WTO accession in China meant a sharp reduction in tariffs, quantitative restrictions and export subsidies, with implications for the domestic structure of prices and wages, and thus for household welfare and its distribution. In measuring the welfare impacts of this trade reform, prior estimates of the direct and indirect impacts of China's WTO accession on goods and factor prices are combined with standard methods of first-order welfare analysis to measure the gains and losses at the household level. The welfare impacts are derived from a household model that incorporates own-production activities. The analytics are summarized in the Appendix on page 138.

This approach respects the richness of detail that is available from a modern integrated household survey, allowing one to go well beyond the highly aggregative types of analysis presented earlier. One can measure the expected impacts across the distribution of initial levels of living, but also look at how the impacts vary by other household characteristics, including location and demographic characteristics. Thus one can provide a reasonably detailed 'map' of the predicted welfare impacts by location and socioeconomic characteristics. Details of the implementation for China are given in Chen and Ravallion (2004b). This discussion will focus on the salient results for the purposes of this study.

The price changes induced by the trade policy change are simulated from the computable general equilibrium model used by Ianchovichina and Martin (2004). This is a competitive market-clearing model from the Global Trade Analysis Project (GTAP).[15] The CGE model is applied to household survey data. The CGE analysis generates a set of price and wage changes; these embody both the direct price effects of the trade policy change and 'second-round' indirect effects on the prices of non-traded goods and on factor returns, including effects that operate through the government's budget constraint. Since the price changes are based on an explicit model, their attribution to trade policy reform is unambiguous. The survey data come from the 1999 Rural Household Survey (RHS) and the 1999 Urban Household Survey (UHS), both carried out by China's National Bureau of Statistics (NBS). The RHS sample covers 67,900 households and the UHS covers 16,900. The NBS also kindly provided the micro data for three provinces (Liaoning, Guangdong and Sichuan), which can be termed the 'test provinces'. The computer program to implement our estimation method was written for these data, after which NBS staff ran the program on the entire national dataset (the complete micro data files are not publicly available).

Impacts on aggregate poverty

Before China's official WTO accession in 2001, the economy had already started to adapt to the expected change. One can thus consider the trade reform as having two stages: a lead-up period in which tariffs started to fall in anticipation of WTO accession, and the period from 2001 onwards. Ianchovichina and Martin (2004) argue that one can take 1995 as a plausible beginning of the lead-up period, and the analysis here uses their estimates of the changes in goods and factor prices induced by WTO accession for the periods 1995–2001 and 2001–7. For the first stage of this trade reform, the simulated income distribution is obtained by subtracting the estimated gains over 1995–2001 from the 1999 incomes at household level. For the second stage, the impacts are obtained by adding the household-specific gains from 2001–7 to the 1999 incomes. Thus the first simulation tells us the distributional impact of the price changes during the first stage of the reform – what the baseline distribution would have looked like without the reforms; while the second tells us the impact of the post-2001 price changes – that is, how those changes are expected to affect the baseline distribution, looking forward. Table 5.4 summarizes the results. The upper panel gives the mean gains for

Table 5.4 Predicted aggregate impacts of WTO accession in China

	Rural	**Urban**	**National**
Mean gains (Yuan/capita)			
1995–2001	34.47	94.94	55.49 (1.54%)*
2001–7	−18.07	29.45	−1.54 (−0.04%)*
Poverty impacts (Headcount index, %)			
Official poverty line			
Baseline (1999)	4.38	0.08	2.92
Simulated: Less gains 1995–2001	4.56	0.08	3.04
Simulated: Plus gains 2001–7	4.57	0.07	3.04
US$1/day (1993 PPP)			
Baseline (1999)	10.51	0.29	7.04
Simulated: Less gains 1995–2001	10.88	0.28	7.28
Simulated: Plus gains 2001–7	10.81	0.28	7.23
US$2/day (1993 PPP)			
Baseline (1999)	45.18	4.07	31.20
Simulated: Less gains 1995–2001	46.10	4.27	31.88
Simulated: Plus gains 2001–7	45.83	3.97	31.60

Note: * percentage of mean income.

Source: Chen and Ravallion (2004b).

each of the periods 1995–2001 and 2001–7, split into urban and rural areas. The lower panel gives the headcount index of poverty as measured by various poverty lines; the 'official poverty line' gives estimates based on the poverty lines used by the NBS, while the 'US$1/day' and US$2/day' lines are those from Chen and Ravallion (2004a).

We find an overall gain of about 1.5 per cent in mean income, all in the period leading up to WTO accession. We find that in 1999 the incidence of poverty would have been slightly higher if not for the trade policy changes over the lead-up period to WTO accession. From 2001 to 2007, poverty is projected to increase very slightly as a result of the price changes expected to be induced by the remaining tariff changes. The impacts over a wide range of poverty lines can be seen from Figures 5.3 and 5.4, which give the cumulative distributions of income for both the baseline and the two simulated distributions, for the poorest 60 per cent in rural areas (Figure 5.3) and the poorest 40 per cent in urban areas (Figure 5.4). There is a negligible impact across a wide range of distribution.

Gainers and losers from trade reform

Although using very different data and methods, these results are consistent with those presented earlier, in suggesting that trade openness in China has

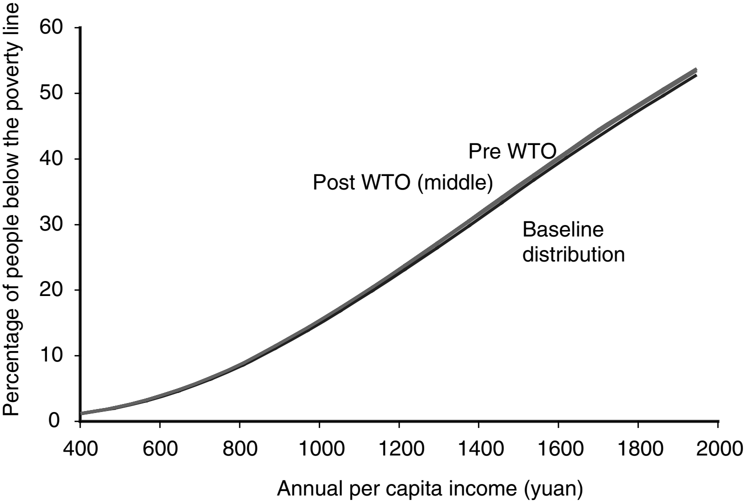


Figure 5.3 Poverty incidence curves: rural

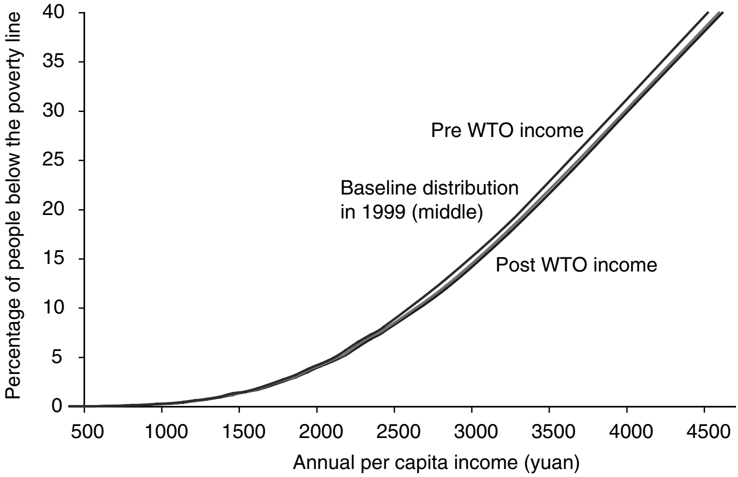


Figure 5.4 Poverty incidence curves: urban

had negligible effect on poverty in the aggregate. However, with this new micro lens we can also study the heterogeneity in impacts. Figure 5.5 shows how the incidence of gains varies by income. The generally positive gains among urban households tend to fall slightly (as a proportion of income) as income rises. The generally negative impacts for rural households reach quite high levels among

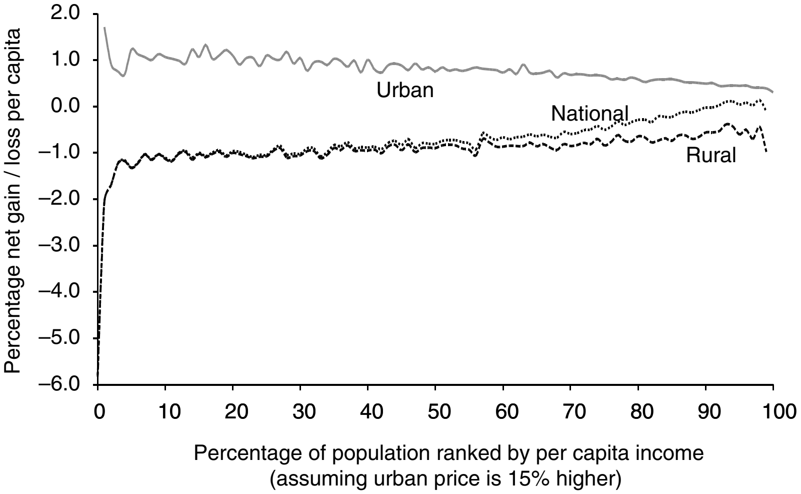


Figure 5.5 Mean gain by percentile of households, ranked by income per person

the very poorest. Farm income is predicted to fall because of the drop in the wholesale prices of most farm products (plus higher prices for education and health care; see Chen and Ravallion, 2004b, for details). About three-quarters of rural households are predicted to lose real income in the period 2001–7 (Figure 5.6), but this is true for only one in ten urban households.

Impacts also differ widely across regions. One spatially contiguous region stands out as losing the most from the reform: namely the north-eastern provinces of Heilongjiang, Jilin, Inner Mongolia and Liaoning. Both the absolute and proportionate impacts are highest in this region – indeed, more than 90 per cent of farmers in Heilongjiang and Jilin are predicted to experience a net loss in income (Chen and Ravallion, 2004b).

Which types of households gain and which lose? The Appendix (see page 138) outlines how a regression specification for addressing this question can be derived from the welfare analysis of the impacts of trade reform. The household characteristics considered included age and age-squared of the household head, education and demographic characteristics, and land (interpreted as a fixed factor of production, since it is allocated largely by administrative means in rural China). Dummy variables are also included, to describe some key aspects of the occupation and principal sector of employment, such as whether the household is a registered agricultural household, whether its members engage in wage employment, are employed by the state, or participate in township and village enterprises.

Tables 5.5 and 5.6 give the regressions for the three test provinces (for which the micro data are available). Looking first at rural areas (Table 5.5),

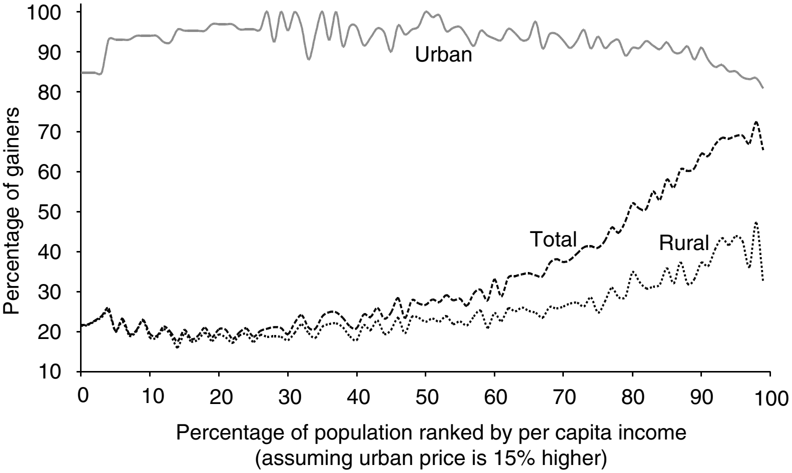


Figure 5.6 Percentage of gainers, by income percentile

Table 5.5 Regressions for percentage gains from trade reform in three provinces of China, rural areas

	Liaoning		**Guangdong**		**Sichuan**	
	Coefficient	***t*-ratio**	**Coefficient**	***t*-ratio**	**Coefficient**	***t*-ratio**
Log of household size	0.768	2.46	0.022	0.20	0.030	0.40
Age of household head	−0.108	−2.17	−0.007	−0.34	−0.004	−0.31
Squared age	0.001	2.19	0.000	0.40	0.000	−0.02
Agricultural household	−0.896	−2.98	−1.365	−14.85	−1.420	−7.58
No. of employees/hh size	0.630	2.76	0.271	2.57	0.444	3.61
No. of TVE workers/hh size	0.669	4.27	0.585	4.47	0.548	6.11
No. of migrate workers/hh size	0.655	3.59	0.187	3.59	0.346	7.08
Area of cultivated land	0.000	−1.77	0.000	−0.73	0.000	−1.61
Area of hilly land	0.000	−0.48	0.000	−0.35	0.000	2.20
Area of fishpond land	0.000	−0.17	−0.001	−2.23	0.000	0.55
Highest education level:						
Illiterate or semi-illiterate	1.393	2.18	0.507	1.26	−0.013	−0.05
Primary school	−0.634	−2.01	−0.154	−0.90	0.069	0.30
Middle school	−0.891	−3.08	−0.023	−0.14	−0.011	−0.05
High school	−0.660	−2.42	0.010	0.06	0.006	0.02
Technical school	−0.573	−1.87	−0.229	−1.18	0.038	0.14
College (default)						
Ratio of labour force	0.456	0.85	0.323	1.81	−0.099	−0.71
Ratio of children under 6	3.730	3.61	0.461	1.49	−0.169	−0.78
Ratio of children age 6–11	1.557	1.41	0.173	0.72	−0.275	−1.48
Ratio of children age 12–14	1.625	1.54	−0.477	−1.60	−0.343	−1.85
Ratio of children age 15–17	1.325	1.80	−0.289	−0.91	−0.192	−0.88
Constant	0.788	0.69	−0.709	−1.39	−0.584	−1.68
R-squared	0.108		0.217		0.171	

Table 5.6 Regressions for percentage gains from trade reform in three provinces of China, urban areas

	Liaoning		**Guangdong**		**Sichuan**	
	Coefficient	***t*-ratio**	**Coefficient**	***t*-ratio**	**Coefficient**	***t*-ratio**
Log of household size	0.175	3.54	−0.038	−0.4	0.036	0.46
Single head household	−0.022	−0.36	−0.221	−2.21	−0.259	−3.07
Age of household head	0.000	−0.01	0.033	2.55	0.017	1.53
Squared age	0.000	0.1	0.000	−2.12	0.000	−1.46
Highest education level (default is university):						
Primary school or lower	0.524	6.43	0.389	3.7	0.509	5.15
Middle school	0.539	10.41	0.583	7.25	0.591	8.27
High school	0.180	3.56	0.095	1.46	0.262	3.83
Technical school	0.214	4.04	0.076	1.22	0.120	1.79
College	0.054	1.04	0.015	0.25	0.125	2.24
Sector (default is government):						
Agriculture	−0.079	−0.32	0.166	2.2	0.338	2.64
Mining	0.183	1.11	0.346	3.38	−0.129	−1.01
Manufacturing	−0.015	−0.27	0.114	1.41	−0.021	−0.34
Utility	−0.040	−0.36	−0.144	−1.18	−0.134	−0.84
Construction	0.095	0.91	0.109	1.19	0.036	0.51
Geological prospecting & water conservancy	−0.407	−3.06	0.178	1.03	−0.228	−0.53
Transport & telecommunications	0.206	2.93	0.060	0.79	−0.036	−0.4
Wholesale & retail, etc.	0.060	0.78	0.081	0.99	−0.015	−0.18
Banking & finance	−0.088	−0.47	0.049	0.53	0.013	0.12
Real estate	−0.108	−0.91	0.222	1.16	0.106	0.29
Social services	−0.090	−1.09	0.065	0.69	0.148	1.37
Health care, etc.	−0.088	−1.1	0.007	0.06	−0.124	−1.49
Education, etc.	−0.057	−0.75	0.044	0.44	−0.031	−0.39
Scientific research	−0.454	−4.09	0.126	1.11	−0.082	−0.73
Other	0.012	0.14	0.034	0.25	−0.121	−0.55
Type of employer (default is state owned):						
Collective-owned	0.053	1.16	0.008	0.08	0.137	1.73
Foreign company	−0.046	−0.54	−0.122	−2.3	−0.193	−2.08
Private-business owner	−0.069	−0.59	−0.051	−0.39	0.317	2.46
Private-owned	−0.182	−1.65	−0.231	−1.96	−0.037	−0.22
Retirees re-employed	−0.302	−3.39	−0.242	−1.41	−0.177	−1.32
Retirees	−0.341	−4.2	−0.452	−2.37	−0.359	−3.42
Others	−0.124	−1.13	−0.187	−1.24	−0.338	−1.2
Occupation (default is retiree)						
Engineer & technician	−0.015	−0.14	−0.141	−0.69	−0.036	−0.29
Officer	−0.044	−0.43	−0.063	−0.31	−0.045	−0.36
Staff in commerce	0.012	0.12	−0.036	−0.17	0.029	0.24
Staff in services	0.437	3.08	0.019	0.09	−0.011	−0.08
Worker in factory, etc.	0.118	0.82	0.025	0.12	0.091	0.56
Worker in transport & telecommunications	0.209	2.02	−0.018	−0.09	0.130	1.03
Other	0.171	1.33	−0.069	−0.27	−0.636	−4.2
Constant	0.172	0.7	−0.623	−1.68	−0.197	−0.71
R-squared	0.401		0.290		0.359	

we find that, in all three provinces, the predicted gain from trade reform tends to be larger for larger households. There is also a U-shaped relationship with the age of the household's head, such that the gains reach a minimum around 50 years of age. The gains are smaller for agricultural households. They are larger for households with more employees, more workers in township and village enterprises, more migrant workers, and less cultivated land (though the last finding is only significant in Liaoning). The only strong demographic effect is that younger households (those with a higher proportion of children aged under six) tend to be gainers in Liaoning.

For agricultural households, predicted losses are significantly higher than average in six counties in Liaoning (losses of 3 per cent to 5.6 per cent, versus the provincial average of 1.3 per cent), seven in Guangdong (2.5 per cent to 5.3 per cent, versus the provincial average of 0.8 per cent), and six in Sichuan (2.8 per cent to 5.7 per cent, versus the provincial average of 0.7 per cent). In urban areas (Table 5.6), the gains tend to be larger for smaller households. As in rural areas, there is a U-shaped pattern (except in Liaoning), with the smallest gains for households whose heads were 66 years of age in Guangdong and 51 years in Sichuan. By contrast with rural areas, there is no relationship between education levels, and welfare gains in urban areas tend to be larger for less well-educated households. There are signs of some sectoral effects, though significantly so only in Liaoning, with higher gains for those in government jobs. There are signs of larger gains among those whose employer is the government. Retirees tend to gain less than others.

Micro lens 2: cereal de-protection in Morocco

We now turn to a second case study using the micro lens. The desire for aggregate self-sufficiency in the production of food staples in Morocco has led in the past to governmental efforts to foster domestic cereal production, even though cereals can be imported more cheaply. Since the 1980s, cereal producers have been protected by tariffs on imports as high as 100 per cent. Reform to this policy would entail a sharp reduction in tariffs, with implications for the domestic structure of prices, and hence household welfare.

A joint Government of Morocco and World Bank Committee developed a CGE analysis of the impacts of cereal de-protection (Doukkali, 2003; World Bank, 2003). Starting from the results of that study, Ravallion and Lokshin (2006) applied standard methods of first-order welfare analysis (very similar to those described above for the China case study) to measure the gains and losses at household level using a large sample survey, namely the Morocco Living Standards Survey for 1998/9 covering a nationally representative sample of 5,000 households. A detailed exposition of the data and methods can be found in Ravallion and Lokshin (2006). This section merely summarizes the results of relevance to this chapter.

The micro lens available from household-level analysis calls into question past claims about the likely welfare impacts of this trade reform. In the aggregate, the study found a negligible impact of partial de-protection on the poverty rate – for example, with a tariff cut on imported cereals of 30 per cent, the headcount index is predicted to rise from 19.6 per cent to 20.3 per cent. With complete de-protection, the impact will be slightly larger, with the headcount index rising to 22.1 per cent. Note that this is only the impact of changes in prices; longer-term positive impacts on agricultural productivity have not been factored in. The original CGE analysis also assumed fixed wages, so this channel of impacts is also closed off.[16] There was a sizeable, and at least partly explicable, variance in impacts across households. The simulations suggest that rural families tend to lose, urban households tend to gain. There are larger impacts in some provinces than others, with highest negative impacts for rural households in Tasla Azilal, Meknes Tafil, Fes-Boulemane and Tanger-Tetouan. Mean impacts for rural households in these regions are over 10 per cent or more of consumption. There are sizeable expected welfare losses among the poor in these specific regions.

The adverse impact on rural poverty stems in large part from the fact that, in value terms, the losses to the net producers of cereals outweigh the gains to the net consumers among the poor. Thus, on balance, rural poverty rises. This contradicts past generalizations that the rural poor in Morocco tend to be net consumers of grain, and hence gainers from trade reform. However, the majority of Morocco's poor are net consumers, even though on balance the welfare impacts on the rural poor are negative. There are predicted to be more gainers than losers amongst the rural poor, but the aggregate losses outweigh the aggregate gains. These results again lead one to question the high level of aggregation common in past claims about welfare impacts of trade reform. As in the case of China, the Morocco study finds diverse impacts at given pre-reform income levels. This 'horizontal' dispersion becomes more marked as the extent of reform (measured by the size of the tariff cut) increases (Ravallion and Lokshin, 2006). It is clear from these results that in understanding the social impacts of this reform, one should not look solely at income poverty as conventionally measured; rather, one needs to look at impacts along horizontal dimensions, at given income.

Conclusions

Each of the (rather different) empirical approaches used here casts doubt on any presumption that greater openness to external trade is the key to rapid poverty reduction. Equally, they cast doubt on any presumption that trade openness hurts more poor people than it helps.

Pooling data on spells of poverty reduction across countries and over time, matched with measures of the extent of trade openness, does not reveal any correlation between rates of poverty reduction and expanding trade volume.

Focusing on the longest time periods available for each country, one can unearth a positive correlation between greater external trade over time and rates of poverty reduction. However, the correlation is rather fragile, and the data are more suggestive of diverse (and noisy) impacts of trade expansion on poverty. Based on cross-country comparisons, it is hard to maintain the view that expanding external trade is, in general, a powerful force for poverty reduction in developing countries.

Nor does the aggregate time series evidence data assembled here for China suggest that trade reform has been an important factor in reducing poverty. A range of non-trade factors appear to have played a more important part in explaining China's (considerable) success in reducing absolute poverty since the early 1980s. More disaggregated analyses of the household-level impacts of trade reforms in both China and Morocco are broadly consistent with these conclusions. WTO accession in China is found to have had a small poverty-reducing effect in the aggregate. Cereal de-protection in Morocco is predicted to have had a only a small adverse impact on poverty in the aggregate.

However, in both China and Morocco, a micro empirical lens points to considerable heterogeneity in impacts underlying the aggregates. There is a sizeable, and at least partly explicable, variance in impacts across households with different characteristics. In both countries rural families tend to lose, and urban households tend to gain. Impacts are much larger in some geographic areas than others. For example, in China, the adverse impacts are largest in the north-east, where rural households depend more on feedgrain production (for which falling prices are expected from WTO accession). The most vulnerable households tend to be rural, dependent on agriculture, with relatively few workers, and with weak economic links to the outside economy though migration.

The macro perspective also hides potentially important implications for other areas of policy. The findings reported here have implications for social protection policy, in conjunction with trade reform. There are clear covariates of micro impacts that can be exploited in designing compensatory policies. The latent heterogeneity in impacts is undoubtedly driven in part by measurement errors, but it also points to the likely need for self-targeting mechanisms that do not rely on readily measured statistical indicators of impact.

Appendix: calculating and modelling welfare impacts

The following exposition relates to the case study of China reported earlier; the Morocco study used slightly different assumptions, as outlined in Ravallion and Lokshin (2006).

A competitive general equilibrium model is first used to simulate the impacts on factor and goods prices of trade reform. The CGE model is described in Ianchovichina and Martin (2004). In carrying these impacts to the household level, each household has preferences for consumption and work effort represented by the utility function $u_i(q_i^d, L_i)$ where q_i^d is a vector of the quantities of commodities demanded by household i and L_i is a vector of labour supplies by activity, including supply to the household's own production activities. Commodities have positive marginal utilities, while labour supplies have negative marginal utilities. Each household is assumed to be free to choose its preferred combinations of q_i^d and $L_{i,}$ subject to its budget constraint. Thus (consistent with the CGE model that generated the price and wage changes) there is no rationing at household level; for example, involuntary unemployment is ruled out. It follows that all welfare impacts of trade reform are passed on to households via changes in the goods and factor prices they face.

To calculate the monetary value of the welfare impact of price changes, one can work with the standard indirect utility function of household i as given by:

$$v_i\left[p_i^d, w_i, \pi_i\right] = \max_{(q_i^d, L_i)}\left[u_i(q_i^d, L_i) \middle| p_i^d q_i^d = w_i L_i + \pi_i\right] \qquad (5.\text{A1})$$

where p_i^d is the price vector for consumption, w_i is the vector of wage rates and π_i is the profit obtained from all household enterprises, as given by:

$$\pi_i\,(p_i^s, p_i^d, w_i) = \max_{(z_i, L_i^o)}\left[p_i^s q_i^s - p_i^d z_i - w_i L_i^o \middle| q_i^s = f_i(z_i, L_i^o)\right] \qquad (5.\text{A2})$$

where p_i^d is the vector of supply prices, q_i^s is the vector of quantities supplied, L_i^o is the labour input to the own production activities, f_i is the household-specific production function (embodying fixed factors), and z_i are quantities of commodities used as production inputs.

Taking the differentials of Equations (5.A1) and (5.A2), and using the envelope property (whereby the welfare impacts in a neighbourhood of an optimum can be evaluated by treating the quantity choices as given), the gain to household i (denoted g_i) is given by the money metric of the change in utility:

$$g_i \equiv \frac{du_i}{v_{\pi i}} = \sum_{j=1}^{m}\left[p_{ij}^s q_{ij}^s \frac{dp_{ij}^s}{p_{ij}^s} - p_{ij}^d(q_{ij}^d + z_{ij})\,\frac{dp_{ij}^d}{p_{ij}^d}\right] + \sum_{k=1}^{n}\left(w_k L_{ik}^s \frac{dw_k}{w_k}\right) \qquad (5.\text{A3})$$

where $v_{\pi i}$ is the marginal utility of income for household i (the multiplier on the budget constraint in Equation 5.A1) and $L_{ik}^s = L_{ik} - L_{ik}^o$ is the household's 'external' labour supply to activity k. (Notice that gains in earnings from labour used in own production are exactly matched by the higher cost of this input to own-production.) The proportionate changes in all prices and wages are weighted by their corresponding expenditure and income shares; the weight for the proportionate change in the jth selling price is $p_{ij}^s q_{ij}^s$, the revenue (selling value) from household production activities in sector j;

similarly $-p_{ij}^d(q_{ij}^d + z_{ij})$ is the (negative) weight for demand price changes and $w_k L_{ik}^s$ is the weight for changes in the wage rate for activity k. The term $p_{ij}^s q_{ij}^s - p_{ij}^d(q_{ij}^d + z_{ij})$ can be thought of as 'net revenue', which (to a first-order approximation) gives the welfare impact of an equi-proportionate increase in the price of commodity j. Equation (5.A3) is the key formula for calculating the welfare impacts at household level, given the proportionate price and wage changes predicted by the CGE model.

The above formulation of the problem of measuring welfare impacts allows utility and profit functions to vary between households at given prices. To try to explain the heterogeneity in measured welfare impacts, one can suppose instead that these functions vary with observed household characteristics. The indirect utility function becomes:

$$v_i(p_i^d, w_i, \pi_i) = v(p_i^d, w_i, \pi_i, x_{1i}) = \max\left[u(q_i^d, L_i, x_{1i}) \middle| p_i^d q_i^d - w_i L_i = \pi_i\right] \quad (5.A4)$$

where

$$\pi_i = \pi(p_i^s, p_i^d, w_i, x_{2i}) = \max\left[p_i^s f\,(z_i, L_i^o, x_{2i}) - p_i^d z_i - w_i L_i^o\right] \quad (5.A5)$$

Note that this allows the characteristics that influence preferences over consumption (x_{1i}) to differ from those that influence the outputs from own-production activities (x_{2i}).

The gain from the price and wage changes induced by trade reform, as given by Equation (5.A3), depends on the consumption, labour supply and production choices of the household, which depend in turn on prices and characteristics, x_{1i} and x_{2i}. For example, households with a higher proportion of children will naturally spend more on food, so if the relative price of food changes, then the welfare impacts will be correlated with this aspect of household demographics. Similarly, there may be differences in tastes associated with stage of the life-cycle and education. There are also likely to be systematic covariates of the composition of income.

Generically, we can now write the welfare gain as:

$$\begin{aligned} g_i = g(p_i^d, p_i^s, w_i, x_{1i}, x_{2i}) = \\ \sum_{j=1}^{m}\left[p_{ij}^s q^s(p_i^d, p_i^s, w_i, x_{2i})\,\frac{dp_{ij}^s}{p_{ij}^s} - p_{ij}^d\left[q^d(p_i^d, w_i, \pi_i, x_{1i}) + z_{ij}(p_i^d, p_i^s, w_i, x_{2i})\right]\frac{dp_{ij}^d}{p_{ij}^d}\right] \\ + \sum_{k=1}^{n} w_k\left[L_{ik}(p_i^d, w_i, \pi_i, x_{1i}) - L_{ik}^o(p_i^d, p_i^s, w_i, x_{2i})\right]\frac{dw_k}{w_k} \end{aligned} \quad (5.A6)$$

Notice that Equations (5.A4) and (5.A5) imply that the gain from reform is inherently non-separable, in that one cannot write it as a function solely of p_i^d, x_{1i} and π_i. This is because the gains also depend on production choices.

As a practical data constraint, the China application (in common with many others) did not include data on household-specific wages and prices. Further assumptions are called for to deal with this data problem. In explaining the variation across households in the predicted gains from trade reform, it can be assumed that: (i) the wage rates are a function of prices and characteristics as $w_i = w(p_i^d, p_i^s, x_{1i}, x_{2i})$; and (ii) differences in prices faced can be captured adequately by a complete set of country-level dummy variables.

Under these assumptions, and linearizing Equation (5.A6) with an additive innovation error term, one can write the following regression model for the gains:

$$g_i = \beta_1 x_{1i} + \beta_2 x_{2i} + \sum_k \gamma_k D_{ki} + \varepsilon_i \tag{5.A7}$$

where $D_{ki} = 1$ if household i lives in country k and $D_{ki} = 0$ otherwise, and ε_i is the error term. This motivates the regressions reported in Tables 5.5 and 5.6.

Notes

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1. The various methods used in the literature and the results of past studies are discussed in the useful surveys by McCulloch *et al.*(2001), Hertel and Reimer (2004) and Winters *et al.* (2004).
2. Examples include Bourguignon and Morisson (1990), Edwards (1997), Li *et al.* (1998), Barro (2000), Dollar and Kraay (2002, 2004), Lundberg and Squire (2003) and Milanovic (2005). No attempt has been made to review the literature comprehensively; for that, see Winters *et al.* (2004).
3. This is intuitive, but strictly a conventional inequality index can be unchanged and yet growth in the mean does not reduce a standard measure of absolute poverty. In practice this appears to be rare.
4. The poverty measures are from http://iresearch.worldbank.org/povcalnet. Chen and Ravallion (2004a) discuss the data and methods. Trade volumes are from the World Bank's SIMA database and are exports plus imports in current US dollars divided by GDP at current US dollars (equivalent to calculating both in current prices). Other definitions (such as using GDP at PPP, as in Dollar and Kraay 2002, 2004) can give different results; for discussions of this issue, see Milanovic (2005).
5. The interactions allow the distributional effects of trade to depend on initial income.
6. This is based on a White heteroscedasticity-consistent standard error; without that correction the coefficient is not significant at the 10 per cent level ($t = -1.73$, prob. = 0.09).

7. Chen and Ravallion (2004a) estimate that in 2001, 17 per cent of China's population lived on less than US$1 a day at 1993 PPP; the corresponding figure for the world as a whole is 18 per cent (21 per cent for developing countries alone). For 1981, the comparable poverty rate in China is estimated to have been 64 per cent. Only four countries (Cambodia, Burkina Faso, Mali and Uganda) had a higher poverty rate than this in 1981 (based on the estimates from www/iresearch.worldbank.org/povcalnet).
8. The data are from the National Rural and Urban Households Surveys done by the National Bureau of Statistics (NBS, 2000). Ravallion and Chen have made adjustments for the changes in the methods used by NBS in processing the rural data (notably in the valuation methods used for consumption-in-kind from farm production). They have also used new absolute poverty lines from NBS.
9. Using different measures and data sources, Benjamin *et al.* (2003) also find signs of falling living standards among the poorest in rural China in the late 1990s.
10. See Easterly and Fischer (2001) and Dollar and Kraay (2002), both using cross-country data, and Datt and Ravallion (1998), using data for India.
11. For example, a two-tier price system allowed exporters to purchase commodities at a low planning price and then export them at a profit. For this reason, oil was a huge export item until 1986.
12. In an antecedent to this approach, Bourguignon *et al.* (2003) take price changes generated by a CGE model to survey data for Indonesia. The methodological differences are discussed in Chen and Ravallion (2004b).
13. One of the (very few) examples of full integration is Cockburn (2002), who built a classic trade-focused CGE model on to the Nepal Living Standards Survey, covering about 3,000 households.
14. See, for example, Ravallion and van de Walle (1991) and Porto (2005).
15. Hertel (1997) contains a useful compendium of papers describing the standard GTAP model with applications. A full discussion of the assumptions of the general equilibrium model and the results of its application to China's accession to the WTO can be found in Ianchovichina and Martin (2004).
16. This is not a particularly appealing assumption, but we have no choice, given that it was made in the original Government of Morocco–World Bank Committee making its projections of the impacts of trade reform.

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6

Globalization and Rural Poverty

Pranab Bardhan

Introduction

As is common in most contentious public debates, different people mean different things by globalization. Some interpret it to mean the global reach of new technology and capital movements, some refer to outsourcing by domestic companies in rich countries, others protest against the tentacles of corporate capitalism or US hegemony (economic, military or cultural). In this chapter I shall limit myself to interpreting globalization simply as openness to foreign trade and *long-term* capital flows. I shall ignore here the important issues arising from the devastation caused to fragile economies by billions of dollars of volatile *short-term* capital stampeding around the globe in herd-like movements, or the substantial poverty-reducing potential of international (unskilled) labour flows from poor to rich countries (even if allowed in temporary and regulated doses).

By 'poverty', I refer to absolute poverty in low-income countries. A large part of the discussion around globalization is around its effect on relative inequality, which we shall largely ignore in this chapter. In many of these countries, the majority of the poor are in the rural sector, which will be our main focus. While what happens to the urban manufacturing and services sectors as a result of globalization has attracted a lot of attention, and can have a large impact on the work opportunities of migrants from the rural sector and thus their poverty, I shall confine myself largely to the rural sector (both agricultural and non-agricultural). For example, the role globalization may have played in weakening trade unions and thus the bargaining power of organized industrial workers in achieving improvements in their living standards, is an important topic, but since such trade unions are rare in the rural sector of poor countries, we shall not discuss this topic here.

In this chapter I mainly provide a brief analytical account of the various processes through which globalization in our sense of the term affects the lives of the rural poor. In general, I believe that globalization can cause many hardships for the poor in these countries, but it also opens up opportunities which some countries utilize and others do not, largely depending on their domestic, political and economic institutions and policies, and the net outcome is often quite complex and almost always context-dependent, belying the glib pronouncements for or against globalization made by the opposing camps.

There have been attempts to relate trade liberalization positively with economic growth, and relate growth with poverty reduction on the basis of cross-country regressions. The former relation has been found to be controversial,[1] while the latter is sturdier. In any case, there are deep methodological-econometric flaws in such cross-country regressions, apart from acute problems of reliability and comparability of the data for many countries. The results of a more micro analysis of the impact of trade liberalization on total factor productivity growth at the enterprise level are mixed (and scanty for the rural sector). Even for the relationship between openness and levels of firm productivity the evidence is quite ambiguous, as can be seen in the survey by Tybout (2000). While the long-run effect of growth on poverty reduction is generally accepted, the usefulness of the average estimated value of the elasticity of this effect – taken to be 2 in an estimate reported in the *World Development Report 2001* (World Bank, 2001); that is, a 1 per cent increase in real per capita income has been associated with a reduction in the headcount incidence of poverty by 2 per cent – is somewhat limited, as the underlying causal model is underspecified. Also, the value of the elasticity varies from country to country depending on initial conditions (particularly initial levels of income and the extent of social and economic inequality), and, of course, varies a great deal, even within (large) countries.

Most of the general statements one sees in popular presentations on the impact of globalization on poverty are essentially those of correlation. Pro-globalizers point to the large decline in poverty in China, India and Indonesia (countries long characterized by massive rural poverty) in recent decades of international economic integration. Chen and Ravallion have estimated that between 1981 and 2001 the percentage of rural people living below an international poverty line of US$1.08 per day (at 1993 PPP) declined from about 79 per cent[2] to about 27 per cent in China, from about 63 per cent to about 42 per cent in India, and 55 per cent to 11 per cent in Indonesia. But, contrary to repeated assertions in the international financial press, no one has yet demonstrated convincingly that this decline is caused mainly by globalization. In China, it could instead be, to a large extent, a result of internal factors such as the expansion of infrastructure or the massive 1978 land reforms or policy changes relating to grain procurement prices or the relaxation of restrictions on rural-to-urban migration. That the spurt in agricultural growth following the 1978 decollectivization and land reform may largely be responsible for poverty reduction in China is suggested by the fact that the substantial part of the decline in poverty since the 1980 had already happened by the mid-1980s, before the big strides in foreign trade or investment.[3] Similarly, rural poverty reduction in India may be attributable to the spread of the Green Revolution in agriculture (the introduction of new seeds and intensive forms of agriculture), and large anti-poverty programmes or social movements in India, and not the trade liberalization of the 1990s (in fact, as we shall discuss later, there is some evidence that trade liberalization slowed down poverty reduction in India). In Indonesia,[4] sensible macroeconomic policies, an active rice price stabilization policy, massive investment in rural infrastructure, and the Green Revolution played a substantial part in the large reduction of rural poverty between 1981 and 2001 (note that, by the early 1980s, the oil boom was largely over, and by 2001 the economy had not fully recovered from the financial crisis).

Those who are more dubious of global processes point out that in the same decades poverty has remained stubbornly high in sub-Saharan Africa; as Chen and Ravallion (2004) have estimated, between 1981 and 2001 the percentage of people[5] living below the poverty line of US$1.08 per day (at 1993 PPP) increased in sub-Saharan Africa from about 42 per cent to about 46 per cent. But this may have little to do with globalization, and more to do with unstable or failed political regimes, wars and civil conflicts that afflicted several countries in Africa. If anything, such instability only reduced their extent of globalization as it scared off many foreign investors and traders.

The self-employed poor

If one goes beyond correlations, the causal processes through which international economic integration can affect poverty primarily involve the poor in their capacity as workers, as consumers, and as recipients of public services or users of common property resources. Let us take first the case of poor workers in the rural sector. They are mainly either self-employed or wage earners. In the rest of this section we shall discuss the self-employed poor, and the next section will be on the poor as wage earners and the poor as consumers. Then we look at the poor as recipients of public services or users of common property resources. The final section draws conclusions.

The self-employed work on their own tiny farms or as artisans and petty entrepreneurs in small shops and household enterprises. The major constraints they commonly face are in credit, marketing and insurance, and infrastructure (for example, roads, power and irrigation), and government regulations (involving venal inspectors, insecure land rights and so on). These often require substantive domestic policy and governance changes – foreign traders and investors are not directly to blame. If these changes are not made and the self-employed poor remain constrained, then, of course, it is difficult for them to withstand competition from large agri-businesses or firms (foreign or domestic). Let us cite two examples. Using panel data for farm households in Zambia, Deininger and Olinto (2000) show that many households could not reap productivity benefits from external liberalization because they lacked key assets such as draught animals and farm implements. Similarly, Lopez *et al.* (1995) show from panel data of farm households in Mexico that the supply response to price incentives is much lower for households with more limited access to capital. Opening the product markets internationally without doing anything about the weak or distorted factor markets such as credit or infrastructural services may thus be a suboptimal policy for many poor farmers and artisans, both from the point of view of their exploiting new opportunities and of social protection for those who may need extra help to cope.

Measurement of the direct impact of trade reform on poverty is in fact quite tricky. Apart from the scarcity of detailed household data before and after trade reform, it is often difficult to disentangle the effects of trade reform from those of other reforms, and other events and shocks that affect the household poverty dynamics. One of the few attempts to relate trade liberalization directly with household poverty in the rural sector is by Topalova (2006); she finds that across rural districts in India, trade liberalization (primarily agricultural tariff reduction) has slowed poverty reduction significantly. Most existing attempts at measurement are really with simulation models. Litchfield *et al.* (2003) is among the first empirical attempts to use household survey data for more than one period in time. For Vietnam in the 1990s, for example, they find in a multi-nomial logit model that the trade variables have a positive significant effect on a household's chances of escaping poverty.

It is not hard to see that openness to foreign trade and investment may sometimes help in relieving some of the bottlenecks in infrastructure and services and in essential parts, components and other intermediate products such as fertilizers and pesticides. Gisselquist and Grether (2000), for example, show how farmers in Bangladesh benefited as liberalization increased the availability of farm inputs. In a more general sense, international diffusion of technology in agriculture, of which the Green Revolution has been a dramatic example, has led to large reductions in poverty, particularly in Asia, even though the larger dependence of farm households on purchased inputs that became necessary increased the importance of the constraints of credit and irrigation.

Small farms or firms that are not severely handicapped by credit and other constraints are sometimes more productive than their larger counterparts, and are also sometimes more successful in export markets. Small producers are often heavily involved in exports (for example, coffee producers in Uganda, rice growers in Vietnam, shrimp farmers in coastal Bangladesh or India, and garment producers in Bangladesh or Cambodia). But in exports the major hurdle they face is often a result of not more globalization but *less*. Developed country protectionism and subsidization of farm and food products and simple manufactures (such as textiles and clothing) restrict severely the export prospects for poor countries.[6] From estimates of the World Bank, based on the widely used GATP (Global Trade Analysis Project) model, the total income losses incurred by developing countries because of trade barriers on textiles and apparel by wealthy countries amount to about US$24 billion. Taking tariffs and the tariff equivalent of subsidies in agriculture, Cline (2004) estimates that overall protection in agriculture is about 20 per cent for the USA, 46 per cent[7] for the EU, 52 per cent for Canada, and 82 per cent for Japan. The annual loss to developing countries from agricultural tariffs and subsidies in rich countries is estimated from a static CGE model and the GATP trade and protection database by Cline (2004) to be about US$45 billion (and much higher if dynamic effects are taken into account).

One might wish that the anti-global protesters of the rich countries would turn their energies toward the vested interests in their own countries that prolong this protectionism and cripple the efforts of the poor of the world to climb out of poverty. Pro-poor opponents of the North American Free Trade Agreement (NAFTA), for example, point out how competition from northern agri-business is destroying the livelihoods of small farmers in Mexico, without being equally vocal about the farm subsidies and tariffs in the USA and Canada (now going to be even substantially larger under the new US farm policy) which are, to a large extent, responsible for this. US wheat export prices are estimated to be 46 per cent below cost of production, US corn export prices are at 20 per cent below cost, and so on.[8] It is not surprising that US subsidies of cotton provided a major flashpoint in the breakdown of the WTO's ministerial negotiations in Cancún in September 2003, as this crop is grown by farmers in some of the poorest countries of the world. Of course, this is not to minimize the responsibility of domestic governments. In Mexico, for example, following the peso crisis of 1994, the government abandoned its plans to phase in trade liberalization gradually. Although the Procampo programme provided some compensation to the very poor farmers against the price decline, there was a lack of public support infrastructure to enable the small farmers to adjust to new patterns of production necessary to be competitive in the post-NAFTA world.

Another increasingly important barrier to trade that many small farmers of developing countries face in world markets is that rich countries now shut out many of these imports under a whole host of safety and sanitary regulations (sometimes imposed under pressure from lobbyists of import-competing farms in those countries). This may in fact increase the importance of the need to involve rich, transnational companies in marketing poor-country products. These companies can deal with the regulatory and lobbying machinery in rich countries far better than the small producers from poor countries can, and at the same time can provide consumers with credible guarantees of quality and safety. Of course, these companies will charge hefty fees for this marketing service (usually much larger than the total production cost), and sometimes impose costs that small farmers find difficult to bear.

European supermarkets, for example, now insist on criteria for farmers to satisfy that include health and safety rules, product testing, farm audits and staff training. It has been pointed out that farm audits alone cost around US$500 per farmer – more than what many farmers earn in the supplying countries in Africa. In some cases, tighter control by the retail chains over suppliers to ensure standards and practices has led to a drastic decline in the proportion of exports coming from smallholders; for an example from the case of Kenyan horticulture exports, see Dolan and Sutherland (2002).

Similarly, it may be very difficult, costly and time-consuming for small producers of manufactures or services in developing countries to establish a brand name and reputation for quality and timely delivery, which are absolutely crucial in marketing, particularly in international markets (much more than the comparative costs of production that traditional trade theory emphasizes). This is where multinational marketing chains with global brand names, mediating between domestic suppliers and foreign buyers, will play a dominant role for a long time, and small producers can do worse than pay the high marketing margin they charge. At the same time, co-ordinated attempts on the part of developing countries, with technical and financial assistance from international organizations, to build international-quality certification institutions and domestic co-operative marketing organizations for their products, should be a high priority.

There is very little hard empirical evidence on the precise figures of marketing margins. There are occasional newspaper reports, for example, that for a 44lb (20 kg) box of bananas, which sell for about US$25 in US supermarkets, the producers in Ecuador get only around US$2–3.[9] Similarly, there are reports that for a shirt that sells for at least US$20 in Gap stores in the USA, the producer in Hong Kong gets less than US$1. Of course, much of the difference is made up of transportation, distribution and inventory costs, but the marketing margins are likely to be substantial. Morisset (1998) points out that the spread between world and domestic prices almost doubled over the period 1975–94 in all major commodity markets, leading to several billions of dollars of lost revenue for commodity-exporting countries. He suggests that the market power of international trading companies could be the major reason, after showing why changes in trade and tax policies, or factors such as transport, processing, and market costs cannot provide a systematic explanation. Let us also give the examples of two major beverage markets. The coffee market is dominated by four transnational retail companies. In the early 1990s, the coffee earnings of exporting countries were US$10–12 billion, while retail sales were around US$30 billion. By 2002, retail sales had more than doubled, but coffee-producing countries were receiving only about half the amount of their earnings of a decade earlier. Three companies control more than 80 per cent of the world tea market. Many in the tea industry in India believe that the cartels of the large buyers push down prices on the tea auction floors. A 2003 report published in Delhi stated that while the tea price in the retail market was around INR160 per kg, in the auctions it was less than INR50 per kg (and while auction prices have fallen, retail prices of tea continue to rise). In recent years, through mergers, acquisitions and business alliances, the agri-food corporations have concentrated an enormous market power. Companies such as Monsanto, Cargill, Nestlé and Wal-Mart have come to dominate supply chains for food and agricultural goods, from seed to supermarket shelf. Five companies control 90 per cent of the world grain trade; six corporations control three-quarters of the global pesticides market; Wal-Mart controls 40 per cent of Mexico's retail sector; Nestlé has established a virtual monopoly of the UHT milk market in Pakistan and controls around 80 per cent of Peru's milk production; DuPont and Monsanto dominate the world seed markets for corn (65 per cent) and soya (44 per cent), and so on.[10]

Those who are thus justifiably outraged by the extremely high marketing margins the monopoly multinational companies currently charge the poor producers, their price-fixing cartels, or by their efforts to push out small producers from the supply chains, should agitate more for anti-trust action, not anti-trade action. There should also be more energetic international attempts to certify codes against international restrictive business practices and to establish an international anti-trust investigation agency, possibly under WTO auspices. Even if such an agency might not have many enforcement powers, internationally publicized reports of anti-trust investigations by a recognized international body will have some impact on rapacious monopolies, and strengthen domestic competition commissions in developing countries.

Trade liberalization, even when increasing the mean incomes of the poor, may heighten their vulnerability, particularly by increasing the variance in prices or income sources. Theoretically, there can be conflicting factors working here, and whether in a particular case variability increases or not can only be resolved empirically for different cases. For a brief summary of the empirical literature on this question, see Winters *et al.* (2004). For example, they cite a study of how trade liberalization might have helped to mitigate the post-flood food crisis in Bangladesh in 1998, with private imports stabilizing prices. On the other hand, they cite evidence from Côte d'Ivoire that the ending of domestic marketing arrangements with liberalization may have increased the variance of prices. There is, of course, general agreement on the low capacity of the poor to cope with negative price and income shocks.

There is also the issue of commodity concentration of exports. More than fifty developing countries depend on three or fewer primary commodities for more than half of their exports. Exports of such products are often a curse as well as a blessing for these countries, as their prices fluctuate wildly and as the economy is too dependent on them. As a result of recent cases of elimination of the erstwhile inefficiently-run marketing boards and the dismantling of wasteful stabilization schemes, farmers in many African countries now receive a higher fraction[11] of a more volatile (and in some cases, lower) world market price.[12] International commodity agreements among these countries to control their supply in the world market have not worked very well in the past. For reducing their economic vulnerability there are probably not many alternatives to attempts at diversification in production and skill formation, and gradual movement up the supply chain towards activities with more value-added for the same commodity and arranging at an international level institutions of insurance for farmers in poor countries.

With the opening of the economy just as export crops face new opportunities, potentially lifting their producers from poverty, crops where the country may lack comparative advantage will lose out and push their small producers into poverty, if, in a situation of pervasive failure of credit and insurance markets there is no vigorous programme of public adjustment assistance and extension services to help producers to reallocate their resources. The poor growers of traditional crops are often ill-equipped to move by themselves to new commercial products such as fruits, vegetables, flowers, dairy products, processed foods, and so on. These products require new storage and transport infrastructure, large set-up costs, marketing connections, and new legal rules and institutional structures that can facilitate contract farming and agro-processing in a way that does not expose small producers to exploitation by large marketing chains. This is clearly not an argument against globalization, but for pro-active public programmes to help poor farmers to adjust and co-ordinate. International agencies that preach the benefits of free trade have an obligation to contribute to such programmes with financial, organizational and technical assistance.

What has been said in the preceding paragraphs about self-employed farmers is also largely valid for those who are self-employed in non-agricultural activities in the rural sector. Some firms adjust well to new trade opportunities, while others find it difficult to cope with the competition, depending on their initial asset, credit and other infrastructural conditions. Parker *et al.* (1995), in their study of small enterprises in five African countries, show that firms that adapted quickly benefited from import liberalization, while those ill-prepared to face competition lost out. What is called for therefore is liberalization, to be accompanied by a comprehensive policy package to enhance the capability of the latter firms, and a safety net for people who lose out in the process.

In rural industrialization, the most successful recent case, with a major role of exports and foreign direct investment, is, of course, that of the township and village enterprises in China, whose phenomenal growth in the 1980s and 1990s may have played an important part in the reduction of poverty in China. Exports of apparel and light manufactures also led to a significant reduction of poverty in Vietnam – for a measurement of the poverty impact on the basis of a microsimulation model see Hertel *et al.* (2003). Across states in India, Ravallion and Datt (2002) found that the elasticity of poverty reduction with respect to non-farm output growth varies depending on initial conditions, such as literacy or land distribution.

The wage-earning poor

Turning to the wage-earning poor, the literature on how international trade affects the absolute level of the real wage or employment of unskilled workers is extremely small relative to the one on wage inequality (which, though an important issue, is not directly relevant to my concern here with absolute poverty). Empirically, it is hard to disentangle the effects on wages of trade reform from those flowing from macroeconomic policy changes or other ongoing deregulatory reforms and technological changes. The traditional international trade theory suggests that workers in a poor country (presumably having abundant supplies of unskilled labour) having a comparative advantage in products involving intensive use of unskilled labour should benefit from trade liberalization. The improvement in wages and employment of garment workers in Bangladesh, Mauritius or Vietnam resulting from expanding exports is an obvious example. The matter is, of course, complicated for some developing countries (Brazil, Mexico or Turkey, say) which may import labour-intensive products from even poorer countries (China, Indonesia or Bangladesh, say), so that trade, consistent with the traditional theory, may lead to lower wages in the former set of developing countries, for which there seems to be some evidence.[13] Similarly, if a poor country has large supplies of non-labour factors of production (such as land or mineral resources), trade liberalization may not benefit the labour-intensive sectors.

On the basis of household survey data, Hertel *et al.* (2003) estimate that global trade liberalization leads in the long run (that is, when labour and capital are mobile across sectors) to an increase in income for all strata of the population. This is largely because of increased demand for unskilled labour which lifts income, even of some of the formerly self-employed, who now move into the wage labour market. Edmonds and Pavcnik (2003) also note how Vietnam's liberalization of the rice trade in the 1990s led to a gainful reallocation of labour of the poor from household occupations to the wage labour market.

In some cases, however, intersectoral mobility is limited for prolonged periods. If some factors of production are intersectorally immobile, and some goods are non-traded, the real wage of an unskilled worker in a poor country may not go up with trade liberalization even in an otherwise standard model of trade theory. Take a three-good model in a hypothetical African country: one is a non-tradable good (say, a subsistence food crop) largely grown by women who, for various social and economic reasons, cannot move to other sectors; another good (say, an exportable tree crop) produced largely by men in a capital-intensive way (perhaps simply because tree crops lock up capital for a long period); and the third good is an importable (say, processed food), which is somewhat substitutable in consumption for the subsistence food. In this three-sector model it is not difficult to show that the real wage of women may go down when the importable processed food is made cheaper by trade liberalization (under the condition that the elasticity of substitution in consumption of the two foods is sufficiently high). What we have said about poor African women here is equally true for other people anywhere who are mobility-constrained (old workers and people who do not have the collateral to raise capital to start new ventures or move to new sectors, for example).

It is often suggested that globalization associated with more 'informalization' may worsen the conditions of workers. If large firms facing more foreign competition and pressure to reduce costs outsource activities to smaller firms or household enterprises in the informal sector,[14] the average wage (of those formerly employed in the formal sector) may go down, but this need not impoverish workers in general if the poorer informal workers get more employment this way.

Let us now discuss the case of the poor as consumers. Whether they gain as consumers from trade depends on whether they are net buyers of tradable goods; for example, the landless labourers in east or south India who are net buyers of rice may gain from imports of cheaper rice from Thailand, but may lose from higher prices of medicine as the Indian drug market becomes internationalized (the laws changed in 2005 from recognizing only process patents to the international product patent system under TRIPS), or the monopolistic retail market structure which often blocks the pass-through from border prices to domestic prices. For example, in Mexico after NAFTA, the cartelized tortilla sector largely maintained prices even with the availability of cheaper North American corn. In one of the most disaggregated exercises in the empirical literature, with the use of Morocco's household survey of living standards and a general-equilibrium simulation of trade policy change, Ravallion and Lokshin (2004) show that liberalization of cereal imports in that country (which does not have a comparative advantage in water-intensive cereals production) leads to a rise in rural poverty, with the losses to the net producers of cereals outweighing the gains to the net consumers among the poor.

Whether developing countries are net importers or exporters of agricultural products varies a great deal from country to country. From FAO data sources, Valdes and McCalla (2004: 136–50) compute that of the 115 low-income and low-middle-income countries, 62 are net agricultural goods importing countries and 53 are net agricultural goods exporting countries. In general with the expected price rise from agricultural trade liberalization in the form of reduced agricultural tariffs and subsidies in developed countries, the former set of countries is likely to lose and the latter to gain. So, contrary to the impression one gets from advocates of agricultural trade liberalization, many poor countries will not gain from this liberalization.[15] In particular, of the forty-six least-developed countries (by UN classification) thirty are net agricultural goods importing countries,[16] and it is unlikely that with liberalization some of the latter will be transformed into large agriculture exporting countries. Even in the case of the fewer agriculture exporting least-developed countries, many of them are likely to lose the special preferential status they enjoy under the current regime in some developed markets; for example, many least-developed countries in Africa have duty- and quota-free access to the EU market, so that they currently sell in this market at the high EU internal prices. This, of course, does not apply to the recently publicized case of poor countries exporting cotton, as the highest domestic subsidies (depressing the world price) are in the USA.

The poor as recipients of public services

Let us now turn briefly to the case of the poor as recipients of public services. In the low-income developing countries, the poor, particularly those who are in the preponderant informal sector, do not receive much effective social protection from the state, but the public sector is usually involved in basic services such as education and health, and public works programmes. Cuts in public budgets on these basic services are often attributed to globalization, as the budget cuts to reduce fiscal deficits often come as part of a package of macroeconomic stabilization prescribed by international agencies such as the IMF. Trade reforms can bring about a decline in customs revenue (which is usually a substantial source of total government revenue in low-income countries) resulting from tariff cuts, to the extent that these are not compensated by the replacement of the pre-existing quotas by tariffs. But Pritchett and Sethi (1994) analysed the experiences of Jamaica, Kenya and Pakistan on their tariff reductions and found that revenues often fell substantially less than did the tariff rates. Much depends on the nature of customs administration, the degree of complexity of the tariff structure, and the scope for expansion of the revenue base following trade reform.

While there is much scope for improvement in the internationally prescribed (occasionally ideologically blinkered) stabilization programmes to minimize their adverse impact on the poor, one should keep in mind that the fiscal deficits in these poor countries are often brought about in the first place more by domestic profligacy in matters of subsidies to the rich, salaries for the bloated public sector or military extravagance. Faced with mounting fiscal deficits, governments often find it easier politically to cut public expenditure on the voiceless poor (along with public investment programmes), which is primarily because of the domestic political clout of the rich, who are disinclined to share in the necessary fiscal austerity. It is always convenient to blame an external agency for a problem that is essentially domestic in origin.

The low quality and quantity of public services such as education and health in poor countries is not only because of their relatively low share in the public budget, however. To a large extent, even the limited money allocated in the budget does not reach the poor because of all kinds of top-heavy administrative obstacles, and bureaucratic and political corruption. The development literature is full of accounts of targeting failures in social expenditure.[17] Again, this is a domestic institutional failure, rather than an external problem. The major effort required here is to strengthen the domestic institutions of accountability.

Apart from basic public services, the poor are also users of common property resources, the decline in which is not usually taken into account in the standard estimates of poverty, based as they are on either household surveys of private consumer expenditure or on national income accounts. Environmentalists argue that trade liberalization damages the poor by encouraging over-exploitation of fragile environmental resources (forestry, fishery, surface and groundwater irrigation, grazing lands) on which the daily livelihoods of the rural poor in particular crucially depend. Here the answers are also somewhat complex, and mere trade restriction is not the solution. The environmental effects of trade liberalization on the rural economy depend on the crop pattern and the methods of production. Take, for example, an African rural economy, where the exportable product is a capital-intensive tree crop (such as coffee or cocoa), the import substitute is a land-intensive crop (such as maize), and there is a labour-intensive subsistence (non-traded) crop (such as roots and tubers). The economy may have a comparative advantage in tree crops. In this case, under a trade protection regime an increase in import substitution leads to an expansion of cultivated land under the land-intensive crop as well as a shortening of the fallow period, leading to depletion of natural vegetation and biomass. Trade liberalization, in this context, through encouraging the production of the less land-intensive tree crop, can significantly improve the natural biomass, as has been shown by Lopez (2000) for Côte d'Ivoire in the latter part of the 1980s using the data from the Living Standards Survey and some remote-sensing data from satellite images.

One reason why land-intensive crops may lead to overuse of land and depletion of natural vegetation (or that expansion of the agricultural frontier in general leads to deforestation) is the lack of well-defined property rights or lack of their enforcement in public or communal land. In such cases the private cost of expanding production is less than the social cost and there is overuse and degradation of environmental resources. If the country exports such resource-intensive products, foreign trade may make this misallocation worse. International trade theorists point out that trade restriction is not the best policy in this situation, whereas correcting the property rights regime *is* (including community-based regulations and co-ordination). But the latter involves large changes in the legal regulatory or community institutional framework, which take a long time to implement, and given the threshold effects and irreversibilities in environmental degradation (a forest regeneration requires a minimum stock, for example), it may not be possible to wait. In that case, some programme of (time-bound) trade restriction coupled with serious attempts at the overhaul of the domestic institutional framework may be necessary. In other cases, domestic policy changes can be implemented much more quickly, and restricting trade is unnecessary and undesirable. For example, when coastal shrimp ponds in a shrimp-exporting country such as India or Bangladesh pollute the water supply and destroy surrounding mangroves, domestic taxes on the basis of a 'polluter pays' principle are imperative. In some cases, domestic government policies are primarily responsible for environmental degradation. For example, administered under-pricing of precious environmental resources (irrigation water in India, energy in Russia, timber concessions in Indonesia and the Philippines, and such like), prolonged by pressure from powerful political lobbies, is a major cause of resource depletion. Domestic vested interests, not globalization, are responsible for the continuation of such socially damaging policies.

In the case of some resource-intensive exports, it is difficult for a country to adopt environmental regulations if its international competitors do not adopt them at the same time, giving the latter the ability to undercut the former in international markets. Here, there is an obvious need for co-ordination in the environmental regulation policies of the countries concerned. Given the low elasticity of demand for many resource-intensive primary export commodities from developing countries in the world market,[18] such co-ordinated policies, while raising prices and the terms of trade, need not lead to a decline in export revenue.

A common charge against multinational companies is that they flock to developing country 'pollution havens' to take advantage of lax environmental standards. In one of the very few careful empirical studies on the question, Eskeland and Harrison (2003) examine the pattern of foreign investment in Mexico, Venezuela, Morocco and Côte d'Ivoire. They find no evidence that foreign investment in these countries is related to pollution abatement costs in rich countries. They also find that, within a given industry, foreign plants are significantly more energy-efficient and use cleaner types of energy compared to their local peers.

Conclusion

In general, the debates on globalization often involve a clash of counterfactuals. On one side, those who are against the pace of business-as-usual global trade and investment are making a plea for doing something about the jobs and entrepreneurial opportunities for the poor and for small enterprises that are being wiped out, and against the monopolistic practices of giant multinational companies and the environmental damages caused by economic expansion. So their counterfactual is the world of more social justice and less dominant trading and investment companies, which gives more breathing space to the producers and workers among the poor. On the other side, the counterfactual for pro-globalizers is the case when there is no (or limited) trade or foreign investment, a world which may be worse for the poor (as in the extreme cases of the closed economies of North Korea and Burma). The way out of this clash of counterfactuals is to insist that there are policies that may attempt to help the poor without necessarily undermining the forces of globalization. In this study, we have emphasized that, in the medium to long run, globalization need not make the poor much worse off if appropriate domestic policies and institutions are in place, and appropriate co-ordination among the involved parties can be organized. If the institutional prerequisites can be managed, globalization opens the door for new opportunities, even for the poor. Of course, domestic institutional reform is not easy and requires political leadership, popular participation and administrative capacity, which are often lacking in poor countries. One can only say that, if the focus remains on agitating against multinational companies and international organizations such as the WTO, attention in those countries is often deflected from the domestic institutional vested interests, and the day of challenging them politically is postponed. In fact, in some cases, opening the economy may unleash forces for such a challenge. So instead of pushing for anti-globalization policies if the requisite institutions and policies are not in place, pushing for a package that contains both open-economy policies and those for support infrastructure and social protection may be more successful (both politically and economically).

As in the debates several decades back around 'dependency' theories in development sociology, there is often a tendency to attribute many of the problems of underdevelopment to the inexorable forces of the international economic and political order, ignoring the sway of domestic vested interests. In many countries, rural poverty alleviation in the form of expansion of credit, marketing and extension facilities, land reform, public works programmes for the unemployed, provision of education, vocational training and so on need not be blocked by the forces of globalization. This, of course, requires a restructuring of existing budget priorities and a better and more accountable political and administrative framework, but the obstacles to these are often largely domestic (particularly in countries where there are some coherent governance structures in place). In other words, for these countries, globalization is often not the main cause of their problems, contrary to the claim of the critics of globalization – just as globalization is often not the main solution to these problems, contrary to the claim of some over-enthusiastic free-traders.

All this, of course, does not absolve international organizations and entities from responsibility for helping the world's poor; by working towards a reduction of rich country protection on goods produced by the poor; by energetic anti-trust action to challenge the monopoly power of international (producing and trading) companies based in rich countries; by facilitating international partnerships in research and development of products (for example, drugs, vaccines and crops) suitable for the poor; by organizing more substantial (and more effectively governed) financial and technology transfers and international adjustment assistance for displaced workers; and help in (legal and technical) capacity building for poor countries in international negotiations and quality certification organizations. Globalization should not be allowed to be used, either by its critics or by its proponents, as an excuse for inaction on the domestic as well as the international front when the matter involved is that of relieving the crushing poverty in the lives of billions of people around the world.

Notes

Reprinted from *World Development*, vol. 34, no. 8, Pranab Bardhan, 'Globalization and Rural Poverty', pp. 1393–1418, copyright (2006), with permission from Elsevier.

1. See, for example, Rodrik and Rodríguez (2000). Warner (2003) has in turn refuted some of the criticisms of the earlier literature made by the latter. Wacziarg and Welch (2003) shift the focus from cross-section to time-series and panel analysis, and seem to support the view that trade liberalization has a positive impact on growth.
2. This figure in fact relates to China in 1980.
3. Ravallion and Chen (2004) note that mean tariff rates in China fell only slightly in the 1980s, and non-tariff barriers in fact increased, and show econometrically that growth in the primary sector (mainly agriculture) rather than in the secondary or tertiary sectors is largely responsible for the decline in poverty. One of their conclusions: 'our data do not suggest that expanding trade can explain China's progress against poverty'.
4. See, for example, Timmer (2004).
5. This relates to the total population; they do not yet have a separate estimate for rural poverty.
6. This is, of course, not to minimize the trade barriers imposed by developing countries on imports of other developing countries, which are often higher than those imposed by rich countries. There are some conflicting estimates of the welfare gains of the reduction in trade barriers imposed by developing countries themselves in relation to that for reduction in trade barriers imposed by industrial countries. A convincing estimate by Cline (2004) suggests that industrial country liberalization provides from about half to two-thirds of the total potential welfare gains to developing countries from trade liberalization.
7. Adjusting for preferential entry of farm products from some countries, the agricultural protection for the EU goes down to 34.5 per cent.
8. See, for example, the Oxfam Report, *Rigged Rules and Double Standards: Trade, Globalization, and the Fight against Poverty* (2002).
9. Similarly, there are reports that, in the UK, for every GB£1 that shoppers spend on Ecuadorian bananas, around 40 pence goes to supermarkets, while plantation workers receive just 1.5 pence; see www.bananalink.org.uk/tuforum/split.htm. Five companies control over 80 per cent of the global market.

10. Much of the information in this paragraph is from a summary report by Action Aid International (2005). The original sources are cited there.
11. Unless the public monopsony is replaced by private marketing cartels.
12. See, for example, Gilbert and Varangis (2003) for the case of cocoa. For a whole range of crops in Africa, see the analysis in Townsend (1999).
13. This was emphasized by Wood (1997). For detailed evidence from Colombia, see Goldberg and Pavcnik (2004).
14. Attanasio *et al*. (2004) find some evidence that the increase in the size of the informal sector in Colombia towards the end of the 1990s is related to increased foreign competition.
15. See Panagariya (2004).
16. In terms of population, roughly a fifth of the total population of these least-developed countries is in one country, Bangladesh, which is a net importer of agricultural goods.
17. See, for example, Lanjouw and Ravallion (1999).
18. Repetto (1995) puts together the estimates of world elasticity of demand for some of the natural-resource-intensive export commodities of developing countries. For the eight commercial agricultural commodities considered by him, the absolute value of the elasticity does not exceed 0.5. For tropical timber it is 0.16 for non-conifer logs, 0.74 for non-conifer sawn wood, and 1.14 for non-conifer plywood.

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7

Globalization, Production and Poverty

Rhys Jenkins

Introduction

The impact of globalization on poverty is a key area of both academic and political debate. However, the analysis of the relationship between the two, as it has developed so far, has serious limitations. The bulk of the literature has focused on *trade* and poverty, while other dimensions of globalization have received relatively little attention.[1] Moreover, most of the literature on trade and poverty is in fact about the impact of trade *liberalization* on poverty, and therefore about the effects of a particular trade *policy*.[2]

Methodologically, the literature has been dominated by studies at an aggregate level, often involving cross-country comparisons of large numbers of countries. There is an extensive literature on the relationship between globalization, usually identified with greater trade openness, and growth.[3] This has been complemented recently by a consideration of the link between globalization and poverty, often by extending the chain from growth to poverty (Dollar and Kraay, 2000, 2001; Dollar, 2001). Concerns over the dominance of cross-country regressions in analyses of the impacts of globalization have led a number of economists, such as Srinivasan and Bhagwati (1999), to argue in favour of more in-depth case studies. Ravallion (2001) has also pointed 'to the importance of more micro, country-specific, research on the factors determining why some poor people are able to take up the opportunities afforded by an expanding economy – and so add to its expansion – while others are not'. It is only through this kind of detailed analysis of specific cases that focus on the mechanisms through which globalization affects poverty that the shortcomings of the cross-country emphasis on macro outcomes can be overcome.

The research study reported in this chapter is an attempt at such a micro, country-specific approach.[4] The focus is not primarily on trade policies but rather on the impact of integration with the global economy more broadly. It involved research in four countries – Bangladesh, Kenya, South Africa and Vietnam, and case studies of three value chains – horticulture, garments and

Table 7.1 Case study countries

	Bangladesh	**Kenya**	**South Africa**	**Vietnam**
Horticulture		X	X	
Garments	X			X
Textiles			X	X

textiles. Each of the value chains was studied both at the global level and in two of the case study countries, as indicated in Table 7.1. In each of the four countries, aggregate studies of the employment impacts of globalization were also carried out.

A macro–meso–micro approach

There are a number of channels through which globalization can have an impact on poverty. Increased trade, flows of foreign direct investment, short-term capital flows, international technology transfer and changes in the global 'rules of the game' (both private and, public) all have potential impacts on the poor. The poor are affected by economic changes as producers, consumers and recipients of benefits from the state. The focus of this research was on the poor in their role as producers (both as waged workers and, in the case of horticulture, as smallholders). The central question it addresses is the impact of globalization on employment and income opportunities for poor people. One of the defining characteristics of the globalization of production in recent years is the way in which large areas of economic activity have become integrated into global value chains. There is a growing literature on global value chains (also referred to as 'commodity chains') which analyses their implications for the development of industrial and agricultural production in the South.[5] The bulk of this literature has focused on inter-firm relationships and issues of governance, power and the distribution of profits within the chain. Relatively little attention has so far been paid to the direct producers, whether waged labourers, home workers or agricultural smallholders, in the value chain literature. However developments within a value chain will clearly have major implications for those who are integrated and who are marginalized as producers, and hence who will be the winners and losers from globalization.

In order to analyse the impact of a particular value chain on poverty, more detailed analysis is required at the level of workers and their households. Who are the major beneficiaries of any new production opportunities generated by globalization? Are they from poor households, and do their new sources of income lift their households out of poverty? Are those marginalized by global trends disproportionately from amongst the poor, and where producers are displaced, does this push them into poverty? How do those integrated into global value chains evaluate their own situation in terms both of income and security? How have working conditions and employment status been affected by globalization? Value chain analysis can present only a partial picture of the impact of globalization on poverty in a country. Since globalization leads to changes in the structure of production, there will inevitably be some sectors where opportunities expand, while in others they will contract, and losers from globalization will outweigh winners. Meso-level studies must therefore be seen in the context of the overall changes in employment that have taken place in a country. On balance, has globalization created more jobs than it has destroyed? If so, who are the principal beneficiaries in terms of skill and gender? These questions can only be answered at the macro level, which is a necessary complement of the value chain studies.

Globalization and poverty in four countries

The four countries studied for this research were selected as cases where globalization was expected to have had a significant impact on their economies. Vietnam and South Africa showed the most striking changes with the disintegration of the communist bloc and the lifting of sanctions, respectively, ending their isolation from the global capitalist economy. Bangladesh is included by the World Bank in its list of 'globalizing economies' (World Bank, 2002) and has become an important supplier of garments to the world market. Kenya was among the top ten countries in the world in terms of its proportionate tariff reductions in the 1980s and 1990s (Rodrik, 2000) and has emerged as a major supplier of horticultural products to the EU.

Bangladesh

At the time of independence from Pakistan in 1971, Bangladesh was a largely rural economy with a relatively low level of integration with the global economy. Even by the early 1980s exports were less than US$1 billion and accounted for only about 5 per cent of GDP (Paratian and Torres, 2001, fig. 2). This began to change in the 1980s with the establishment of the first export processing zone (EPZ) at Chittagong in 1983. Exports of garments, which had been negligible in the 1970s, grew rapidly during the late 1980s. A second EPZ was set up near Dhaka in 1993 and generous incentives offered to firms investing there. The 1990s were marked by an acceleration of trade reforms and the introduction of a unified exchange rate system (Sen, 2002). These measures were reflected in an increase in the share of exports plus imports in GDP from a fifth in 1990 to a third in 2002 (see Table 7.2). They also led to an increase in inflows of FDI in the late 1990s, most of which went to the EPZs. These zones have been a key factor in the export success of

Table 7.2 Globalization and poverty in four countries (percentages)

	Period	Bangladesh	Kenya	South Africa	Vietnam
Real GDP growth (per annum)	1990–2002	4.9	1.9	2.2	7.6
Real GDP p.c. growth (per annum)	1990–2002	3.0	−0.9	−0.2	5.7
Export growth current US$ (per annum)	1990–2002	11.5	3.3	2.2	19.3
Trade openness*	1990	19.7	57.0	43.0	62.1
	2002	33.3	56.4	64.5	115.0
FDI stock/GDP	1990	1.1	7.8	8.2	4.0
	2002	5.2	7.8	28.7	50.2
Poverty rate**	early 1990s	58.8	48.8	51.1	58.0
(headcount ratio)	early 2000s	49.8	55.4	48.5	29.0

Notes: *Exports and imports of goods and services as a per cent of GDP in current terms; **Based on national poverty lines.

Sources: GDP, export and openness data from World Bank (2004), apart from trade openness in Vietnam in 1990 from national data. FDI data from UNCTAD foreign investment database (www//stats.unctad.org/fdi). Poverty data: for Bangladesh, Rahman and Islam (2003, table 2.1); for Kenya, Republic of Kenya (2004); for South Africa, UNDP (2003, table 2.20); for Vietnam, Thoburn (2004).

Bangladesh in recent years, which has been based mainly on the garment industry.[6]

Although Bangladesh remains a least developed country (LDC), GDP grew by almost 5 per cent per annum between 1990 and 2002, and GDP per capita has increased by 3 per cent per annum, which is faster than in the 1970s and 1980s (Stern, 2002). The growth of garment exports has contributed to a significant increase in total exports, which grew by 11.5 per cent per annum between 1990 and 2002. The country continues to be heavily dependent on foreign aid, but the growth in exports has increased the share of its imports, which are now covered by export earnings.

This improved economic performance has led to a reduction in the incidence of poverty in Bangladesh. The proportion of the population below the poverty line fell from 58.8 per cent in 1991 to 49.8 per cent in 2000 (see Table 7.2). Because of population growth, however, the total number of people below the poverty line was virtually unchanged at around 63 million over the period (Stern, 2002).[7]

Kenya

In the 1980s, Kenya was the most open of the four countries, despite having pursued import substituting industrialization after achieving independence in 1963. However, in contrast to the other three countries, where openness increased significantly during the 1990s, the share of exports and imports in

GDP in Kenya was virtually the same in 2002 as in 1990. This tendency was not a result of the adoption of more restrictive trade policies in Kenya. Indeed the government introduced a phased programme of tariff reductions and revoked most import licensing schedules from the early 1990s. By the mid-1990s all administrative controls hampering international trade had been abolished, tariffs had been reduced significantly, export incentives put in place, exchange rate controls removed, and the current account liberalized (Manda, 2002; Manda and Sen, 2004). In other words, while Kenya became more open in terms of trade policy during the 1990s, this was not reflected in trade flows. A similar situation applied to FDI, where despite a consistently liberal environment towards FDI there was no increase in the stock of it relative to GDP (see Table 7.2).[8]

What does this apparent paradox imply about the globalization of the Kenyan economy? The most plausible explanation is that, as a foreign exchange constrained economy, the key determinant of the ratio of trade to GDP is the performance of exports, and it is the poor performance of Kenyan exports that accounts for the apparent failure of the Kenyan economy to globalize during this period.[9] Kenya can therefore best be described as an unsuccessful globalizer rather than a non-globalizer. At the macro level, this lack of success is reflected in the slow rate of growth of GDP, which was less than 2 per cent per annum between 1990 and 2002 compared to over 4 per cent per annum in the 1980s (see Table 7.2 and World Bank, 2004, table 4.1) while, in per capita terms, income in fact fell during this period.

Data on poverty in Kenya during the 1990s indicate that the share of the population living in poverty increased sharply during the early 1990s, declined during the mid-1990s, and then rose steadily after 1997. In 2001, over 17 million people were living in poverty – more than 55 per cent of the total population (Republic of Kenya, 2004: 9). This was a rise of more than six percentage points compared to 1990 (see Table 7.2), representing an increase in the total number in poverty of almost 6 million people.

South Africa

Although by no means a closed economy, South Africa before 1994 could not be regarded as being fully integrated with the global economy. The increasing isolation of the apartheid regime and the growing economic difficulties of the 1980s were reflected in imports and exports falling as a share of GDP. The imposition of sanctions and the pressures put on major transnational corporations over their links with South Africa also meant that the country received very little foreign direct investment during the 1980s. In the 1990s, particularly after the African National Congress (ANC) came to power in 1994, the South African economy became increasingly globalized. The share of imports and exports to GDP began to rise, as did foreign investment (see Table 7.2). There was also increased financial globalization as portfolio investment and short-term capital flows shot up and a number of leading

South African firms were listed on international exchanges (Hayter *et al.*, 2001: 15–9). These changes partly reflected the ending of sanctions and the acceptance of the new South Africa within the international community. They were also promoted by government policy. Even before the political changeover, the old regime had begun to liberalize trade in a piecemeal way in the early 1990s. However, it was really from 1994 onwards that major import liberalization was undertaken. The ANC government went ahead with trade liberalization even faster than was required under its WTO obligations. In 1996, with the adoption of the Growth, Employment and Redistribution (GEAR) macroeconomic strategy, it committed itself to 'trade and industrial policies [which] aim to promote an outward-oriented industrial economy, integrated into the regional and global environment and fully responsive to market trends and opportunities' (GEAR quoted in Hayter *et al.*, 2001: 13).

South Africa's growth performance since the early 1990s has been disappointing. GDP growth between 1990 and 2002 was only just over 2 per cent per annum (see Table 7.2), and even when the very low growth rate during the last years of the apartheid regime is taken into account, the growth rate since 1995 has been lower than in the 1960s and 1970s (UNDP, 2003, fig. 2.2). The overall rate of growth of exports has also been low, despite the fact that South Africa's non-gold exports have performed relatively well since 1994 (UNDP, 2003: 14).

The election of the ANC government in 1994 raised hopes that there would be substantial poverty reduction in South Africa as a result of the change of regime. However, the results have been disappointing so far. The proportion of the population below the national poverty line fell from 51.1 per cent in 1995 to 48.5 per cent in 2002 which, given the growth of population, meant an increase in the total number of poor from 20.2 million to 21.9 million. In terms of the US$2 a day poverty line, the reduction was barely significant, from 24.2 per cent to 23.8 per cent, while the proportion living on under a dollar a day actually increased, from 9.4 per cent to 10.5 per cent over the same period (UNDP, 2003: 41).

Vietnam

Until the late 1980s, Vietnam was largely isolated from the capitalist world economy as a result first of war and then of US sanctions and its membership of the socialist bloc. During the 1990s, the Vietnamese economy underwent a transition from being a centrally planned economy to a much more market-orientated system, and from a relatively closed economy to one that is increasingly integrated with the world market. This process began with the adoption of *doi moi* (renovation) in 1986. The trade openness of the economy more than doubled during the late 1980s, and almost doubled again between 1990 and 2002. FDI flows also grew rapidly from the early 1990s, averaging over 9 per cent of GDP between 1994 and 1997, the highest level in any developing or transition economy during this period (Jenkins, 2006b).

The increased openness of the Vietnamese economy since the early 1990s was a result of several factors. The embargoes that limited trade during the 1980s were lifted, giving access to developed country markets. The domestic reform programme created a more dynamic and competitive economy, better able to take advantage of these export opportunities. This was facilitated by the policies that were introduced to lift some of the restrictions on international trade and to promote foreign investment, and which began at the end of the 1980s. But although controls on foreign trade were relaxed significantly in the early and mid-1990s, the IMF still ranked Vietnam as having one of the most restrictive trade regimes among all its members in the late 1990s (IMF, 1999: 59). Vietnam's experience during the 1990s is the opposite of that of Kenya, in the sense that the economy became much more open in terms of outcomes (the ratio of trade to GDP) while remaining relatively closed in terms of policy. Indeed, Vietnam's integration with the global economy has more in common with the East Asian NICs, which promoted exports while simultaneously protecting the domestic market, than the outright liberalization that has characterized many developing countries in recent years.

The period of economic transformation in Vietnam since the early 1990s has been marked by one of the highest rates of growth in the world. Between 1990 and 2002, GDP grew at an average of 7.6 per cent per annum, while exports grew at almost 20 per cent per annum (see Table 7.2). This rapid rate of growth has been accompanied by a substantial reduction in the proportion of the population below the poverty line, which fell from 58 per cent in 1992/3 to 37 per cent in 1997/8, and 29 per cent in 2002 (Thoburn, 2004: 129). This represented a dramatic fall in the absolute number living in poverty, of around 17 million people – from almost 40 million in the early 1990s to 23 million in 2002. Thus both in terms of overall economic performance and of poverty reduction, Vietnam was far and away the most successful of the four countries during this period.

The macro level: the employment impact of globalization[10]

Has globalization increased employment opportunities?

One of the most striking results of the study at the macro level was the contrast between the two Asian countries and the two sub-Saharan African cases. Whereas unskilled, labour-intensive industries accounted for 90 per cent of manufactured exports[11] in Bangladesh and almost 60 per cent in Vietnam in the late 1990s, the corresponding figures for Kenya and South Africa were 16 per cent and 10 per cent, respectively (Jenkins and Sen, 2005, table 1). This difference was also reflected in the factor content of trade, with the two Asian countries' export sectors being much more labour-intensive than their import-competing sectors, while in Kenya there was little difference in factor content, and in South Africa exports were less labour-intensive (Jenkins and Sen, 2005). As a result, the impact of increased exports on employment has been much more significant in Bangladesh and Vietnam than in the sub-Saharan African countries. Even when the effects of increased import penetration on domestic industry are taken into account, the net effects of trade on employment were still substantially positive in Asia while they were negative in Kenya, and in South Africa during the early 1990s (see Table 7.3).

One limitation of the decomposition approach to estimating the impact of trade on employment is that it treats productivity growth as an independent factor affecting employment. However, globalization is likely to have an important effect on productivity through increased competition in both export and domestic markets, increased availability of imported equipment, and greater technology transfer through FDI and other mechanisms. Various studies carried out for the research found evidence to support such effects.

In both South Africa (Jenkins, 2006a) and Vietnam (Jenkins, 2004) econometric analysis based on industry-level data found that increased import penetration had a significant negative effect on employment over and above that attributable to output. In the South African case there is further evidence from firm-level data that import penetration affected employment negatively in large firms, and that relatively large declines in employment also occurred within export firms (Edwards, 2004). The evidence from the South African textile case study similarly suggests that reductions in employment were partly a result of globalization, as firms restructured to compete with imports and tried to enter export markets (Roberts and Thoburn, 2004). However, this only explains part of the significant overall decline in formal sector employment in South Africa in recent years.

The impact of foreign investment on employment in the four countries has been small. With the exception of Vietnam, FDI has been quite limited in the countries studied, and even in Vietnam it has not been a major

Table 7.3 Employment impact of trade in manufactures on four countries

	Export growth	**Import penetration**	**Net trade effect**
Bangladesh			
1990–7	802,205	−57,296	744,909
Kenya			
1990–4	5,039	−9,929	−4,890
1994–8	−8,320	−4,513	−12,833
South Africa			
1990–5	108,339	−125,885	−17,546
1996–2001	77,733	−5,879	71,854
Vietnam			
1995–9	698,703	−224,259	474,444

contributor to employment (Jenkins, 2006b). Foreign subsidiaries tend to be more capital-intensive than locally owned firms, further reducing their impact in terms of employment.[12] In both South Africa and Kenya, employment growth in foreign manufacturing subsidiaries lagged behind that in locally owned firms during the 1990s (Edwards, 2004; Manda and Sen, 2004).

What types of employment opportunities has globalization created?

In terms of the potential impact of globalization on poverty, it is important to analyse not only the level of employment created, but also the types of jobs in terms of gender and skill. In the two Asian countries, the main beneficiaries (in terms of job creation) are clearly women. In both Bangladesh and Vietnam, export industries make much more intensive use of female labour than import-competing industries (Jenkins and Sen, 2005, table 2). This is confirmed by the case studies of garments in Bangladesh, and garments and textiles in Vietnam, where the vast majority of workers are female. In the case of Kenya, however, manufactured exports are no more intensive in female labour than import competing industries, and the same is likely to be the case in South Africa.[13]

Have the changes in global integration in the four countries also had an impact on the skill composition of the demand for labour? At the aggregate level, some indicative results were obtained for Vietnam and South Africa. In the case of Vietnam, taking production workers as a proxy for unskilled workers, and technicians and administrative workers as skilled, exports were found to be more intensive in the employment of unskilled workers than import-competing sectors (Jenkins, 2004). Using a different classification of highly skilled, skilled, semi- and unskilled workers,[14] it was also found in South Africa that exports were less skill-intensive than import competing industries, although the difference was much less marked than in Vietnam (Jenkins, 2006a). Contrary to what this might suggest, changing trade patterns have led to a greater increase in demand for highly skilled labour than for less skilled workers in South Africa (Edwards, 2001; Jenkins, 2004).

The overall demand for labour is also affected by changes in skill intensity within industries, which may be partly a result of globalization. Using firm-level data for South Africa, Edwards (2004) found evidence that was consistent with skill-biased technological change arising from 'defensive innovation' by firms facing increased import competition. He also found evidence that firms relying more heavily on imported raw materials were more skill-intensive. In Kenya too, firm-level evidence points to skilled workers (as proxied by education levels) benefiting from globalization while unskilled workers have been adversely affected (Manda and Sen, 2004). Foreign ownership also tends to be associated with a greater demand for skilled labour, at least in South Africa and Vietnam, the two countries for which we have data (Edwards, 2004, GSO, 2000, table 17).

At the macro level, the picture that emerges from the studies is that globalization has had significant positive impacts in terms of employment in Bangladesh and Vietnam, but the effects have been much less favourable in the sub-Saharan African countries, and probably even negative in Kenya. In terms of the likely impacts on poverty, this differentiation is further reinforced by the outcomes in terms of the types of jobs involved. In Asia, these are primarily unskilled production jobs, filled mainly by women. In the two sub-Saharan African countries, on the other hand, the tendency has been for globalization to favour skilled workers, rather than unskilled workers, and there is no evidence to suggest that overall female employment has increased significantly.

Even in Bangladesh and Vietnam, where there are significant positive impacts on employment, it is necessary to put these in context in terms of the overall scale of poverty. With around 63 million people in poverty in Bangladesh and 23 million in Vietnam at the start of the twenty-first century, the net employment of less than a million in each country that has been created by exports in the 1990s can have had only a minor impact on the level of poverty.

The meso level: global value chains and local opportunities

The analysis of the previous section indicated that many of the impacts of globalization occur within sectors, rather than as a result of reallocation of resources between different sectors. Some of these have already been touched on, such as the effect of globalization on technological change. However, a more detailed analysis of such issues can only be carried out at the meso level. At this level it is the integration of local producers into global value chains (or their exclusion from them) that determines the income opportunities for the poor, and it is the dynamics of the value chain that determine their stability and sustainability. Thus, a starting point is the analysis of the global value chain and the way in which the country is included in the chain. The dynamics of the value chain are determined both by factors internal to it, such as the governance structure, and external factors, such as trade agreements and restrictions. A major insight of global value chain analysis is that changes at the global level, reflecting, for example, competitive conditions in northern markets, are transmitted to producers in the South. While this has traditionally been discussed in the literature in terms of implications for exporters and manufacturers, emphasizing what is required to be internationally competitive, it can also have important implications for who benefits and who loses at the local level.

As indicated previously, research was carried out on three global value chains. Horticulture was selected as a major non-traditional agricultural export that has acquired increasing importance for a number of low-income countries. Garments were the obvious choice as a manufactured good, which has been the entry point into world markets for many countries, while textiles were selected as an example of a sector where production for the domestic market had traditionally been important and which was now subject to increased global competition. Each value chain was studied in two of the case study countries (see Table 7.1).

How do value chain dynamics affect employment opportunities?

A fuller understanding of the ways in which globalization creates or destroys jobs, and the kinds of opportunities created can be obtained by analysing the dynamics of specific value chains. A number of examples from the research can help illustrate this point. Since the 1980s, Kenya has established itself as a major supplier of horticultural products to the European market, and by 2000 these products were the country's third-largest source of foreign exchange. During the 1990s, exports to the EU of fresh vegetables, which were the subject of the case study, grew by an average of more than 12 per cent per annum (Humphrey e*t al.*, 2004, table 1). Kenyan vegetable exports to Europe go predominantly to the UK, where a small group of supermarkets have gained an increasing share of the retail market. Fresh fruit and vegetables have become a key area of competition between retailers, with supermarkets competing on the basis of quality, year-round availability, presentation and packaging as well as price. This has led to the supermarkets exercising ever-tighter control over their supply chain. One of the major consequences of this has been an increased level of preparation and packaging of fresh vegetables. Traditionally, vegetables were sold loose without any processing, but now an increasing proportion is sold in prepared and packaged forms. Preparation and packaging is usually carried out in the country of origin, which has created new employment opportunities in packhouses in Nairobi, for example. Prepared vegetables are estimated to be between 2.5 and 5 times more labour-intensive than unprepared vegetables (Humphrey *et al.*, 2004: 74), so that the shift to more packaged formats has substantially increased employment opportunities in Kenya. Packing work is regarded as unskilled, and the majority of the new jobs have been filled by young women.[15]

A contrasting example comes from the South African textile value chain, which has been forced to restructure in the face of increased international competition following the opening up of the South African market and the decline of local garment manufacturing. A significant number of textile firms closed down, especially among those that produced standardized textiles. As a result, major former textile centres, such as Harrismith and Butterworth, have become industrial ghost towns. The firms that have adjusted most successfully to the new conditions have specialized in niche markets (for example, technical textiles) and invested in order to upgrade their ageing equipment, which in some cases involved foreign investment. They have also expanded into exports, partly in response to the more difficult conditions in the domestic market.

Not surprisingly, these trends have had a very negative impact on employment, which fell across all sectors, but was particularly marked in spinning, weaving and finishing, where employment was reduced by 45 per cent over the five years 1996–2001. With stagnant output and increasing productivity as a result of the new investment in more capital-intensive equipment, a fall in employment was inevitable. There is also evidence suggesting that it was the least skilled and lowest-paid workers who lost their jobs in the restructuring (Bezuidenhout *et al.*, 2003, table 9.2) and that the shift into niche markets was likely to be associated with a greater demand for skilled labour. Thus the particular way in which a country is inserted into the global value chain, and the dynamics of that value chain, can have quite different results in terms of the impacts of globalization both on the level and type of employment opportunities created (and destroyed).

Winners and losers in global value chains

Integration into global value chains often has differential impacts on participants at the local level, with some becoming integrated more closely with global production while others are marginalized. A clear example of such marginalization is the experience of smallholders in the Kenyan horticulture value chain, where the need for tighter control over suppliers to ensure standards and practices are in line with EU requirements led UK retailers to rationalize their supply base, creating a much closer relationship with a select group of 'preferred' suppliers. This resulted in a drastic decline in the proportion of exports coming from smallholders, as exporters have come to rely increasingly on production from their own or leased land, and to a lesser extent on large commercial farms (Dolan and Sutherland, 2002, table 2.4).

Another example of the differential impacts of globalization comes from the textile and garment industries in Vietnam. First, the inclusion of the industry in the global value chain has meant a much faster rate of growth of the garment part of the chain compared to textiles. This reflects the fact that garment exports have been undertaken predominantly on a CMT (cut, make, trim) basis, whereby fabric sourcing is determined by the buyers and, because of quality concerns, has tended to involve importing fabrics.[16] As a result, although there was an increase in total employment in the industry during the 1990s, this was the outcome of a rapid growth in jobs in garment manufacturing and a reduction in employment in textiles (Nadvi and Thoburn, 2004a, tables 2 and 3).

There are also differential gains at the level of firms, with large state-owned enterprises (SOEs) best able to insert themselves into the value chains of the leading global buyers, since they can take on large orders, manufacture a range of products and comply with global standards.[17] Small private firms, on the other hand, often supply regional traders and have been unable to access the higher-value chains.

Competitive pressures and labour market flexibility

It is common for developing-country producers in global value chains to be subject to intense competition with developed-country buyers always on the look-out for new suppliers, both within the countries in which they currently operate and from new sources. One manifestation of this competition is the downward pressure on prices. In the garment industry, buyers consistently renegotiate prices downwards with their suppliers (Nadvi and Thoburn, 2004b). South African apple producers faced falling prices as a result of increased competition, both from other South African growers and from Chile and New Zealand (Barrientos and Kritzinger, 2004). In the case of industries such as South African textiles, where globalization has been associated with reduced protection for the domestic market, the impact of competition from imports on prices has also been marked (Roberts and Thoburn, 2003).

Competition in global value chains is not based solely on price. Quality standards, lead times and delivery dates are also crucial attributes that producers need to meet. In garments, competitive pressures at the retail end of the chain have intensified with the entry of new types of retailers, including supermarkets, discount outlets and specialist multiples targeting the youth market. This has led to efforts to increase shelf turnover and reduce lead times. Similarly in horticulture, competition among supermarkets has led to the adoption of just-in-time methods to reduce inventory costs. In both value chains, producers in developing countries have needed to employ a flexible labour force that can respond to changes in supply and demand. This is often reflected in periods of intense overtime work leading to long hours when orders have to be met, alternating with lay-offs and short-time working when demand is slack.

The micro level: impacts on workers and households

The macro and meso analysis can provide broad contours of how globalization is affecting employment and working conditions locally, but a complete understanding of who is benefiting and losing out, and what the implications are in terms of poverty, requires more detailed research at the micro level.[18] A household-level analysis is also necessary in order to go beyond a purely income/consumption based concept of poverty, to address the impacts of globalization in terms of vulnerability/security (Kanji and Barrientos, 2002).

Are the poor accessing global value chains?

As was discussed above, globalization has created new employment opportunities in the South, although it has also destroyed some existing jobs. The first question therefore is whether the poor have been able to take advantage of these opportunities. One way of looking at this is to examine the extent to which the poor are involved in global value chains. There was a considerable difference here between the three value chains that were studied. In horticulture in Kenya, and to a lesser extent South Africa, a significant number of households were below the poverty line. In the Kenyan case this proportion was higher among farm workers and smallholders than among urban-based packhouse workers (McCulloch and Ota, 2002, table 12). In South Africa the majority of migrant workers, and some permanent and contract farm worker households, were below the poverty line (Barrientos and Kritzinger, 2003). In contrast, in the garment and textile industries, average earnings were well above the local poverty line in all three countries (Bangladesh, South Africa and Vietnam) and very few of those involved fell below the poverty line.[19]

However, the extent to which the poor are currently involved in a value chain does not provide a good indicator of the impact of the value chain on poverty. If globalization is lifting people out of poverty, then large numbers of the non-poor in the value chain could previously have been, or would otherwise be, poor. On the other hand, if globalization is passing the poor by, then those involved in the value chain would not come from the poorest sections of society in any case. Given the predominance of rural poverty in the four countries, one indicator of the likely impact of a value chain on poverty is the extent to which it provides employment opportunities to migrants from rural areas. The surveys carried out in the four countries showed that migrants account for the bulk of the labour force in Kenyan horticulture, and in garments in Bangladesh and Vietnam.[20] In contrast, migrants make up a much lower proportion of those employed in textiles in both South Africa and Vietnam.[21] Textile workers also tend to be more skilled than garment or horticulture workers, as reflected in their levels of education (Bezuidenhout *et al.*, 2003, table 9.2; Nguyen *et al.*, 2003). Since poverty is also most prevalent among the least educated and unskilled, this reinforces the notion that the poor are more likely to find work in horticulture and garments than in the textile industry.

Do living standards improve through involvement in global value chains?

Are those involved in the different value chains better off as a result? All the surveys compared the income levels of households within the value chain with a control group of non-participating households.[22] The Kenyan study found that, on average, those involved in horticulture were indeed better off, particularly in rural areas (McCulloch and Ota, 2002, table 10). Econometric analysis confirmed that these differences were not related to differences in household characteristics between those involved in horticulture and those that were not. In other words, similar households would tend to have a higher income if they had a member engaged in horticultural activities. In the Bangladesh garment industry, the highest incomes were earned by workers in the EPZs, but those of non-EPZ garment workers were also higher than those of non-garment workers (Kabeer and Mahmud, 2004, tables 5 and 6). In the South African textile industry, although wages are lower than the average for manufacturing as a whole, the per capita income of textile households was higher than for non-textile households.[23] In the textile and garment industries of Vietnam, although wages were well above the official minimum wage, on average the surveys found that textile and garment wages were slightly lower than for those outside the chain.

With the exception of Vietnam, where differences in wages are in any case less because of the government's socialist orientation, those involved appear to be generally better off than those who are not. To some extent this could be because of differences in household characteristics, but the Kenyan example shows that, even when these are controlled for, an income differential remains. An alternative way of looking at the impact on households is to see whether they are better off than they were before becoming involved in a global value chain. The surveys do not provide any direct evidence of income before and after entering; however, there is some evidence on the perceptions of changes in living standards. In Kenyan horticulture, for example, two-thirds of all workers felt that their living standards had improved as a result of involvement in horticulture. This was much more pronounced among female workers, particularly those employed in packhouses, whereas slightly under half of male workers reported an improvement in living standards (Dolan and Sutherland, 2002, table 5.4). Generally the majority of migrant workers in all the case studies regarded themselves as being better off as a result of entering the different value chains.

Further support for the view that involvement in global value chains leads to increased incomes comes from those studies that looked at the incomes of retrenched workers in South Africa (textiles and horticulture) and Vietnam (textiles). In all three cases, incomes were considerably lower as a result of retrenchment. In South Africa, the very high levels of unemployment[24] mean that retrenched workers are likely to experience considerable difficulty in finding new jobs. Over 70 per cent of textile workers surveyed had been unable to find another job after being laid off – thus retrenched workers had household incomes per capita of less than a third of those of textile workers, which pushed the majority of them into poverty (Bezuidenhout *et al.*, 2003, tables 8.8 and 8.9). Those in former textile centres were particularly badly affected, because of the decline of the whole area with the closure of many mills and the lack of alternative employment. Similarly, in horticulture, retrenched workers who did not find new jobs suffered a serious drop in income (Barrientos and Kritzinger, 2003, table 7). In Vietnam, while workers also suffered a fall in household income as a result of retrenchment, in most cases this did not mean that they were pushed into poverty. This was partly because they received an unemployment allowance and also because of other income sources within the household. The one group of retrenched workers whose income did fall below the poverty line were unmarried women, who were not able to draw on the income of other household members.

The evidence from the different case studies supports the view that involvement in global value chains does help to raise the income levels of those involved. While this means that entrants to the value chains, particularly migrants from rural areas, stand to gain from the growth of employment opportunities described above, it also implies that they are very vulnerable to the threat of losing a job, since the consequences of retrenchment are likely to be severe in the absence of adequate safety nets.

How secure are households in global value chains?

As was indicated earlier in this section, livelihood analysis suggests that the impact of globalization on households cannot be analysed solely in terms of the impacts on income and consumption levels, but also needs to take into account the security/vulnerability of their livelihoods. The meso-level analysis of the previous section has already suggested that, in many global value chains, there are competitive pressures for increased labour flexibility in producing countries. These are experienced in terms of insecure employment conditions, long hours of work, poor working conditions, and fluctuating earnings. The case studies revealed numerous examples of such practices related to the position of workers within the value chain. They also indicated differentiated patterns within the overall trend. In horticulture, insecure employment and fluctuating earnings are both seen as being a problem. While permanent workers have a relatively stable guaranteed income throughout the year, casual and seasonal workers suffer from a lack of income security. In Kenya, where over 60 per cent of women and almost 40 per cent of men were on non-permanent contracts, security of employment was a major issue raised by workers (Dolan and Sutherland, 2002, table 4.1). Other complaints related to wage rates, which reflected concerns about the nature and stability of pay in the industry. This was particularly prevalent among those on piece rates.

In South Africa, there has been a shift away from permanent on-farm workers in the apple industry, towards the increasing use of seasonal and contract labour. This is part of a more general increase in non-standard forms of employment in South Africa, which has been documented in other sectors as well, and it is unclear how far it can be attributed to globalization and how far to changes in labour legislation and labour market institutions (Clarke *et al.*, 2003). Contract workers do not receive any of the legal benefits available to permanent workers, nor do they have any security of employment from day to day: as a result, although they may earn more than permanent workers on a daily basis, their incomes are much less stable

(Barrientos and Kritzinger, 2004). The extensive use of casual labour in horticulture in both Kenya and South Africa is not simply a response to the seasonal nature of agricultural production, but rather part of the drive for a flexible labour force to reduce labour costs and avoid the social benefits associated with permanent work.

A similar pattern of insecure employment was found in the garment industry. In Bangladesh, only 30 per cent of workers in the EPZs had permanent status, and a mere 8 per cent in the Dhaka garment industry outside the EPZs (Kabeer and Mahmud, 2004, table 7). In Vietnam, where the centrally planned economy had been associated with guaranteed employment and extensive workplace-based benefits, workers in SOEs have greater employment security and more benefits than those employed in private firms. Nevertheless, overall, 40 per cent of garment workers had contracts of a year or less (Kabeer and Tran, 2004) and there is some evidence of increased use of contract labour by private small and medium enterprises (Nadvi, 2004).

In contrast to horticulture and garments, the textile industry tends to be characterized by more stable employment conditions. In South Africa, almost 90 per cent of those surveyed were employed on permanent contracts, although there are considerable regional variations (Bezuidenhout *et al.*, 2003, table 7.1). Despite the decline in employment in the industry in recent years, three-quarters of those still in employment regarded their jobs as reasonably or very secure, and over 70 per cent thought that their security of employment was better than in other firms. Similarly, the majority of workers in the Vietnamese textile industry regarded their employment as secure, perhaps not surprisingly given that, on average, they had been in their current employment for fifteen years (Nguyen *et al.*, 2003, table 4.1)

The differences between the case studies reflect the fact that the impact on workers' livelihoods are context specific, depending both on the broader national environment and the characteristics of the global value chain concerned, and the position of the local producers within it. The particular history of Vietnam is reflected in greater stability for Vietnamese workers than in the other countries studied, while workers in the textile industry were generally more secure than those employed in garments or horticulture. This latter finding partly reflects the fact that workers in textiles are more skilled/educated than those in the other employments studied, and that the value chain is less subject to short lead times and fluctuating demand than are horticulture or garments.

How sustainable are employment and income in the long term?

In addition to the short-term fluctuations within the value chain that make workers and households vulnerable and insecure, critics of globalization often raise concerns over the long-term sustainability of employment and incomes. There are two dimensions of sustainability that need to be considered here. The first is from the point of view of the individual workers and their households; in other words, the prospects for continued employment at current or increased wages. The second relates to the overall sustainability of the industry in the country, given trends within the value chain and the global trade regime. A third dimension, which was not addressed in any of the case studies, is the environmental sustainability of production, an issue that has raised particular controversy in the case of Kenyan horticultural exports (Lawrence, 2003).

At the individual level, long hours of work and poor working conditions make it difficult for workers to continue in employment for many years. One of the major complaints of workers in the Kenyan horticulture industry concerned the hours they were required to work. During peak times they would work up to 12 hours a day to meet the tight schedules to which suppliers have to operate at the behest of the supermarkets. Workers also reported health problems, such as backache and joint problems, arising from the performance of repetitive tasks while standing for long hours in the packhouses. On farms, handling of chemicals has also led to skin allergies, headaches and fainting (Dolan and Sorby, 2003: 41–2). A similar pattern of long hours was also found in the garment industry. In Bangladesh, 30 per cent of workers in the EPZ and 72 per cent of those in the Dhaka garment industry worked more than 10 hours a day (Kabeer and Mahmud, 2004: 103), while in Vietnam the average working day for garment workers was 11 hours (Kabeer and Tran, 2004, table 12a). In Bangladesh, effects on health were the major disadvantage of employment cited by workers in Dhaka, of whom almost 30 per cent were reported to be in poor health (Kabeer and Mahmud, 2004, table 14). Discussing the Vietnamese case, Kabeer and Tran (2004) comment that 'given the hours of work, and the conditions under which they work, it is not humanly possible for any worker to work for more than a limited number of years in the industry'.

While the garment industry is noted for a high turnover of labour, this occurs less in the textile industry, as illustrated by the length of time workers have been in employment in both Vietnam and South Africa. However, in Vietnam, the majority of textile workers who lost their jobs claimed to have suffered health problems – partly a reflection of poor working conditions and long hours of work. A lack of investment in new equipment meant that factories were often noisy, hot and polluted, and while conditions are improving, noise remains a problem (Nguyen *et al.*, 2003). In South Africa, a number of raids by the Department of Labour on textile firms in 2002 found contraventions of health and safety regulations, and while working conditions were not a prime concern among workers surveyed, over 40 per cent thought that their working conditions were worse than in other companies (Bezuidenhout *et al.*, 2003: 20).

The second aspect of sustainability arises at the level of long-term trends facing the whole industry rather than individual workers. Specific conditions have given rise to the existing employment opportunities, and these are subject to change. For example, horticultural exports from Kenya have been highly dependent on duty-free access to the EU. The imposition of a tariff would be a major blow to the industry (Humphrey *et al.*, 2004). In the case of the garment industry in both Bangladesh and Vietnam, the ending of the Multi-Fibre Arrangement (MFA) in 2005 is likely to mean that they face increased competition from China in export markets. This could mean job losses and increased poverty levels among former garment workers.[25] More generally, increased competitive pressures within each value chain give rise to efforts to increase productivity and reduce costs, which can have negative impacts on employment and wages.

Conclusion

The approach presented in this chapter provides no universal conclusion regarding the impact of globalization on poverty. Indeed, this is a strength of the approach, since it recognizes that the outcomes of globalization processes are highly context-dependent. They depend both on the institutional framework and government policies that mediate global processes.

The research shows that the growth of labour-intensive exports of manufactures and agricultural products does create employment opportunities, particularly for low-income women – especially migrants from rural areas. The case studies of Kenyan horticulture and Bangladeshi and Vietnamese garment exports illustrate this. However, there is often also a downside to integration into global value chains as far as the workers are concerned. Although favourable in terms of income opportunities, the requirements of the global value chains mean that these jobs often demand a high degree of labour flexibility, long hours of work and poor working conditions. This implies that, while the income levels of those employed tend to rise, the workers are vulnerable both in terms of security of employment and income. This is particularly true of non-permanent workers, who tend most often to be women. The long-term sustainability of income from the point of view of individual workers may also be compromised where working conditions give rise to health problems.

Other aspects of global value chains also have a significant effect on the stability and sustainability of employment. Increased competitive pressures lead to a drive to reduce costs, which can be achieved by shedding labour or reducing the social costs of benefits by increasing the use of non-protected workers. The position of a country in the global value chain depends not only on the strategy of global buyers but also on external factors such as the phasing out of the MFA in garments, or EU trade preferences in horticulture. This introduces another source of vulnerability, not just for individual workers but also for employment as a whole in a particular country.

The experience of the textile industries of both South Africa and Vietnam illustrates that globalization can also lead to job losses in some areas. These industries traditionally employed more permanent, unionized workers, who received a certain level of social protection. Globalization not only leads to a loss of jobs in such industries, but also affects working conditions and employment relations when they are opened to global competition. Those workers who lose their jobs as a result of restructuring may fall into dire poverty, as the example of South Africa illustrates. The case of Vietnam, where retrenched workers were not affected so badly, serves as a reminder of the importance of local context and policies in determining the impact on poverty. In policy terms, a major challenge is to ensure that new employment opportunities and increased incomes generated by labour-intensive exports do in fact benefit the poor. The danger here is that the most disadvantaged are not in a position to participate in global value chains, and that the gains will come to be concentrated in the hands of the better-off. It is clear that globalization alone will not ensure the spread of benefits, and complementary action is required by the state, for example through extending education or by providing inputs such as irrigation. A corollary is that the gains are likely to be distributed more widely where the initial structure of assets and entitlements is more equitable. This is consistent with the view that, of the case study countries, Vietnam has been the most successful in combining increased global integration with poverty reduction in recent years. The experience of Vietnam also suggests that the gains in terms of employment can be maximized by encouraging labour-intensive exports while at the same time avoiding the extremes of import liberalization. A strategy that gives more emphasis to building linkages between the export sector and domestic production can create more employment and have greater potential to reduce poverty than total liberalization. Similarly in horticulture, upgrading to higher value added products can extend the benefits in terms of employment opportunities.

The negative dimensions of globalization also need to be addressed if it is to benefit the poor. The vulnerability of the success stories of labour-intensive export growth, such as garments and horticulture, to external changes in trade regimes, buying practices, international standards and so on, implies that these need to be monitored carefully by those concerned about the future prospects for poverty reduction. As pointed out earlier, global competition tends to put downward pressure on prices, which is in turn reflected in firms seeking to reduce labour costs through increased flexibility and increased intensity of work. What can policy do to offset these tendencies? One strategy is to upgrade within the value chain in order to avoid the decline in prices, something that state-owned enterprises in the Vietnamese garment industry were able to do with some success.

Another strategy is to seek 'niche' markets, which are less susceptible to price competition than more standardized products. There are also inherent limits to the trend to increased flexibility imposed by the requirements of buyers in terms of quality standards in some cases, as illustrated by the case of South African apples (Barrientos and Kritzinger, 2004). This suggests possible positive spin-offs for labour from an emphasis on quality. However, there is also a danger that upgrading can lead to better employment conditions for fewer, better-skilled workers, so that the positive impacts on poverty are further reduced. If this is the case, then some form of social protection needs to be provided for those who are displaced.

Finally, the macro studies showed that even in those cases that have been successful in developing labour-intensive exports, the overall impact of globalization on poverty has been relatively small. The majority of the poor are not engaged in global production, and other strategies are required to reach them. This serves as a reminder that integration with the global economy is not a substitute for an anti-poverty strategy.

Notes

I am grateful to Rolph van der Hoeven and Machiko Nissanke for their comments.

1. For recent surveys of the literature on trade and poverty, see Bannister and Thugge (2001); Reimer (2002); Berg and Krueger (2003); Winters *et al.* (2004).
2. This point is made forcefully by UNCTAD (2004), where the impact this has had in narrowing the discussion of trade and poverty is underlined.
3. Some of the most influential studies have been Dollar (1992); Edwards (1992); Sachs and Warner (1995); Edwards (1998); Frankel and Romer (1999).
4. The project entitled *Globalization, Production and Poverty: Macro, Meso and Micro Level Studies* (R7623) was funded by the UK Department for International Development (DFID) and carried out by researchers at the School of Development Studies, University of East Anglia and the Institute of Development Studies, University of Sussex. DFID supports policies, programmes and projects to promote international development and provided funds for the study as part of that objective, but the views and opinions expressed are those of the author alone.
5. See, for example, IDS (2001); Kaplinsky and Morris (2001); McCormick and Schmitz (2002).
6. The relatively low stock of FDI in Bangladesh compared to the other countries reflects the fact that garments are a buyer-driven value chain, and that international buyers often source from locally owned suppliers, so that FDI is less prominent than in many other industries.
7. The number in severe poverty did fall by around 3 million over the same period (Stern, 2002).
8. This may have been because of an unstable and uncertain political climate.
9. As can be seen from Table 7.1, exports of goods and services grew by 3.3 per cent per annum in current US$ over the period 1990–2002. Although Kenya suffered from considerable fluctuations in export prices, the low growth in value during the 1990s reflected low growth in the volume of exports rather than falling prices (see World Bank, 2004, table 4.4).
10. Macro is used here to refer to national-level aggregates in general rather than just to macroeconomic variables or policy.
11. Manufactured exports were defined broadly; that is, according to the International Standard Industrial Classification, which includes processed agricultural products and minerals, rather than the narrower Standard International Trade Classification.

12. See Jenkins (2006b, table 5) on Vietnam; Edwards (2004, table 5) for South Africa.
13. Unfortunately, lack of data on female employment by industrial sector in South Africa meant that it was not possible to confirm this, but the low share of exports from unskilled labour-intensive industries in which women workers are usually found suggests that exports are not particularly intensive in female labour.
14. Highly skilled workers are those in professional, technical, managerial, executive and administrative occupations. Skilled workers include clerical, sales, transport and service occupations; farmers and farm managers; artisans, foremen and supervisors. The semi- and unskilled category includes all other workers. In fact, it might be more appropriate to refer to the middle group as semi-skilled and the latter as unskilled.
15. A household survey undertaken in 2001 found that two-thirds of packhouse workers were female, and 86 per cent were under the age of 29 (Dolan and Sutherland, 2002, table 3.1)
16. An exception is the case of some textile SOEs, which also produce garments and export garments made with their own fabrics.
17. Textile SOEs in Vietnam underwent considerable restructuring in the 1990s, which led to increased competitiveness.
18. The micro level here is identified with individual producers and their households. Sometimes the firm level is also regarded as micro, but in this context it makes more sense to consider firms as part of the meso level since they are a part of the dynamic of the value chain.
19. For details, see Kabeer and Mahmud (2004) on garments in Bangladesh; Bezuidenhout *et al.* (2003) on textiles in South Africa; Nguyen *et al.* (2003) on textiles in Vietnam; and Kabeer and Tran (2004) on garments in Vietnam.
20. All the packhouse workers and 86 per cent of farm workers in the Kenyan survey were migrants (Dolan and Sutherland, 2002). The survey of garment workers in Bangladesh found that 98 per cent of those in EPZs and 82 per cent of those in Dhaka were rural migrants (Kabeer and Mahmud, 2004, table 2). Migrant workers accounted for 78 per cent of those working in SOEs and 90 per cent of those in private firms in Vietnam (Kabeer and Tran, 2004, table 5a).
21. The survey of South African textile workers found that only 20 per cent were migrants (Bezuidenhout *et al.*, 2003). Only 30 per cent of Vietnamese textile workers were migrants (Nguyen *et al.*, 2003).
22. In the South African horticulture study, only retrenched farm workers were included for the purpose of comparison.
23. The small number of non-textile households surveyed made it impossible to control for differences in household characteristics that might have affected the comparison.
24. In the Statistics South Africa Labour Force Survey of February 2002, 30 per cent of the labour force was unemployed on the narrow definition, while on the broad definition, which includes discouraged workers, the proportion rose to 41 per cent.
25. For one view of the possible impact on workers in Bangladesh, see Christian Aid (2004).

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Part III

Other Channels in the Globalization–Poverty Relationship: Technology, Vulnerability, Flow of Information, Institutions

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8

The Role of Information in Technology Adoption under Poverty

Jinhua Zhao

Introduction

One of the major approaches to reducing the world's poverty is to promote the adoption and diffusion of new technologies in less developed regions. The Green Revolution, by introducing new seeds and intensive agriculture, helped millions of people out of poverty. Efficient irrigation systems such as sprinkler and drip irrigation not only improve productivity but can also help to preserve scarce water resources. Biotechnologies and genetically modified foods have the potential to increase food production significantly in developing countries. Globalization has the potential to make new technologies available to developing countries. However, it is the successful adoption and diffusion of these technologies that will eventually determine whether developing countries can truly benefit from the globalization process.

Technology adoption and diffusion face two main obstacles in developing regions; the lack of capital, credit and risk-sharing; and the lack of information. A new technology may require sizeable sunk investment, and adopting it could be a risky business. Facing limited financial resources and risk-sharing, farmers could be reluctant to adopt 'profitable' technologies if there is a chance that the technologies will fail, since the sunk adoption costs cannot be recouped. Compounding the problem is the limited access to information about new technologies, especially for those developed elsewhere and introduced through the globalization process. Impoverished regions often do not have well-functioning extension services provided by universities or governments. As a result, farmers may at first be extremely uncertain about the profitability of the new technologies. Without rich external information sources, to obtain such information, farmers in developing countries rely heavily on their neighbours who have already adopted the technologies. The diffusion of new technologies in this case is rather typical; one or a few 'leaders' adopt a new technology and, as the advantage of the new technology is observed, other local villagers start to follow suit. The resulting diffusion path is typically logistic, and full adoption occurs only gradually. In a sense, early adopters provide an information service, a positive externality, to their neighbours. They are the ones who face the initial adoption risk when information is extremely limited. If they fail, they will bear the sunk cost. If they succeed, others will benefit from their example. In many cases, a new technology is not adopted or diffused, either because there are no or too few early adopters or because these adopters experience a run of bad luck and fail to demonstrate the advantages of the new technology.

In this chapter, we study the role of information and communication in the adoption and diffusion of a new technology in a community of farmers under poverty. The community has a fixed number of farmers, currently all using a traditional technology. A new technology is introduced, the profitability of which is uncertain. Farmers have different adoption costs, possibly related to their different degrees of risk aversion, and a farmer's adoption cost is his private information. All farmers in the village share the same initial beliefs about the profitability of the new technology. When a farmer adopts the technology, others imperfectly observe the performance of the new technology, and thus obtain more (but probably still imperfect) information about its profitability. Depending on how closely farmers communicate among themselves and the nature of the new technology, adopters may release different degrees of information about the performance of the new technology.

We study the adoption game in the village, where each farmer decides when to adopt the new technology. Since farmers can learn about the new technology from early adopters, each farmer has the incentive to wait for others to adopt first. That is, each has the incentive strategically to delay his/her adoption. Of course, early adoption has the advantage of reaping the benefits of a successful new technology at an early time. In the (unique) perfect Bayesian equilibrium, farmers expect that those with lower adoption costs will adopt first. However, since the adoption costs are private information, the adoption process may stop temporarily when farmers gradually increase their knowledge about who should be the next to adopt.

We use this model to study three approaches to helping promote the adoption and diffusion of new technologies: the extension service; communication among villagers; and institutions that compensate early adopters for their information service. The extension service, by providing initial information about the new technology, clearly helps to promote early adoption and faster diffusion. Further, it also helps to reduce the incentives of farmers strategically to delay their adoption decisions. In our model, there are two kinds of communication among villagers – communication about each other's adoption costs, and communication about the profitability of the new technology. We show that both types of communication may or may not enhance adoption and diffusion, depending on when they occur. For example, while communication about the new technology helps to disseminate information about it, it also causes farmers to delay adoption in anticipation of such information in the future. If few farmers have adopted, the delay effect dominates and better communication can slow down the adoption. If, on the other hand, a large number of farmers have already adopted the technology, the effect of information about the technology dominates, and better communication promotes adoption.

This chapter is related to the literature on the role of information exchange among agents in technology adoption and diffusion. The empirical literature started with agricultural technologies (Case, 1992; Besley and Case, 1993, 1994; Foster and Rosenzweig, 1995) and has expanded to medical drugs (Berndt *et al.*, 1999) and computers (Goolsbee and Klenow, 1999). Relying mainly on micro-level data, these studies consistently find significant neighbour influences. That is, rational profit-maximizing agents do respond to information released by other adopters. Further, using a structural estimation model, Besley and Case (1994) find that agents also anticipate and actively respond to future information from other adopters – they tend to delay adoption strategically to wait for further information. The authors found that a model with forward-looking behaviour performs better than one with the agents passively responding to existing information.

The chapter is also related to the information cascade literature (Banerjee, 1992; Bikhchandani *et al.*, 1992; Chamley and Gale, 1994; Choi, 1997; Zhang, 1997; Caplin and Leahy, 1998). However, different from that literature, in our model the agent does not have private signals about the technology. Thus the adoption (or non-adoption) decision in itself does not reveal any information about the technology.

The chapter is organized as follows. We next describe the adoption game and possible diffusion patterns, then show the approaches that could promote adoption and diffusion of new technologies in developing countries. We then discuss the impact of new technologies on poverty, with the last section concluding the study.

The adoption model

We sketch the adoption game in this section; see Zhao (2005) for details. Consider a village of *N* farmers, where each farmer is a single decision-maker. The farmers are similar in several respects. They are poor with limited access to credit markets, and they are currently all using the same farming method, called traditional technology. As the economy opens up, a new technology is introduced that has the potential directly to increase farm income. However, the new technology also introduces uncertainty and the possibility of a loss. Specifically, adopting the new technology requires a sunk cost that could be a significant financial liability for an impoverished farmer. The profitability of the new technology is uncertain, with a strictly positive probability that the added income from the new technology cannot fully compensate the adoption cost.

The sunk adoption cost could be different for different farmers, depending on their degrees of risk aversion, financial resources, abilities and familiarity with operating new technologies, and the technology's fit to their needs. For example, farmers with off-farm income may have a higher ability to bear the uncertainty, and those with higher educational levels or experience with similar technologies will incur lower adoption costs. We call the idiosyncratic part of the adoption cost 'farmer type', which is private information. Others only have imperfect information about this type.

Formally, without loss of generality, we normalize the profit of the traditional technology to zero. Farmers have the same imperfect initial information about the new technology's constant per period profit e, knowing that it is distributed non-atomically according to $F_0(\cdot)$ on $[e_l, e_h]$ with $e_l > 0$. The sunk adoption cost of farmer n is $c_n = \theta_n c$, where θ_n is the farmer type and $c > 0$. Other farmers in the village do not know θ_n for sure, knowing only that it is non-atomically distributed according to $G_0(\cdot)$ on $\Theta \equiv [\theta, 1]$ with $\theta > 0$. Such beliefs are independently and identically distributed across the farmers.

Since $e_l > 0$ and the adoption cost is sunk, the adoption is irreversible. That is, new technology users will never abandon it in favour of the traditional technology, even if the new technology performs less well than expected and results in a net adoption loss. The likelihood of a loss from the new technology clearly depends on the farmer type – it is more likely for higher type/cost farmers. To rule out trivial cases, we assume values of parameters e_l, e_h and θ such that every farmer type faces strictly positive probabilities of adoption losses as well as of net gains. In other words, given prior information about e, every farmer potentially could gain from adopting the new technology, even for those whose types are high (close to 1), and every farmer could also lose from adoption, even for the low cost types (close to θ).

Since adoption is irreversible and incurs sunk costs, real option theory implies that farmers have the incentive to obtain more information before adoption. We assume that the only information source to supplement the prior information about e is farmers who have already adopted the new technology. Suppose farmer n adopts in period t. At the end of this period, others who have not adopted, called remaining farmers, will observe the performance of the new technology; for example, the crop yield or the realized profit. The performance depends on both the technology's efficiency e and a range of random factors such as weather, farmer n's effort, and so on. We let p_n denote the signal, which is a function of e and a random variable ε_n. Observing p_n, the remaining farmers update their belief about e according to Bayes' rule. The updated belief becomes the starting belief about e in period $t + 1$. Clearly, the updated belief about e is more accurate when more farmers adopt, and thus more signals about e are released. Under certain regularity conditions, Bayes' rule also means that when a higher p_n is observed, the remaining farmers believe that e is higher. For simplicity, we also assume that p_n is constant over time; that is, each adopter releases information about e only once. Thus, after a farmer adopts, it releases one signal about e and is out of the adoption game.

The adoption game is then a dynamic Bayesian game, where a history consists of the adoption decisions of the farmers as well as the realized profit signals of adopters, and the players at each history consist of the remaining farmers at that point. Their actions are simply to adopt or to wait until future periods, and a farmer's strategy is a function describing his/her action as a function of the history and his/her type. The (common) starting belief about player types is given by $G_0(\cdot)$, which is subsequently updated after observing the actions of the players, given the equilibrium strategies. At each point in time, information about e is described entirely by the prior $F_0(\cdot)$ and the collection of signals that have been observed so far. Let I_t be a realized history in period t, which includes the collection of the observed signals up to time t. If farmer n decides to adopt in this period, his/her expected payoff is

$$\pi(I_t, \theta_n) = E_{e|I_t}\left(\frac{e}{r}\right) - \theta_n c \tag{8.1}$$

where r is the discount rate, and the expectation of e is taken conditional on the signals in I_t.

If farmer n decides to wait, his/her expected payoff depends not only on his/her belief about e but also on his/her belief about the number of additional signals s/he expects to observe in future periods. The latter belief in turn depends on his/her belief about the number of adopters in future periods, or the types of the remaining farmers. If s/he believes that the remaining farmers are low-cost types, s/he would expect to receive more signals in the future than if his/her belief was that the remaining farmers are high-cost types. Let $\mathbf{g}_{-n}(t)$ be the density of n's belief about the types of other remaining farmers, and $\mathbf{s}_{-n}$ be their strategies in future periods. Then his/her payoff of waiting in period t is

$$v(I_t, \mathbf{g}_{-n}(t), \mathrm{s}_{-n}, \theta_n) = \frac{1}{1+r} E_{I_{t+1}|I_t, \mathbf{g}_{-n}(t), \mathbf{s}_{-n}(I_t)} \max\left\{\pi(I_{t+1}, \theta_n), v(I_{t+1}, \mathbf{g}_{-n}(t+1), \mathbf{s}_{-n}, \theta_n)\right\} \tag{8.2}$$

That is, if farmer n waits in period t, s/he will again decide whether or not to adopt in period $t + 1$, when his/her belief about e will be updated, based on the new signals released by the new adopters in period t, and his/her belief about the types will be updated based on the actions of the remaining farmers in period t.

Zhao (2005) shows that this game has a unique, symmetrical perfect Bayesian equilibrium (PBE). Along an equilibrium path, low-cost farmers adopt first: if at any time a farmer of type θ_1 adopts, then all farmers of type $\theta < \theta_1$ either have already adopted or will also adopt in this period. The intuition is that waiting is beneficial only when new information about e helps to avoid a bad investment. Otherwise, if all possible future information suggests that the new technology should be adopted, the farmer should adopt now in order to reap the benefits of the technology as early as possible. Since higher cost types face a higher likelihood of bad investment, future information is more useful to them. They are more willing to wait and less willing to adopt now.

The equilibrium strategy at time t is thus represented by a critical type, η_t^*, so that farmers with types $\theta_n \leq \eta_t^*$ will adopt and those with $\theta_n > \eta_t^*$ will wait. Of course, η_t^* is a function of history I_t, which contains information about e. Since all farmers whose types are below η_t^* have adopted at the end of period t, this equilibrium strategy becomes the starting belief in the next period: in period $t + 1$, the remaining farmers all have types distributed according to $G_0(\cdot)$ conditional on $\theta > \eta_t^*$. In other words, the belief at $t + 1$ is represented by a number, denoted by $\widehat{\eta}_{t+1}$, which equals the equilibrium strategy in the previous period η_t^*.

At time t, given history I_t and belief about types of remaining farmers $\hat{\eta}_t$, the equilibrium strategy is $\eta_t^*(I_t,\hat{\eta}_t)$. Clearly, as the realized profit signals in I_t increase, η_t^* also rises. When remaining farmers observe higher profit signals, they are more willing to adopt (or more types will adopt). Further, when belief $\widehat{\eta}_t$ rises, η_t^* also increases: when a remaining farmer believes that the other remaining farmers are of higher cost types (since $\hat{\eta}_t$ is higher), s/he expects that the other farmers will be less likely to adopt in this period. Consequently, fewer new profit signals about e will be released in the future, resulting in a lower incentive for this farmer to wait, or a higher incentive for him/her to adopt now.

The realization of a specific equilibrium path depends on the realizations of the profit signals of adopters. The distribution of the possible paths covers a range of diffusion patterns observed in the real world. For example, the adoption process may take some time to start even after the new technology is made available, and the diffusion process may stop temporarily for several periods before resuming. The late start and temporary stops do not usually arise in other game theoretic adoption models, and is a unique feature of our approach.

To see how this can happen, consider the first period when the only available information about e is $F_0(\cdot)$. Given this information, and the starting belief about the farmer types, an equilibrium strategy η_1^* exists, implying that farmers with types $\theta \leq \eta_1^*$ will adopt. However, given the non-automatic belief $F_0(\cdot)$ and finite number of farmers, there is a strictly positive probability that all types of farmers are above η_1^*. If this is indeed the case, nobody adopts and no new signal is generated about *e*. Then the period two game is different from the period one game in only one aspect: the belief about the types of farmers is updated to be $G_0(\cdot)$ conditional on $\theta > \eta_1^*$; that is, $\hat{\eta}_2 = \eta_1^*$. Since the farmers are believed to be of higher costs, the incentive to wait decreases or the incentive to adopt rises. Thus the equilibrium strategy in period two, η_2^*, is higher than in η_1^*. If every farmer type is still above η_2^*, the game enters period three with the belief that $\theta > \eta_2^*$, resulting in an even higher η_3^*. This process continues until low-cost farmers start to adopt. By the same argument, the diffusion process may stop temporarily when there is no farmer type below the equilibrium strategy in a period, until the belief $\hat{\eta}_t$ works itself up so that new adopters materialize.

In our model, the diffusion process stops either when all farmers have adopted or when the last adopters release sufficiently strong negative profit signals so that, with hindsight, they think they should not have adopted. Suppose several farmers adopt in period *t*, and at the end of *t* extremely low profit signals are released by these adopters. In fact, these signals are so low that, based on the new information about *e* in I_{t+1}, some of these adopters should not have adopted: $\eta_{t+1}^*(I_{t+1}, \hat{\eta}_{t+1}) < \eta_t^*(I_t, \hat{\eta}_t)$. Since η^* is increasing in profit signals in *I* and $\hat{\eta}$, this inequality is possible when the new profit signals in I_{t+1} are sufficiently low. Then in period $t + 1$, no farmer will adopt since everyone's type is above $\hat{\eta}_{t+1} = \eta_t^*$, which is higher than the equilibrium strategy η_{t+1}^*. Further, the belief about farmer types will not be updated in period $t + 2$, since it is expected that nobody will adopt in period $t + 1$. In other words, the fact that nobody adopted in $t + 1$ does not bring any new information about the farmer types. Therefore, there are two possibilities in which zero adoption can occur in a period. The farmers may have expected some low-cost types, but it turns out that everyone is of relatively high-cost type, or the new adopters experience some bad luck and release strongly negative signals. The first scenario leads only to a temporary stop of the diffusion process as belief about types can work itself up, but the second scenario causes a complete stop to the process.

The equilibrium diffusion path is also likely to demonstrate a logistic pattern, which has been documented for a range of technologies. The intuition is quite simple. In early periods, there are few profit signals because of the small number of adopters. The farmers thus have a strong incentive to wait for more information, resulting in a low adoption rate. As more farmers adopt and more signals are observed, the incentive to wait goes down and the adoption rate goes up. Eventually, the adoption rate will fall again because only high-cost farmers are left.

Promoting the diffusion of new technologies

The adoption model provides a useful tool to study informational approaches to promoting the adoption and diffusion of new technologies, and to study the effects of globalization and poverty on the diffusion process. We discuss the implications of our model from three aspects, detailed below.

Initial information provision

The adoption model shows that more initial information about a new technology will promote its adoption in two ways. First, since farmers under poverty are typically risk averse, more information reduces the risk premium part of the adoption cost. Second, over and above the risk premium effect, even when farmers are risk neutral, more starting information reduces the farmers' incentive to delay adoption in anticipation of more future information. That is, it promotes adoption by reducing farmers' strategic delay incentives.

Initial information about new technologies, especially agricultural technologies, could come from a range of sources, including extension services of universities and government agencies, marketing specialists and private technology consultants (Sunding and Zilberman, 2001). There is well-documented evidence of the importance of extension services in improving agricultural productivity (Rosegrant and Evenson, 1992; Jin *et al.* 2005). Some developing countries, such as China, have utilized demonstration projects widely in providing information about new technologies.

Globalization plays a vital role in disseminating information about new technologies. As summarized in Keller (2004), over 90 per cent of the technological explanations for an average country's productivity growth is from foreign sources. Through international trade, FDI, and interaction among persons with scientific and technological expertise, globalization helps to bring new technologies from their inventors to eventual users. Our model indicates that to utilize fully the potential brought about by globalization, developing country governments should strive to enhance extension services and establish marketing channels in order to increase the information flow to rural populations. An information service is even more important for poor farmers, because they are the ones who are more risk averse and who are more willing to delay adoption for more information. In other words, information services will be more efficient in promoting adoption when potential adopters have limited financial resources. A viable poverty alleviation tool, therefore, is information provision, in addition to traditional tools such as income transfer.

Communication about new technology and about each other

Since early adopters provide an information service to other potential adopters, it has been argued that increased communication about new technologies helps to promote adoption and diffusion. However, our game theoretic model shows that, if this kind of communication becomes more effective, farmers may expect that future signals from early adopters will carry more information about the new technology. They may have more incentive to delay adoption and wait for such signals, so that increased communication about technologies could delay rather than expedite the adoption process. Thus, communication about new technologies leads to two opposing forces in the adoption process. If there are already sufficient adopters, more efficient communication increases the information content of their signals. Increased information helps remaining farmers make more informed decisions and will speed up adoption. Otherwise, if there are no, or few, adopters, the prospect of more communication will only serve to delay the adoption process. It is then important to time communications about technologies to balance the two factors. For example, a mechanism may be set up in which information exchange about the new technology will be conducted only after a sufficiently high proportion of the farmers have adopted the technology.

Our model indicates that the adoption process is also affected by imperfect information about other farmer types and their likelihood of adopting the technology. Consequently, communication about the likelihood of adoption also affects the adoption process. Again, timing of this kind of communication is important. Consider a technology that is gradually being diffused. In early periods, only extremely low-cost farmers will adopt without waiting for more profit signals. To the extent that increased communication reduces the variance of the belief about types, the probability of expecting truly low types will go down as the variance decreases. That is, more communication reduces farmers' expectations of the number of early adopters. Since waiting leads to fewer expected signals, the incentive to wait goes down and the adoption speeds up. Thus, exchanging information about each other's likelihood of adoption at the beginning of the diffusion process is likely to speed up adoption.

However, increased communication about types may slow down adoption in the middle of the diffusion process for gradually diffused technologies. Suppose, without loss of generality, the belief is that the types are normally distributed. As communication reduces the variance of beliefs, the believed probability of farmers in the middle of the distribution goes up. That is, the expected number of new signals will also go up, increasing the incentive to wait and reducing the incentive to adopt now. Therefore, it is important to distinguish between the two kinds of communication, about the technology and about each other. They may have opposite impacts on adoption, and each may have different impacts depending on the phase of the diffusion process. Simply increasing information exchange may not always speed up adoption.

Subsidizing early adopters

Our model shows that early adopters provide a positive information externality to other potential adopters. Lack of mechanisms for early adopters to internalize the externality leads to lower than efficient adoption rates. Thus, one approach to speeding up adoption is to compensate early adopters for their information service. The efficient compensation level equals the expected gain of others from the new profit signals, which includes both the direct information value and the value from reduced strategic delay caused by increased information. There are several ways in which early adopters can be compensated.

A simple mechanism is for the government to subsidize early adopters directly. For example, the government may offer cost-sharing, rebates or price discounts for new technologies that have not been widely adopted. The subsidy rate can be reduced gradually as the adoption rate increases, and eventually phased out. The subsidy enhances incentives to farmers to adopt now, and the fact that the subsidy rate gradually decreases reduces the incentives to wait. Such a programme essentially maintains efficient information transmission from early adopters to others while overcoming the strategic delay that would be a result of the anticipation of the information exchange.

Another mechanism, especially useful for risk averse farmers, is for the government to offer and/or to subsidize technology insurance for early adopters. That is, if e turns out to be below the level expected and the early adopters suffer losses, the government will step in and compensate (partially or completely) for the losses. Depending on the significance of the information externality, the insurance premium could be subsidized. When there is no privately provided insurance for new technologies, which is typically the case in impoverished areas, such a government programme is advantageous over a direct subsidy because it offers a risk-sharing service for the farmers concerned. The insurance should be offered to all adopters. This kind of subsidized insurance could also be offered by a village itself, where farmers pool resources to insure early adopters. In this mechanism, potential adopters ‘pay’ for the information service of early adopters by insuring their adoption. In essence, a community or village could be organized to pay, one way or another, for ‘demonstration projects’ offered by early adopters. It is especially useful when governments lack fiscal resources to offer direct subsidies or subsidized insurance.

Impacts of technology adoption on poverty

Our model shows the intuitive result that more efficient technologies (those with higher e) are adopted by more farmers and diffused more quickly. To the extent that the new technology raises farmers’ income, it also alleviates poverty, particularly in the long run and on average.

However, new technologies may not alleviate poverty for every adopter. Consider the intuitive scenario where the signals about the new technology are the realized profits of the adopters. We have shown that, unless the technology is adopted by every farmer, the diffusion process stops permanently when the last adopters regret their adoption decisions: their net payoffs from adoption are negative. In other words, unless the technology is for everybody, if there is such a technology at all, some farmers (for example, the last adopters) will inevitably be made worse off by the new technology. If very impoverished farmers are more reluctant to adopt, the order of adoption starts with wealthier farmers, followed by those with less wealth. Then the last adopters who are made worse off by the new technology could well be those who are most in need of help. The new technology may in fact only aggravate their poverty.

Our model assumes that there is no network effect. If a farmer chooses not to adopt, his payoff is not affected directly by the fact that other farmers have adopted the new technology. However, new technologies typically involve network effects, either positive or negative. For example, if the new technology increases the yield, and sufficiently large number of farmers adopt, the price of the agricultural output is likely to be pushed down as supplies increase, thereby reducing the profit of the non-adopters. Again, if the later adopters and non-adopters are extremely poor, this kind of negative network effect will aggravate the poverty problem. Of course, some technologies have positive network effects. For example, as the number of adopters increases and the market share of the new technology rises, the price of the technology may go down. If there is learning by doing and learning from others, later adopters may learn from the experiences of using the new technology by early adopters, thus increasing the profit of later adopters. The positive network effects therefore help to alleviate poverty for every farmer.

Whether a new technology alleviates poverty depends to a large extent on the nature of the new technology. Technologies that are suitable for even the lowest-income farmers help to reduce poverty. Those with positive network effects also alleviate poverty, even if they are adopted only by relatively wealthy farmers. However, technologies with negative network effects that are suitable only for wealthy farmers could hurt the poorer farmers.

The above discussion indicates that poverty alleviation requires much more than simply introducing new technologies. Other poverty alleviation programmes are needed to compensate for the possible negative effects of new technologies, and, where new technologies do help to reduce poverty, to help reduce incentives against adoption and diffusion (such as compensating for the information externalities of early adopters).

Conclusion

An important channel through which globalization affects poverty is the introduction of new technologies to developing countries. Even if a new technology can improve the income of rural farmers, it may not be adopted by all, and its diffusion may be slow because of sunk adoption costs and uncertainties in net payoffs. This chapter studied one important factor in the adoption process: information exchange among existing and potential adopters. In particular, early adopters release information about the technology that other potential adopters can utilize to make a more informed decision.

We show that the information service by early adopters may either speed up or slow down the diffusion process. When there are no, or few, early adopters, anticipation of such information increases incentive to delay adoption to wait for more information, thus reducing the adoption rate. The information service helps to speed up diffusion only when a sufficiently large number of farmers have already adopted the technology. Information exchange can also be about each farmer's likelihood of adoption in both current and future periods. We have shown that this kind of exchange helps to improve adoption early in the diffusion process, but may reduce adoption later.

Our model has important implications for ways to help speed up adoption and diffusion, including providing more initial information about new technologies, timing communication about the technology and about each farmer, and compensating early adopters for their information service. Our results also indicate that, unless a new technology is for everybody, it will inevitably hurt some farmers, possibly the last adopters, before the diffusion stops. Even if a new technology improves farmers' income on average, it may aggravate the poverty problem for a subset of farmers.

Therefore, from the perspective of new technologies in the globalization–poverty nexus, the effect of globalization on poverty and inequality depends to a large extent on the nature of the new technologies as well as the adoption and diffusion policies of a developing country. Without policies that promote appropriate information dissemination and exchange, new technologies resulting from globalization may even aggravate poverty and inequality. Information dissemination is even more important for technologies that are not completely diffused; the last adopters could be made worse off, given the incomplete information.

Note

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9

Trade Openness and Vulnerability in Central and Eastern Europe

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Introduction

Trade liberalization is the emerging issue of development studies. It is not only the key component of the current wave of globalization[1] but also the most direct means by which globalization influences poverty dynamics in the developing countries. The debate on the trade liberalization and poverty nexus is very lively (Cline, 2004): on the one hand, common wisdom suggests that openness to trade and factor flows offer remarkable opportunities for the economic and political progress of countries (hence, the main international organizations advocate structural reforms centred on trade openness for the developing countries). On the other hand, empirical studies on the impact of trade liberalization on poverty do not reach a common stand on the issue (Hertel and Winters, 2005; IPALMO, 2005) and trade openness for the most part in developing countries translates into a growing feeling of insecurity and uncertainty towards future poverty dynamics. This fosters intense political debate on the options and strategies available to help developing countries capture fully the benefits of trade integration, and to reduce the likely negative effects.[2] This debate is currently taking place within the WTO, in the throes of carrying out the Doha Development Agenda, and within the EU under the framework of the new Cotonou Agreement, which established a set of Regional Economic Partnership Agreements with developing countries in Africa, the Caribbean and the Pacific – and of the enlargement towards CEECs (Central and Eastern European Countries).

This chapter aims to analyse empirically whether the feeling of insecurity and uncertainty linked to trade liberalization can be justified in economic terms, and whether policy-makers should be concerned. The aim is not to build a case against liberalization, but instead, to help policy-makers design and implement a new set of preventive policies and work towards a more forward-looking attitude.

The objective of this chapter is twofold: to provide a substantive contribution to the debate on the role of trade liberalization on the macroeconomic performance of emerging countries, with a focus on the experience of Central and Eastern Europe; and to raise awareness, at the same time, of a likely side effect of trade liberalization – namely, macroeconomic vulnerability. This issue deserves careful attention. There is nowadays an increasing consciousness about the possibility that trade liberalization, which usually precedes capital account liberalization in the globalization process, implies long-term economic negative effects, particularly in the case of the more fragile partner countries. In this respect, vulnerability analysis represents a suitable means of looking at the way in which a policy change might have long-term effects on the actual livelihood of people, even in a context of good overall macro performances, by raising their degree of 'uncertainty' towards the future. At the same time, it gives us a better understanding of the fundamental role played by 'resilience' in different economic contexts; namely, the ability of a system, community or society potentially exposed to hazards to cope successfully in the face of significant adversity or risk, as well as the availability of efficient copying mechanisms.

A crucial question of this analysis is: how to strike a balance between the advantages of an open economy and the disadvantages of greater exposure to external shocks. Considering the redistributive nature of trade, it is certainly not possible to denounce any shock that might cause even a single individual to suffer a reduction in income. Moreover, in countries with low levels of trade, it is reasonable to assume that greater trade liberalization would reduce risk exposure rather than increase it, because larger world markets (with many players) tend to be more stable than smaller domestic ones (Winters, 2000). However, should foreign shocks be largely unpredicted and greater than domestic ones, the opposite effect would ensue. Practically speaking, there is a substantial grey area where countries enjoy a fair degree of stability but the probability of being harmed by external shocks could be high (Winters, 2000). The object of this trade vulnerability analysis is to gain a better understanding of this grey area.

In this respect, the case of the CEECs is particularly instructive. Since the early 1990s, the CEECs have undergone a dramatic and unprecedented process of political change, economic liberalization and institutional reform (Svejnar, 2002). At the beginning of the transition process, this created an economic slowdown of a magnitude never previously witnessed in peacetime (Mundell, 1995). The CEECs recovered only after a number of years, following a U-shaped transition curve (see Figure 9.A1). This economic slowdown has been explained, among others, by the occurrence of several negative trade shocks, such as the collapse of the Council for Mutual Economic Assistance (Comecon),[3] the discontinuation of the traditional trade linkages with the former USSR, and the immediate shift to world prices in foreign trade (Blanchard, 1997). Did these shocks cause permanent effects? Did they add to the vulnerability of the CEECs with regard to their socioeconomic conditions?

This chapter attempts to answer these questions. The study is organized as follows: first, we briefly review literature drawn from apparently distant areas of research – trade openness as well as vulnerability – and then carry out some steps towards a macro approach of vulnerability to trade openness. Following this, we present an empirical exercise on the vulnerability to trade openness in Europe. Some stylized facts on the macroeconomic performance of European countries, in terms of both growth and volatility, are reviewed, followed by an empirical application for Europe for the period 1990–2000. A measurement of vulnerability to trade openness for European countries is proposed and subsequently tested on the poorest population quintiles. The final section draws some conclusions and policy implications.

Review of the literature

On the effects of trade openness

Mainstream international economics based on the Heckscher–Ohlin theory asserts that international trade produces benefits for all participants. Countries and individuals specialize according to their comparative advantage, and relative prices of goods and factors tend to converge. Over time, numerous studies presenting substantial empirical evidence have explored additional issues such as the effects of trade openness on partner countries. These include the impact of trade liberalization on poverty (Timmer, 1997; Delgado *et al.*, 1998; Mellor and Gavian, 1999; Cline, 2004; Dollar and Kraay, 2004); inequality between and within countries (Ben-David, 1993; Frankel, 2000; Cornia and Court, 2001; Milanovic, 2003; Milanovic and Squire, 2005); the relationship between trade integration and economic growth (Edwards, 1993; Frankel and Romer, 1999; Dollar and Kraay, 2000), and the role of policies and institutions (Krueger, 1990; Ades and Di Tella, 1997, 1999; Lall and Pietrobelli, 2002).[4]

Our intention here is to shed light on an additional issue regarding the effect of trade openness, with a special focus on the relationship between trade liberalization, its associated risks, macro volatility and vulnerability. On this subject, the most complete and thorough analysis to date remains the work of Glick and Rose (1999). They indicate, with empirical evidence, how trade linkages should be first among the factors in explaining regional contagion during currency crises. Later, Forbes (2001) examines how trade can transmit crises internationally via three distinct, and possibly counteracting, channels: the competitiveness effect (when changes in relative prices affect a country's ability to compete abroad); the income effect (when a crisis affects incomes and the demand for imports); and the cheap import effect (when a crisis reduces import prices and acts as a positive supply shock). The author suggests that trade effects are not only statistically significant, but also quantitatively relevant (Forbes, 2001). However, Corsetti *et al.* (2000), and Wincoop and Yi (2000) have remarked that these channels could counteract and balance each other out, and the resulting aggregate impact of trade linkages could be small. Another relevant strand of literature on the same issue, but with different techniques and objectives, is related to the 'small states' (Atkins and Mazzi, 1999; Easterly and Kraay, 1999).

Vulnerability: theoretical and methodological references

Vulnerability as a method of analysis does not override traditional approaches. Instead, it offers a new lens for examining the dynamics of development. It can be defined as the 'continuous forward-looking state of expected outcomes' (Alwang *et al.*, 2001) which themselves are determined by the characteristics of the unit of analysis, the correlation, frequency, timing and severity of shocks, as well as by the risk management instruments applied (Heitzmann *et al.*, 2001). Risks, in fact, are only one side of the coin. While risks are exogenous, vulnerability is endogenous as it is the result of strategies employed by individuals and communities facing the risks (Dercon, 2001). It is important to underline that, while wellbeing and poverty are *ex-post* outcomes, vulnerability is an *ex-ante* condition which could potentially lead to a negative outcome. Consequently, what really matters in assessing vulnerability is not the current values of the phenomena, but the ability to understand its future dynamics and intervene as needed. Vulnerability, in this light, could be considered as an evolutionary process generated by cumulative factors (Davies, 1996).[5]

Vulnerability is indeed a complex subject. It is not determined by one, easily measurable factor. There are many sources of risk that interact with each other, as well as many different types of risk management strategy.[6] Moreover, risk management instruments need to be aimed not only at preventing risks, but more importantly also at encouraging individuals to take risks in a more conscious, beneficial and profitable manner with a long-term outlook (Holzmann, 2001a). As a result, there is no unanimous and consistent approach to vulnerability. However, there are a number of possible measurements of the phenomenon, which depend on the context in which vulnerability is in fact analysed.[7] Economic literature, using among others a monetary measure, analyses vulnerability as a possible loss of well-being caused by a combination of risks and management tools. There are currently a number of different approaches to vulnerability analysis from the economic point of view: (i) the exposure to observed risks (Glewwe and Hall, 1998; Amin *et al.*, 1999; Dercon and Krishnan, 2000); (ii) expected poverty (Christiaensen and Boisvert, 2000; Pritchett *et al.*, 2000; Chaudhuri *et al.*, 2002); and (iii) expected utility (Calvo and Dercon, 2003; Ligon and Schechter, 2003).[8] These studies adopt primarily a micro approach and focus on households. As argued by Hoddinott and Quisumbing (2003), all these contributions seek to measure vulnerability by adopting a two-step procedure. First, they estimate the distribution of future consumption expenditure and then construct a statistic from this estimated distribution in order to capture the reduction in household welfare resulting from the risk in household consumption expenditure.

Towards a macro approach to vulnerability

This study adopts a macro lens and a slightly different approach from most of the available literature. The decision to focus on aggregate variables rather than household data results from several considerations. First, this is because of the recognition that the economic process of globalization creates different circumstances in which endogenous, micro and natural shocks are becoming less important than 'man-made' external macro shocks. In particular, since the early 1990s, the incidence of macro shocks at the international level has been quantitatively very relevant. Between 1990 and 1997, more than 80 per cent of the developing countries experienced at least one year of negative per capita output growth as a result of an economic crisis, natural disaster or conflict (World Bank, 2000a). These shocks – the result of a perverse combination of international turmoil and political economy mismanagement – have manifested themselves in various forms (public budget, balance of payments, currency and banking crises and hyperinflation, for example) and affected in various ways[9] primarily the most integrated countries in the world economy (Easterly and Kraay, 1999). In this new scenario, traditional social relationships and local market structures in developing countries are facing entirely new challenges, while the traditional coping mechanisms are under pressure, and a vast proportion of the population has no means to benefit from the competition at international level (Dercon, 2001). Furthermore, 'macro' covariate shocks (that is, shocks that occur at national or regional levels) have been shown to have a more severe impact on the poor even when such shocks do not affect people disproportionately (Lustig, 2000). Along the same lines, recent empirical works (Lundberg and Squire, 2003) argue that trade openness erodes income growth in the bottom quintile of the population because of the poor's limited ability to save and their lack of access to general public or private safety-net systems (World Bank, 2000a).

The second reason that calls for a macro approach is related to policy. Recent events highlight the paucity of *ex-ante* international macroeconomic policies capable of properly recognizing and coping with the systemic nature of macroeconomic crises and their effects. In addition, current policies and *ad hoc* interventions usually fail to take into account the fact that there is a genuine chance that a large percentage of the population will fall below the poverty line in the near future (Glewwe and Hall, 1998). As a result, policies need to be redesigned and redirected to address such issues (Holzmann and Jorgensen, 2000; Holzmann, 2001b). Third, the adoption of a macro approach helps to raise a critique of the current, influential macro literature on trade and poverty, which argues that trade is good for growth and growth is good for the poor (Dollar and Kraay, 2000, 2004). We argue that the ability of a country to benefit from full integration into a more open international economic environment depends strongly on its national characteristics and on the availability of effective coping mechanisms.

This macro approach is also subject to a number of caveats. First, as we focus on aggregate variables in cross-country comparisons, we deal only with covariant macro shocks at the country level (that is, shocks affecting the variables on average, impacting on the population uniformly), without taking into account the differences among households or income distribution effects. Our results may thus differ across the social groups within each country, while the relative income position of households is likely to have an important effect on their ability to gain access to adequate tools and coping mechanisms. This shortcoming is, however, moderated by the evidence that the aggregated effects also harm the poor disproportionately (Lustig, 2000; Lundberg and Squire, 2003). To overcome such a drawback, we also provide a test examining the robustness of our results on the poorest quintile of the population.

Second, we acknowledge the limits of the cross-section analysis, but in our case it remains the best choice within the 'cost–benefit trade-off' of the appropriate sample length. In fact, while with a longer sample we could have increased measurement accuracy, we are aware that vulnerability is likely to change over time, because of diverging characteristics and the performance of shocks and transmission channels (World Bank, 2004). Moreover, cross-section comparisons force us to adopt common thresholds within the sample. However, we can easily remove this assumption without invalidating the results.

Third, as one of the aims of the analysis is to propose a methodology that can be applied across countries and periods, we restrict ourselves to using macroeconomic data available from official international sources.[10] We acknowledge that this might involve the risk of missing a number of relevant country-specific issues, but it lets us enjoy the benefits and insights of a comparative approach.

However, we do acknowledge the paucity of analytical tools available for studying the effects of macro vulnerability on welfare across countries.[11] The avenue we choose to face this limitation is to relate our trade vulnerability analysis to macro volatility studies.[12] Although the issue of volatility has traditionally been considered as a business cycle phenomenon with only secondary effects for emerging economies, the effects of volatility on growth and poverty alleviation are being recognized as a general factor of development and has attracted the interest of many scholars (World Bank, 2004). In fact, in recent years, episodes of extreme volatility have highlighted an entire new set of welfare implications for developing countries. Moreover, recent empirical studies show that the relative volatility of consumption increased during the 1990s with respect to income, especially for the more integrated economies (Kose *et al.*, 2003a; Wolf, 2004).

A suggested model of macroeconomic vulnerability to trade

Starting from traditional micro vulnerability literature, in order to extend the vulnerability analysis to a higher level of aggregation, we choose to rely on a panel of countries rather than on a panel of households, and we base our measurement of welfare on the average growth of annual per capita consumption expenditure, considered to be a good proxy for permanent income. Then we adopt a mixed approach to detect volatility. First, recalling Ligon and Schechter (2003), we define the vulnerability of country *i* as the difference between the expected per capita consumption growth under the hypothesis of no shocks and the expected value of the same variable under the hypothesis of shocks. In formula:

$$V(c_i) = E\left[\bar{\dot{c}}_i^*\right] - E\left[\bar{\dot{c}}_i\right] \tag{9.1}$$

where $E\left[\bar{\dot{c}}_i^*\right]$ is the expected per capita consumption growth under the hypothesis of no shocks and $E\left[\bar{\dot{c}}_i\right]$ is the expected per capita consumption growth under the shocks hypothesis. Hence, $E\left[\bar{\dot{c}}_i^*\right]$ is our benchmark (similarly to the poverty line in Ligon and Schechter, 2003). In case of negative shocks, we obviously get $E\left[\bar{\dot{c}}_i\right] < E\left[\bar{\dot{c}}_i^*\right]$. The larger the difference between the two measures, the higher the vulnerability of the country *i*. Moreover, according to volatility literature (see the earlier section), we also argue that annual per capita consumption growth depends the volatility of its annual rates of change. In formula:

$$\bar{\dot{c}}_i = f\,(Vol\dot{c}_i),\ i = 1,\ldots,n \tag{9.2}$$

where $Vol\dot{c}_i$ is the standard deviation of per capita consumption rate of change. Finally, according to Glewwe and Hall (1998), Amin *et al.* (1999) and the literature on the determinants of volatility, we link the volatility of consumption expenditures to a set of possible sources of shocks related to trade openness, as follows:

$$Vol\dot{c}_i = g(Volx_i),\ i = 1,\ldots,n \tag{9.3}$$

where x_i is the number of trade variables and $Volx_i$ their standard deviation.

Practically speaking, as highlighted by Equations (9.2) and (9.3), an increased volatility of variables related to trade openness will cause increased volatility of per capita consumption growth with negative effects on the consumption performances. According to this model, cross-country differences in the volatility of per capita consumption growth can arise alternatively from differences in the exposure of trade shocks or in the availability of coping mechanisms, producing different welfare conditions (Wolf, 2004). This, in turn, according to Equation (9.1), widens the difference between the expected value of actual per capita consumption growth and its potential value (our benchmark). The wider this difference, the more vulnerable the country analysed. Moreover, under the hypothesis that the poorest people consume most of their income in every period, we also implement the same framework to measure the vulnerability to trade shocks of the lowest quintile of the population.

Stylized facts about Europe

Focusing on the situation in Europe, as already underlined, the CEECs at the beginning of the transition era had not performed as well as many had expected. However, following a U-shaped path, they succeeded in recovering (see Figure 9.A1 on page 225), indicating a process of relative convergence to the macroeconomic performance of Western European countries (see Figure 9.A2).[13] Indeed, from the point of view of per capita consumption, CEECs show a mixed performance over the period 1990–2001. They registered, on average, with the relevant exceptions of the Baltic states, Belarus, Bulgaria and Hungary (see Table 9.A1), an annual per capita consumption growth higher than most West European countries (apart from Ireland). Moreover, if the standard deviation is used as a metric, CEECs show a higher degree of volatility during the same period for almost all the reported macroeconomic variables than West European countries (see Table 9.A2). This finding is particularly relevant in the case of trade variables, per capita GDP growth rates and, above all, in the case of per capita consumption (see Figure 9.A3). In fact, the majority of CEECs show a relatively high volatility of consumption with respect to income (see Figure 9.A4). This result, which is consistent with other empirical analysis on emerging countries (see World Bank, 2000b; Kose *et al.*, 2003b; Wolf, 2004)[14] demonstrates that, compared to West European countries, the transition economies in Central and Eastern Europe show less of an ability to maintain a stable path of consumption in the presence of output volatility (see also Coricelli and Ianchovichina, 2003).

Following Hnatkovska and Loayza (2004), we decompose the observed total volatility of consumption between the predictable component of the phenomenon or *normal* volatility and a proxy of its unpredictable component or *extreme* volatility. Normal volatility is defined as the portion of standard deviation of consumption change that corresponds to deviations falling within a threshold (that is, repeated small cyclical movements around the mean). Extreme volatility is defined as the portion of standard deviation of consumption change above and below the same threshold (that is, sharp positive or negative fluctuations from the mean). Extreme volatility has been subdivided, in turn, into 'boom volatility' and 'crisis volatility'. Here, we concentrate on crisis volatility, the portion of standard deviation of consumption change that corresponds to downward deviations below a fixed threshold. To carry out our decomposition, we adopt a common threshold set to equal the average volatility of the sampled countries. It provides absolute (as opposed to relative, country-specific) measures and thus facilitates cross-country comparisons. If we examine the cases of Austria and Latvia, being less volatile and more volatile countries, respectively, in the sample, we notice that while Austria experienced no extreme (boom or crisis) volatility, Latvia is characterized by relevant episodes of crisis volatility (1991–93 and 1995) and boom volatility (1994 and 1996–2001) (see Figure 9.A5).

Trade openness and volatility: an empirical analysis in Europe, 1990–2000

Starting from this empirical evidence, we ask: do these stylized facts reflect clear-cut causal relationships between trade openness and consumption volatility? And does the increased consumption volatility ultimately hurt consumption performance? To find the answers to these questions, an empirical analysis was carried out for thirty-four European countries over the period 1990–2000,[15] a decade of dramatic trade liberalization and of the implementation of major 'first type' reforms for the CEECs (Svejnar, 2002).

To examine whether consumption volatility is associated with trade shocks, consistently with Equation (9.3) of our model, we regress the volatility of annual per capita consumption growth on the volatility of trade openness and terms of trade,[16] also considering a dummy EEA (European Economic Area) in order to isolate the effect in the case of Western European countries. The fit of the regression is good, and all coefficients are robust and significant (see Table 9.1). The estimates bear the expected signs, denoting a positive and significant relationship between volatility of the trade variables considered and volatility of consumption. They also underline the pervasive role of trade variables in the case of crisis volatility, especially terms-of-trade volatility. In addition, with regard to total volatility, the dummy EEA is negative and significant, indicating that Western European countries are structurally less volatile to trade shocks than are the CEECs.

The next step, according to Equation (9.2) of our model, is to test whether higher levels of consumption volatility, as explained by the volatility of trade variables, actually worsen the macroeconomic performance of countries in terms of consumption growth. As seen in Table 9.2, the regression results reveal a negative and significant relationship between consumption

Table 9.1 Effects of trade volatility on consumption volatility

Dependent variable	**Consumption volatility**		
	Total	**Extreme**	**Crisis**
Constant	0.0265482*	−0.0255411***	−0.0178068***
	0.0159269	0.0090247	0.0065356
Trade openness volatility	0.0016426*	0.0030859***	0.0020907***
	0.0009373	0.0010391	0.0007275
Terms of trade volatility	1.082337***	1.345288***	0.8848553***
	0.3489715	0.3630412	0.2917468
Dummy EEA	−0.0343089***		
	0.0107949		
Test Breusch–Pagan/Cook–Weisberg (Prob > chi2)	[0.0106]	[0.0338]	[0.0011]
R-squared	0.73	0.62	0.61
Observations	34	34	34

Notes: Robust standard errors are reported below the corresponding coefficients. *** significant at the 1% level; * significant at the 10% level.

Table 9.2 Effects of total, extreme and crisis volatility on annual consumption performance

Dependent variable	**Consumption annual rate of change**		
Constant	0.0146746***	0.0129109**	0.0139055***
	0.0053625	0.0049837	0.0048053
Total volatility	−0.151357***		
	0.0551836		
Extreme volatility		−0.1452526***	
		0.0495562	
Crisis volatility			−0.2454084***
			0.0705418
Fiscal counter-cyclicality dummy	0.009648*	0.0096203*	0.0090316*
	0.0055026	0.0054275	0.0052014
Test Breusch–Pagan/Cook–Weisberg (Prob > chi2)	[0.0761]	[0.0935]	[0.5083]
R-squared	00:25	00:27	00:33
Observations	34	34	34

Note: Standard errors are reported below the corresponding coefficients. ***significant at the 1% level; **significant at the 5% level; *significant at the 10% level.

volatility and the growth rates.[17] This turns out to be particularly relevant in the case of extreme and crisis volatility components. The model also highlights that counter-cyclical behaviour in the management of policy tools is significantly and positively linked to good macroeconomic performance (see the fiscal dummy for counter-cyclicality).[18] This point is particularly relevant, since it underlines the fundamental role of the availability of efficient coping mechanisms able to improve the degree of resilience of the entire economic system and produce different welfare conditions. These results underline the adverse effect of economic uncertainty on a country's performance – uncertainty that could be related to several factors such as macroeconomic instability (Judson and Orphanides, 1996), institutional weakness (Rodrik, 1991; World Bank, 2000b), political insecurity (Alesina *et al.*, 1996) or, on a theoretical basis, to risk aversion and the irreversibility of wrong choices (Hnatkovska and Loayza, 2004). It is important to underline again the pervasive role of crisis volatility as well as the positive influence of national policy tools that are able to partially offset the negative effects.

With these facts in mind, we strongly support the need to go beyond the apparent positive association between trade openness and economic performance, particularly with regard to Eastern Europe. Trade liberalization, introducing an entirely new set of shocks and incentives, may have actually worsened growth and welfare performance in most CEECs, highlighting their vulnerability to trade openness.

Trade openness and vulnerability in Europe

In accordance with our model suggested earlier, we thus estimate the expected per capita consumption rates of change with zero volatility – a measure of the *potential* consumption – and compare these with the actual levels of expected per capita consumption rate of change (in presence of volatility). These results are reported in Table 9.3. It is easy to detect that the effect of volatility has been particularly relevant for Baltic states (more than 2 per cent of their potential annual per capita consumption growth has in fact been lost because of crisis volatility) and for the group of 'other European countries' (more than 1 per cent). The countries most notably affected by volatility are Latvia and Lithuania (almost 3 per cent of their potential annual per capita consumption growth has been lost because of 'crisis volatility'). In contrast, among the CEECs7 (the group that also includes the new EU member states) and, above all, among Western European countries (EEA member countries), the effect of volatility is less relevant, in particular with regard to the impact of extreme and crisis volatility.

Indeed, there are also cases of vulnerable countries among the CEECs (see, for example, Bulgaria, the Czech Republic and the Slovak Republic, which lost more than 1 per cent of their annual per capita consumption growth because of crisis volatility) and among the EEA. In the latter case, we should

Table 9.3 Annual loss of per capita consumption growth as a result of consumption volatility, %

	Total volatility	Extreme volatility	Crisis volatility		Total volatility	Extreme volatility	Crisis volatility
Estonia	−1.423	−1.271	−1.704	Austria	−0.125	0.000	0.000
Latvia	−2.608	−2.493	−2.931	Belgium	−0.162	0.000	0.000
Lithuania	−2.410	−2.307	−2.758	Denmark	−0.299	0.000	0.000
Baltic states	**−2.147**	**−2.024**	**−2.465**	Finland	−0.508	−0.254	−0.429
Albania	−1.877	−1.726	−1.416	France	−0.181	0.000	0.000
Belarus	−1.565	−1.486	−1.342	Germany	−0.192	0.000	0.000
Croatia	−1.348	−1.233	−1.139	Greece	−0.174	0.000	0.000
Macedonia, FYR	−1.148	−1.022	−1.005	Iceland	−0.655	−0.533	−0.589
Russian Federation	−0.741	−0.470	−0.127	Ireland	−0.329	0.000	0.000
Turkey	−0.839	−0.693	−0.737	Italy	−0.287	−0.211	−0.357
Other European	**−1.253**	**−1.105**	**−0.961**	Luxembourg	−0.380	−0.193	−0.326
Bulgaria	−1.364	−1.251	−1.534	Netherlands	−0.237	0.000	0.000
Czech Republic	−1.171	−1.033	−1.479	Norway	−0.177	0.000	0.000
Hungary	−0.641	−0.389	−0.506	Portugal	−0.258	0.000	0.000
Poland	−0.299	0.000	0.000	Spain	−0.240	0.000	0.000
Romania	−1.150	−1.054	−0.916	Sweden	−0.353	0.000	0.000
Slovak Republic	−1.467	−1.331	−1.855	Switzerland	−0.166	0.000	0.000
Slovenia	−0.932	−0.860	−0.852	United Kingdom	−0.282	0.000	0.000
CEECs7	**−1.004**	**−0.845**	**−1.020**	**EEA**	**−0.278**	**−0.066**	**−0.095**

mention Finland, Iceland, Italy and Luxembourg, where, however, the loss caused by crisis volatility was less than 0.5 per cent of consumption growth.

Practically speaking, if CEECs7, the Baltic states and the group of 'other European countries' had been able to reduce the degree of consumption volatility related to trade volatility, they would have achieved higher levels of consumption during the 1990s. This is precisely what we are aiming to demonstrate. This empirical exercise shows that CEECs' wellbeing during the 1990s was remarkably negatively affected by trade shocks, through the impact on consumption volatility, giving us a measure of the relative vulnerability of the CEECs to trade openness compared to Western European countries over the same decade. However, since vulnerability is by definition a *forward-looking* approach, the measurement of vulnerability to trade openness calls for comment on the expected value of macroeconomic performance. For this task, we calculate the probability of each country to suffer a reduction in its annual per capita consumption growth because of trade shocks. Thus, for each country analysed, we test the probability of an improvement in extreme volatility induced by a 25 per cent improvement in volatility of trade variables. We then calculate the associated negative effect in terms of a reduction in the annual per capita consumption growth.[19]

The higher the probability of improvement of extreme volatility in trade variables and the magnitude of its negative effect on per capita consumption growth, the higher the degree of vulnerability for a given country.

Table 9.4 reports the results for each country in the sample. It confirms clearly that Western European countries are structurally less vulnerable than other countries in the sample, both in the case of increased volatility of trade openness and terms of trade. On average, they show a very limited probability of being adversely affected by a shock in terms of extreme volatility (about 7:100), and even when these unlucky episodes occur the induced negative effects on annual consumption growth remain small (on average, no more than −0.05 per cent in the case of terms of trade shocks and −0.11 per cent in the case of trade openness). Relevant exceptions are Norway, Ireland and Luxembourg, which show levels of probability of extreme volatility and likely dimensions of negative effects on annual consumption similar to those of the Baltic states (the most vulnerable countries in the sample). In particular, the Scandinavian countries all show a clear tendency to achieve above-average values among EEA.

The most vulnerable groups in the sample are the Baltic states and the other Eastern European countries (the probability of experiencing an episode of extreme volatility is almost 1:5). However, the situation is highly divergent among the countries within each group. For example, among the CEECs7, while the Czech and Slovak Republics show some of the highest probabilities of extreme volatility in terms of trade and the worst results in terms of consumption performance, Bulgaria, Hungary, Poland and Slovenia register some of the best results. Similarly, among the other European countries, Albania, Russia and Belarus have some of the worst performances, while Turkey registers a performances similar to most Western European countries.

However, the measurement of the CEECs7's estimated vulnerability needs a more careful approach. We need in fact to take into account that these countries are (or will shortly become) new EU member states.[20] Are these countries likely to experience a different volatility path because of EU economic and political integration? In other words, will the new member countries experience a sort of synchronization with the socioeconomic performance of EEA member countries and a stabilization of their degree of volatility? The obvious reference for testing this hypothesis is the past experience of Greece, Portugal and Spain, the Mediterranean EU countries that joined the EEC in the 1980s. In fact, these countries did show an overall increased synchronization with the older EU member countries (Table 9.5),[21] with the relevant exception of Spain with reference to trade openness, and Greece in the case of terms of trade volatility. The situation in terms of reduction of extreme volatility is also noteworthy – after accession, neither

Table 9.4 Probability of improvement of extreme volatility and its relative effects on annual per capita consumption growth

	Probability of an improvement in extreme volatility due to			
	Trade openness		**Terms of trade**	
	Probability (%)	**Effects (%)**	**Probability (%)**	**Effects (%)**
Estonia	19.57	−0.2688	19.12	−0.1176
Latvia	20.09	−0.2748	21.94	−0.4021
Lithuania	21.09	−0.4118	10.23	−0.1389
Baltic states	**20.25**	**−0.3184**	**17.10**	**−0.2195**
Albania	20.49	−0.2234	21.35	−0.0998
Belarus	21.76	−0.3163	21.94	−0.2745
Croatia	17.66	−0.2683	20.99	−0.0756
Macedonia, FYR	19.58	−0.2365	17.85	−0.0961
Russian Federation	18.84	−0.2498	21.42	−0.1930
Turkey	9.13	−0.1412	13.78	−0.0549
Other European	**17.91**	**−0.2392**	**19.56**	**−0.1323**
Bulgaria	18.55	−0.1804	0.00	0.0002
Czech Republic	19.54	−0.2015	21.66	−0.1932
Hungary	21.38	−0.3027	0.00	−0.0522
Poland	0.00	−0.0892	0.00	−0.0109
Romania	13.11	−0.1347	3.91	−0.0608
Slovak Republic	21.15	−0.3051	20.35	−0.1315
Slovenia	18.04	−0.1689	0.00	0.0431
CEECs7	**15.97**	**−0.1975**	**6.56**	**−0.0703**
Austria	10.11	−0.1375	0.00	−0.0273
Belgium	16.40	−0.1650	14.96	−0.0561
Denmark	6.49	−0.0795	9.10	−0.0541
Finland	8.33	−0.1230	7.00	−0.0549
France	0.00	−0.0621	0.00	−0.0134
Germany	2.20	−0.0904	0.00	−0.0310
Greece	0.00	−0.0562	0.00	−0.0258
Iceland	0.00	−0.0744	0.00	−0.0484
Ireland	21.48	−0.2987	19.37	−0.0660
Italy	0.00	−0.0765	0.00	−0.0392
Luxembourg	21.31	−0.3252	12.27	−0.0724
Netherlands	2.49	−0.1175	0.00	−0.0165
Norway	0.00	−0.0283	20.92	−0.2200
Portugal	0.00	−0.0549	6.42	−0.0436
Spain	4.03	−0.1217	0.00	−0.0176
Sweden	13.94	−0.1488	16.53	−0.0789
Switzerland	2.20	−0.0953	14.66	−0.0901
United Kingdom	0.00	−0.0463	5.88	−0.0545
EEA	**6.06**	**−0.1167**	**7.06**	**−0.0561**

Table 9.5 Volatility patterns before and after EU accession

	Normal volatility			**Extreme volatility**			**Total volatility**		
	Before accession	**After accession**	**Difference (%)**	**Before accession**	**After accession**	**Difference (%)**	**Before accession**	**After accession**	**Difference (%)**
Trade openness									
Greece	3.467	2.232	−35.61	4.254	1.579	−62.88	7.721	3.811	−50.63
Portugal	2.169	4.378	101.86	7.398	0.000	−100.00	9.566	4.378	−54.24
Spain	2.924	3.941	34.75	4.367	5.242	24.21	7.291	9.365	28.44
Terms of trade									
Greece	0.004	0.007	76.32	0.003	0.000	−100.00	0.007	0.007	2.99
Portugal	0.004	0.001	−78.29	0.013	0.011	−14.10	0.017	0.012	−30.58
Spain	0.004	0.001	−65.41	0.010	0.009	−12.55	0.014	0.010	−27.16

Table 9.6 Probability of improvement of extreme volatility and effects on annual per capita consumption growth after EU accession

Country	**Greece**		**Portugal**		**Spain**	
	Probability (%)	**Effect (%)**	**Probability (%)**	**Effect (%)**	**Probability (%)**	**Effect (%)**
Volatility shocks from trade openness						
Czech Republic	13.21	−0.099	0.00	−0.092	21.55	−0.259
Estonia	13.24	−0.133	00.00	−0.123	21.57	−0.345
Hungary	14.95	−0.149	0.00	−0.139	23.38	−0.389
Latvia	13.73	−0.136	0.00	−0.126	22.10	−0.353
Lithuania	14.67	−0.203	0.00	−0.188	23.10	−0.529
Poland	0.00	−0.044	0.00	−0.041	0.00	−0.115
Slovak Republic	14.73	−0.151	0.00	−0.140	23.15	−0.392
Slovenia	11.85	−0.083	0.00	−0.077	20.04	−0.217
Terms of trade volatility shock						
Czech Republic	0.00	−0.199	26.44	−0.134	25.77	−0.141
Estonia	0.00	−0.121	023.97	−0.082	23.29	−0.086
Hungary	0.00	−0.054	0.00	−0.036	0.00	−0.038
Latvia	0.00	−0.414	26.71	−0.279	26.05	−0.293
Lithuania	0.00	−0.143	14.60	−0.096	13.95	−0.101
Poland	0.00	−0.011	0.00	−0.008	0.00	−0.008
Slovak Republic	0.00	−0.135	25.18	−0.091	24.50	−0.096
Slovenia	0.00	−0.044	0.00	−0.030	0.00	−0.031

Portugal nor Greece showed any sharp fluctuations in trade openness and terms of trade volatility, respectively.

Assuming that the new EU member countries of Central and Eastern Europe will experience trade volatility patterns similar to those of the Mediterranean EU member countries, we can thus calculate new probabilities of per capita consumption volatility for these countries and the likely impact on their macroeconomic performance (see Table 9.6). Of course, in the case of Portugal and Greece, the probability of trade openness shocks and terms of trade volatility, respectively, is equal to zero because of the total overall reduction of extreme volatility following accession. In the case of a shock in trade openness volatility, the CEECs show a lower degree of vulnerability than in the previous exercise under the prevalence of the Greece effect and an improvement of trade vulnerability under the Spanish case. Instead, in the case of shocks in terms of trade volatility, the results are quite surprising. Since CEECs will register a decrease in extreme volatility less than proportional to total volatility, they In fact show a higher degree of vulnerability, notwithstanding a reduction in total volatility.

The effects on the poorest quintile

As mentioned earlier, we also test the robustness of our results on the economic performance of the poorest quintile of the population. Note that, in this particular case, disposable per capita income[22] is considered to be a good proxy of permanent income under the key hypothesis that the poorest consume most of their income in every period. Consistent with the same empirical exercise carried out for the average level of annual per capita consumption volatility, we also found a positive and significant relationship between the volatility of trade variables and the volatility of annual per capita income in the case of the poorest quintile of the population (see Table 9.7). In addition, dummy EEA remains negative and significant, and the impact higher in the presence of terms of trade volatility. Thus we tested for the possible negative effects of income volatility on annual rate of income change for the poorest quintile of the population. Once again, consistent with the results of the above estimates, the results reveal a negative and significant relationship between income volatility and the growth rate, together with a significant and positive effect of the counter-cyclical behaviour of fiscal policy (see Table 9.8).[23]

Hence, we measure the actual degree of vulnerability, caused by trade openness, of the poorest quintile of the population for each country in our sample (see Table 9.9). These results are again consistent with the average outputs. The most vulnerable poor live primarily in the Baltic states,

Table 9.7 Effects of trade volatility on income volatility of the poorest quintile of the population

Dependent variable	**Poorest quintile income volatility**		
	Total	**Extreme**	**Crisis**
Constant	0.0233034*	−0.0170362**	−0.0102353*
	0.0132428	0.0067229	0.0050561
Trade openness volatility	0.0013097***	0.0023066***	0.0015363***
	0.000435	0.0007371	0.0005053
Terms of trade volatility	0.7740452***	1.01342***	0.6792978***
	0.2410086	0.2506656	0.2230376
Dummy EEA	−0.0256336**		
	0.0101201		
Test Breusch–Pagan/Cook–Weisberg (Prob>chi2)	[0.0484]	[0.0264]	[0.0104]
R-squared	0.67	0.53	0.49
Observations	33	33	33

Note: Robust standard errors are reported below the corresponding coefficients. ***significant at the 1% level; **significant at the 5% level; *significant at the 10% level.

Table 9.8 Effects of total, extreme and crisis volatility on annual rate of change in income among the poorest quintile of the population

Dependent variable	**Annual rate of change in the income of the poorest quintile**		
Constant	0.0180462***	0.0162651***	0.0148926***
	0.0048272	0.0041035	0.0042547
Total volatility	−0.1966422**		
	0.0831103		
Extreme volatility		−0.1923244***	
		0.0719827	
Crisis volatility			−0.2178431**
			0.1072503
Fiscal procyclicality	−0.0201437*	−0.0189141*	−0.0197635*
	0.0100175	0.0098156	0.0102317
Test Breusch–Pagan/Cook–Weisberg (Prob>chi2)	[0.4415]	[0.3722]	[0.3375]
R-squared	0.24	0.27	0.21
Observations	33	33	33

Note: Standard errors are reported below the corresponding coefficients. ***significant at the 1% level; **significant at the 5% level; *significant at the 10% level.

Table 9.9 Effects of volatility on income growth of the poorest quintile of the population

	Total volatility	**Extreme volatility**	**Crisis volatility**		**Total volatility**	**Extreme volatility**	**Crisis volatility**
Estonia	−1.677	−1.638	−1.261	Austria	−0.233	0.000	0.000
Latvia	−2.477	−2.402	−2.053	Belgium	−0.272	0.000	0.000
Lithuania	−1.913	−1.871	−1.374	Denmark	−0.273	0.000	0.000
Baltic states	**−2.022**	**−1.970**	**−1.563**	Finland	−0.770	−0.538	−0.509
Albania	−2.488	−2.145	−2.069	France	−0.244	0.000	0.000
Belarus	−1.571	−1.477	−0.946	Germany	−0.284	0.000	0.000
Croatia	−1.835	−1.742	−1.385	Greece	−0.345	0.180	0.204
Macedonia, FYR	−0.782	−0.580	−0.405	Iceland			
Russian Federation	−1.499	−1.431	−0.718	Ireland	−0.581	−0.137	−0.155
Turkey	−1.086	−1.019	−0.763	Italy	−0.217	0.000	0.000
Other European	**−1.544**	**−1.444**	**−1.048**	Luxembourg	−0.574	0.000	0.000
Bulgaria	−1.058	−0.937	−0.680	Netherlands	−0.219	0.000	0.000
Czech Republic	−0.585	−0.670	−0.628	Norway	−0.241	0.000	0.000
Hungary	−0.945	−0.689	−0.703	Portugal	−0.378	−0.197	−0.223
Poland	−0.741	0.527	0.597	Spain	−0.271	0.000	0.000
Romania	−1.172	−1.080	−0.717	Sweden	−0.497	0.000	0.000
Slovak Republic	−1.230	−1.097	−0.994	Switzerland	−0.277	0.000	0.000
Slovenia	−0.094	−0.000	−0.000	United Kingdom	−0.310	0.000	0.000
CEECs7	**−0.871**	**−0.714**	**0.617**	**EEA**	**−0.352**	**−0.062**	**−0.064**

followed by other European countries and CEECs7 (with the relevant exceptions of Bulgaria and Slovenia), while the poorest populations in most of the Western European countries are not vulnerable to trade shocks, except in Finland, Greece, Ireland and Portugal.

Conclusions

This chapter offers a substantive contribution to the debate on the globalization and poverty nexus by underlining the pervasive role of trade liberalization on the development performance of emerging countries, with a specific focus on macro vulnerability and its effects on the poorest. More specifically, it tries to find a missing link in the theory between trade shocks, volatility and macro vulnerability of partner countries. To achieve this aim, the study presents a methodology to analyse these relationships, and explores, both conceptually and empirically, the case of Eastern Europe.

The main result of the analysis is that in spite of the apparent association between trade openness and good macroeconomic performance, Eastern European countries have experienced a deterioration in their macroeconomic wellbeing as a result of the trade shocks of the early 1990s and show a higher degree of vulnerability in the case of future waves of trade liberalization. Moreover, the study underlines that it is the 'extreme' component of the volatility of trade variables that has the strongest negative effects on the macroeconomic performance of partner countries. This has to be related to the limited ability of the more fragile countries in terms of their economy and institutional capacity to cope with a higher degree of uncertainty (that is, a lack of resilience) as well as the poor utilization of adequate policy tools that would be able to mitigate the repercussions of trade shocks on the domestic economy. These results are also robust in the case of the poorest quintile of the population, sparking concern for the subsistence of these people in case of trade shocks.

This analysis spurs some general and relevant policy implications at both national and supranational levels. First, countries need to act in order to limit the impact of trade shocks on the volatility of their macroeconomic framework, as this is likely to worsen their macroeconomic welfare. This implies a need to adopt specific and forward-looking national policies to support the trade liberalization process – policies both to mitigate the impact of trade shocks on the national economy and to enhance the coping mechanisms of the population in the face of external shocks. In view of this goal, a micro approach that, for example, would limit policy intervention to risk insurance tailored to specific target groups would appear to be insufficient. Second, countries with weak institutions and imperfect internal markets risk being affected adversely by the consequences of globalization. Hence, the *governance* of the globalization process needs to be improved, establishing a new 'culture of prevention' and designing policies that are able to limit the size and frequency of shocks at the international level. In other words, multilateral agreements and international institutions should play a role in reducing the degree of risk exposure within the current international setting.

Finally, this chapter points to a new direction for future research. It is, for example, fundamental to test and improve the methodology of vulnerability to trade analysis by broadening, on the one hand, the areas of research (for example, to include other shocks linked to trade openness) and the instruments adopted, and deepening, on the other hand, the level of analysis so as to conduct specific risk and vulnerability analysis at the 'meso' level, by fostering its macro–micro linkages.

Appendix

Table 9.A1 Average annual per capita consumption growth in Europe, 1990–2001

Average annual per capita consumption growth			
Estonia	0.83	Austria	1.92
Latvia	−1.76	Belgium	1.78
Lithuania	−2.24	Denmark	1.53
Baltic states	**1.92**	Finland	1.10
Albania	4.47	France	1.05
Belarus	0.60	Germany	1.60
Croatia	3.13	Greece	1.96
Macedonia, FYR	1.39	Iceland	2.28
Russian Federation	1.74	Ireland	4.72
		Italy	1.55
Turkey	1.74	Luxembourg	1.54
Other European	**2.44**	Netherlands	2.15
Bulgaria	−1.93	Norway	2.44
Czech Republic	1.36	Portugal	2.94
Hungary	0.06	Spain	1.74
Poland	4.86	Sweden	1.74
Romania	1.74	Switzerland	1.74
Slovak Republic	1.74	United Kingdom	1.74
Slovenia	1.74		
CEECs7	**−1.93**	**EEA**	**1.53**

Source: World Bank, *World Development Indicators* (WDI).

Table 9.A2 Volatility of CEECs main macroeconomic variables, 1990–2001 (standard deviation)

	Per capita consumption growth rate (annual %)	**GDP per capita growth rate (annual %)**	**Per capita consumption rate/per capita GDP growth rate**	**Life expectancy**	**Enrolment**	**Trade (% of GDP)**	**Terms of trade**	**Import price index**	**Current account balance**
Albania	9.484	6.439	1.473	1.11	0.106	16.661	21.466	18.895	3.583
Bulgaria	5.283	5.263	1.004	0.31	0.039	11.358	5.316	9.187	3.932
Croatia	5.064	6.817	0.743	0.73	0.047	8.224	3.441	7.371	5.718
Czech Republic	3.218	2.695	1.194	0.91	0.043	13.110	5.503	7.047	2.520
Estonia	9.947	8.419	1.181	1.26	0.053	20.952	3.581	10.159	3.939
Hungary	3.303	2.475	1.335	0.83	0.065	23.435	2.813	6.559	3.409
Latvia	15.635	12.867	1.215	1.41	0.074	17.976	16.306	9.989	6.190
Lithuania	3.169	10.285	0.308	1.40	0.053	30.257	6.196	3.459	3.759
Poland	1.988	1.764	1.127	0.77	0.045	6.795	3.378	4.749	2.792
Romania	5.875	4.792	1.226	0.30	0.058	7.691	5.990	10.135	1.670
Slovak Republic	4.283	4.183	1.024	0.39	0.058	14.509	4.113	8.341	5.086
Slovenia	4.611	2.851	1.618	0.84	0.038	3.674	3.819	9.342	3.113
CEECs7	4.080	3.432	1.189	0.62	0.050	11.510	4.419	7.909	3.217
Baltic states	9.584	10.524	0.911	1.36	0.060	23.062	8.694	7.869	4.629
EEA	1.70	1.717	0.991	0.54	0.057	8.989	2.411	7.670	2.048
Other European	7.64	6.302	1.212	0.75	0.068	13.226	9.038	17.954	3.160

Source: World Bank, *World Development Indicators* (WDI).

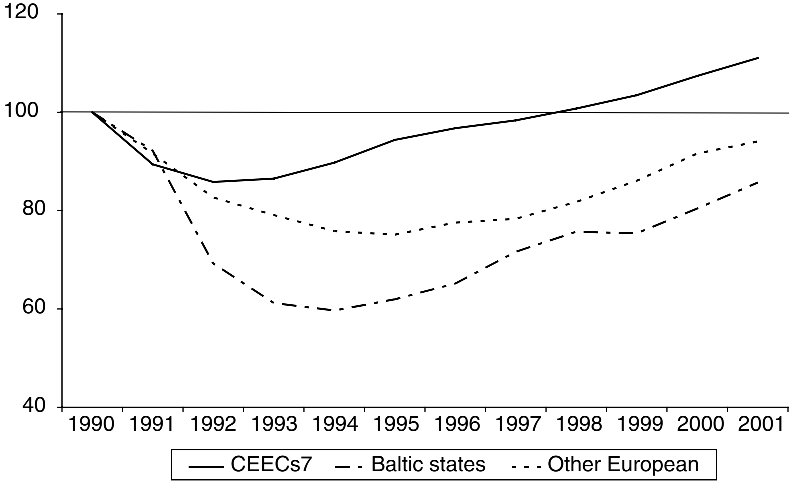

Figure 9.A1 The U-shaped curve of per capita GDP of European transition countries, 1990–2001

Notes: The CEECs7 = Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovak Republic and Slovenia. Other European = Albania, Belarus, Macedonia FYR and Russian Federation. Baltic states = Estonia, Latvia and Lithuania.

Source: World Bank, *World Development Indicators* (WDI).

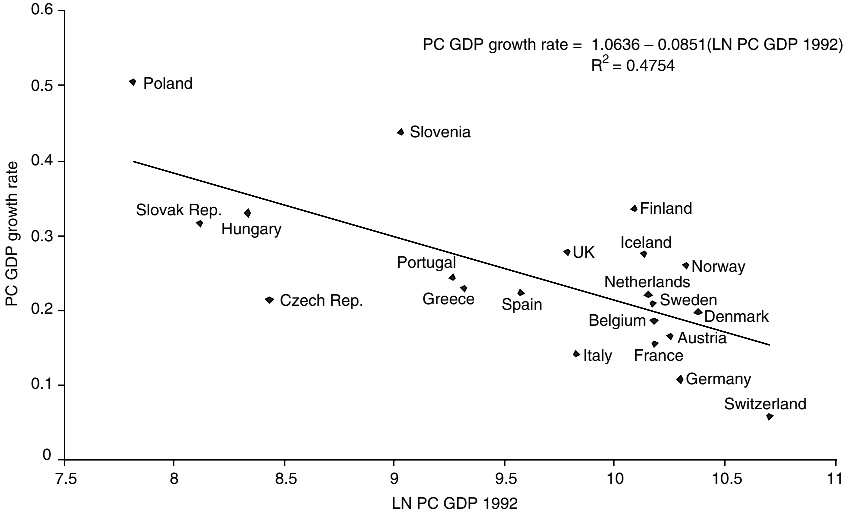

Figure 9.A2 Per capita GDP β convergence in Europe, 1992–2001

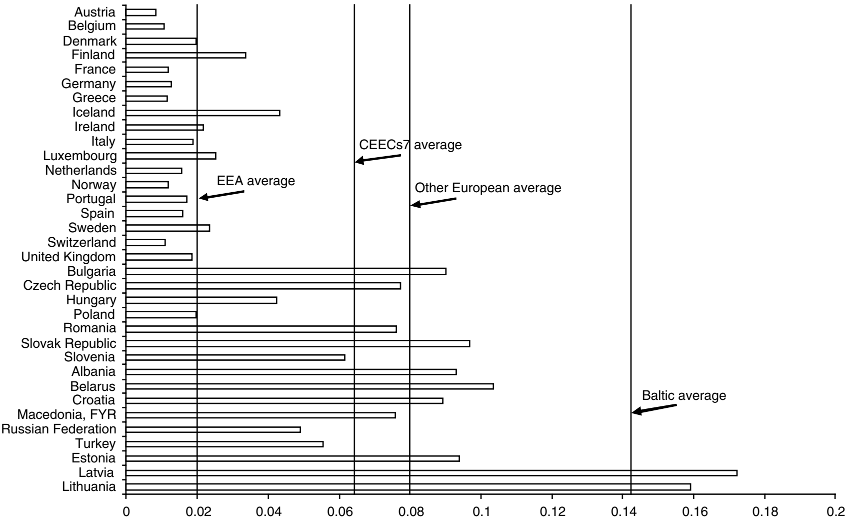

Figure 9.A3 Consumption volatility (standard deviation): the European picture, 1990–2001

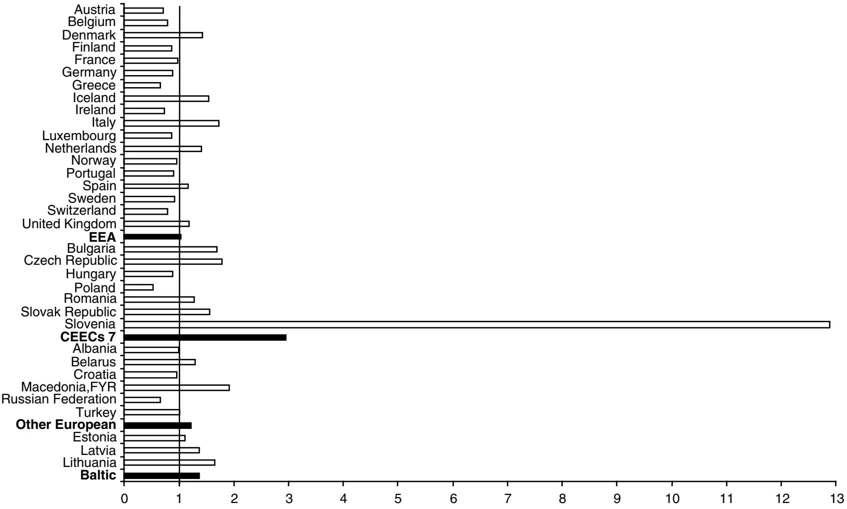

Figure 9.A4 Consumption volatility (standard deviation) relative to income volatility: the European picture, 1990–2001

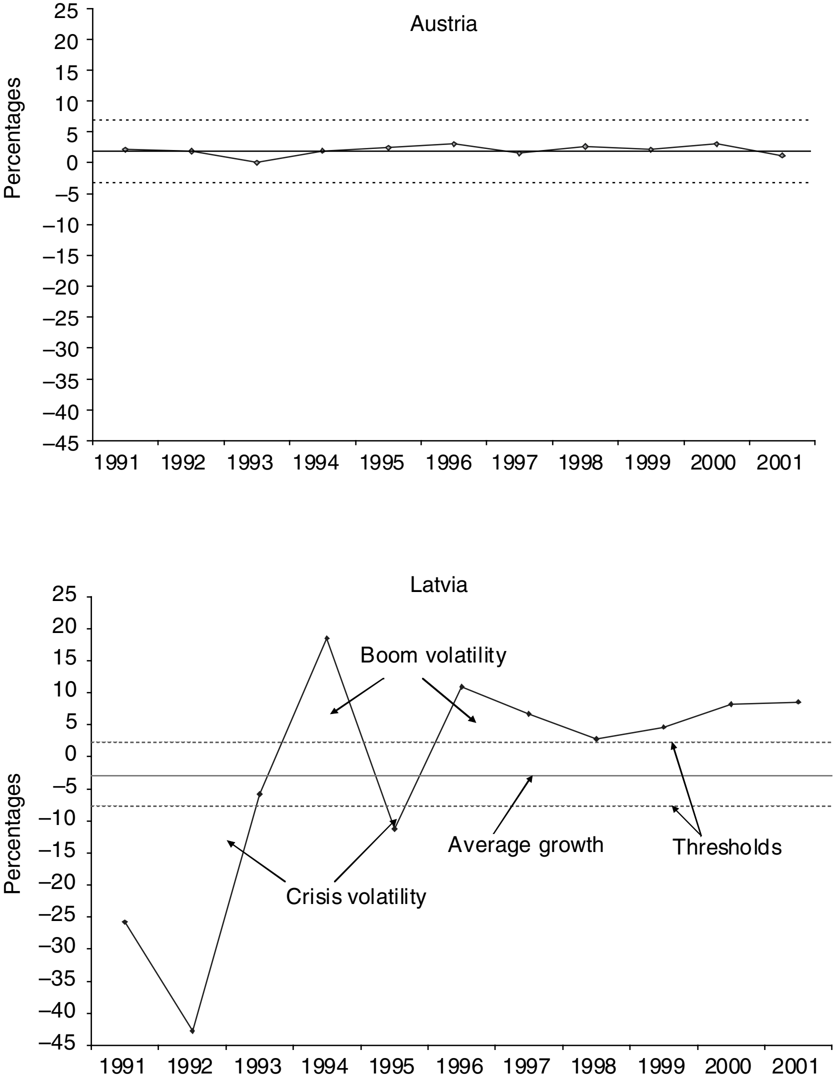

Figure 9.A5 Volatility decomposition of per capita consumption rates of change, 1991–2001: a comparison between Austria and Latvia

Notes

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1. Baldwin and Martin (1999) and Williamson (2002) highlight that, historically, there have been two waves of globalization: the first from 1820 (with the start of the global *pax Britannica*) to the First World War, and the second, still in place, since the Second World War. Both these waves have been actually characterized by a robust process of economic integration and reduction of trade barriers.
2. On these issues, see also Yusuf (2001), and several essays in Ocampo *et al.* (2000).
3. The Comecon was established in 1949 with the aim of promoting economic, scientific and technological co-operation, and to develop economic integration among the following socialist member countries: USSR, Bulgaria, Czechoslovakia, Hungary, Poland, Romania, Albania (1949); East Germany (1950), Mongolia (1962), Cuba (1972) and Vietnam (1978).
4. For an extensive review of the effects of trade liberalization on the wellbeing of partner countries, see McCulloch *et al.* (2001).
5. This is a central point. Some disciplines consider vulnerability to be something that is very similar to *ex-post* poverty outcome assessments. Instead, a proper vulnerability assessment requires *ex-ante* analysis of the exogenous risk factors and risk management tools. While many international organizations (FAO, World Bank, UNDP, USAID, for example) have made significant strides in improving our understanding of vulnerability, a proliferation of multiple methodologies, terminology and approaches to vulnerability exists, involving as diverse areas of interest as food security, conflict prevention, and so on (Triulzi and Montalbano, 2002).
6. Most approaches place particular emphasis on elaborating the classification of risk, risk response strategies and livelihood characteristics of households and communities. It is widely agreed that risks derive from a variety of natural, political, social and economic sources. Some methodologies (for example, the World Bank) also distinguish between the characteristics of the risk, such as *frequency, magnitude, intensity* and *correlation* (World Bank 2003). This depth of risk classification, however, is not widespread. Some experts prefer to use the term 'life event' instead of 'shocks' or 'stress', to allow for the inclusion of an active component, in contrast to a perception of the poor as passive social actors. Risk management tools are also analysed and grouped into specific categories in most vulnerability approaches. These instruments are generally divided into *reduction, mitigation* and *coping mechanisms*. The sustainable livelihoods approach, for example, focuses on short-term coping strategies and long-term adaptive behavioural changes (UNDP, 1999).
7. There is, generally speaking, an intrinsic incompatibility between the completeness of the definition of vulnerability and its ability to be empirically valid (Alwang *et al.*, 2001). The problem for a quantitative analysis is to isolate a simple measure (or set of measures) that is comparable across time and location (Gamanou and Morduch, 2002). The information requirements are high, and no straightforward measurement of hypothetical situations is possible via survey data. Currently, most of the applications used infer the distributions of possible outcome shocks from the error process in cross-section regression models explaining consumption outcomes by household and community variables. This implies strong assumptions on how shocks evolve over time and space. The data needed to construct outcome-based

measures are many, while they do not give much insight on how the poor cope with vulnerability (Dercon, 2001). Other measures may help to fill these gaps, such as, for example, the sustainable livelihoods approaches, which focus on assets.

8. See Ligon and Schechter (2004) for an overview.
9. Although some of the crises received considerable attention in the media (Mexico, 1995; Southeast Asia, 1997; Brazil and Russia, 1998; and Argentina, 2001), these, as also highlighted by the World Bank (2000a), represent merely the tip of the iceberg of a much larger and more complex phenomenon.
10. In this analysis, we use the Global Development Finance (GDF) and *World Development Indicators* (WDI), the primary World Bank database for development data from officially recognized international sources. The database is updated quarterly.
11. With a few exceptions (see Thomas, 2003). However, often current studies have largely ignored a number of relevant macro issues, such as those related to the lack of policy credibility, or the inconsistency between short-term strategies and long-term commitments, and the relationship between conflicts and vulnerability (Triulzi and Montalbano, 2001, 2003).
12. We may divide current volatility literature into two strands: one that analyses the effects of volatility, and the other focusing on its determinants. Most of the literature on the effects of volatility suggests a positive relationship between volatility and (average) growth. However, there is an alternative view, notably applied to emerging markets, which suggests a negative link, based on the explanation that greater uncertainty lowers investments in physical and human capital, thereby reducing long-term growth (Ramey and Ramey, 1995; Talvi and Vegh, 2000; Easterly *et al.*, 2001; Pallage and Robe, 2003; Hnatkovska and Loayza, 2004). The second strand of the literature examines the determinants of particularly high or low volatility (extreme volatility) typically in cross-section analysis (Gavin and Hausmann, 1996; Rodrik, 1999; Acemoglu *et al.*, 2003).
13. Consistently with the Barro and Sala-í-Martín (1991 and 1995) hypothesis, among the European countries analysed we detect a clear negative relationship between the per capita income growth rate and natural log of its initial level (see Figure 9.A2). This process of convergence, namely 'β convergence', does not imply the existence of a reduction in the relative distribution of income over time, as in the case of the so-called 'σ convergence'.
14. They show that, while the volatility of output growth declined on average in the 1990s relative to the three earlier decades, the volatility of consumption growth increased, especially for the financially more integrated developing countries.
15. The countries analysed are the Western European countries (members of the EEA): Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom; CEE countries: Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic and Slovenia; and other European countries: Albania, Belarus, Croatia, Macedonia, the Russian Federation and Turkey.
16. We use the following variables from the GDF and WDI central database: per capita household final consumption expenditure (constant 1995 US$); terms of trade adjustment (constant LCU) and trade (percentage of GDP): that is, the sum of exports and imports of goods and services measured as a share of GDP.

17. We also tested the robustness of the model by using an 'instrumental variable' technique in order to take into account the possibility that volatility may be endogenously determined, together with long-run growth.
18. Counter-cyclicality is defined as the statistical correlation between the rates of change of final household per capita consumption and the rates of change of general final governmental consumption expenditure (percentage of GDP). Counter-cyclicality dummy assumes value 1 when correlation is negative, 0 otherwise.
19. Under the hypothesis of a normal distribution of trade variables, we test the following hypothesis: H_0: $s^2 \leq \sigma^2$ against H_1: $s^2 > \sigma^2$. Under the null hypothesis $\frac{s^2(n-1)}{\sigma^2} \approx \chi^2_{n-1}$ where n is the number of years considered in the forecast, s^2 is the extreme volatility observed in the sample and σ^2 is the assumed higher extreme volatility.
20. The Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic and Slovenia joined the European Union on 1 May 2004, and Bulgaria and Romania are expected to join in 2007.
21. This result is consistent with other similar empirical evidence. For example, following the implementation of NAFTA, Mexico also appears to have recorded a larger synchronization of its macro volatility with the USA and Canada (Kose, 2004).
22. According to Basu (2001), per capita income within each quintile is given by $q = (x1 + \ldots + xt)/t$, where $t = n/5$.
23. Here again we also tested the robustness of the model, by using an 'instrumental variable' technique.

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10

Globalization, Poverty, Inequality and Insecurity: Some Insights from the Economics of Happiness

Carol Graham

Introduction

Few issues have raised as much debate as the effects of globalization on poverty and inequality. Much of the debate among academics has focused on aggregate, money-metric measures of progress, such as per capita income growth and trends in the poverty headcount. These measures suggest that countries integrating into the world economy do better at growing and reducing poverty than those that do not, although with a great deal of variation among them, depending on their initial factor endowments and institutional structures.[1] For the most part, however, such measures fail to capture phenomena that may have important effects on individuals' real and perceived welfare outcomes, such as vulnerability among the near poor, distributional shifts at the local, cohort and sector level, and changes in the provision and distribution of public services, among others. These latter trends play a major part in determining public perceptions about the benefits and fairness of the globalization process. Thus, there is a major discrepancy between the generally positive and/or more nuanced academic assessments of the benefits of the process and the more negative assessment that is prevalent among the vocal critics of globalization. Some of this discrepancy is related to a mismatch between the extensive data that are available to academics studying the process, and the anecdotal evidence that is the basis for most public critiques of globalization. Yet some of it has deeper explanations that lie in the very different metrics used to benchmark progress.

While academics focus on internationally accepted poverty lines and measures of inequality, the average citizen experiencing the process tends to rely on country-level or even neighbourhood-level norms about what constitutes poverty, and on local and sector-level income differentials rather than national ones. It is virtually impossible for internationally comparable measures, such as the US$1 or US$2 (PPP) a day poverty line, the Gini coefficient, and the 90/10 ratio, to account adequately for local norms and micro-level trends. Nor do they capture *vulnerability* to falling into poverty, which is an extremely important component of welfare in developing economies as labour markets and other structures adapt to deeper integration in the world economy.

A related conceptual problem in the debate on globalization and poverty is a lack of distinction between basic needs definitions of poverty, and broader definitions, including that of near poverty or vulnerability. While alleviating extreme poverty is and should be a major goal of economic development, the first-order policies required are distinct from those that pertain to countries' deepening integration into the global economy. The former include enhancing capacity to meet basic nutritional needs and investments in primary education, health and public infrastructure such as water, electricity and roads. The latter tend to focus on the function of labour and capital markets, trading systems, and regulatory and social welfare institutions. While both kinds of poverty can and do co-exist in many countries, the problems and policies are not unrelated, and they pose distinct analytical and policy challenges. Establishing channels of causality related to globalization, meanwhile, is even more complex. The populations with the highest concentrations of extreme poor, meanwhile, such as those in sub-Saharan Africa, tend to have minimal integration in the global economy.

This chapter relies on surveys of subjective wellbeing or happiness, a relatively new tool for economists and other social scientists, to draw a broader picture of how the poor and the near poor in developing economies fare during the process of globalization. My research in Latin America and Russia, conducted jointly with several colleagues, suggests that happiness surveys can tell us a great deal about how the *dynamics* of poverty and inequality affect wellbeing. They reveal many other elements of wellbeing that are not captured by income measures alone, and can enhance our understanding of the effects of globalization on these processes. The picture is, by definition, a complex and incomplete one. Yet, in this chapter, we posit that these results, coupled with broader insights from the literature on the economics of happiness, can contribute to our understanding of the complex relationships between globalization and poverty and inequality, as well as help to explain the discrepancy between aggregate data-based evaluations and those based on individual, region or country-specific experiences.

The economics of happiness

Central to the findings of much of the happiness literature in the developed economies are numerous discrepancies between reported measures of wellbeing and income measures. Easterlin (1974) pioneered the economics of happiness in the mid-1970s.[2] He found that, across countries and cultures, the way that most people spend their time is similar – working and providing for their families; and the concerns they express when asked about happiness are similar. His finding – that wealthy people tend to be happier than poorer ones within countries, but that there is no such relationship among countries or over time – has since been supported by a number of subsequent studies, and is known as the 'Easterlin paradox'.[3] More recently, Stefano Pettinato and I developed data for seventeen countries in Latin America and found similar results.[4]

While the Easterlin paradox – and happiness surveys more generally – provide us with important information and suggest new analytical approaches, they can also pose challenges when translated into direct policy recommendations. For example, at the same time that countries have grown wealthier over time, they have also made major improvements in other indicators, such as morbidity, mortality and literacy rates.[5] If the direct policy conclusion from the Easterlin paradox is that more money does not make people happier, then a related conclusion could be that long-term gains in health and education also do not make people happier.[6] Most development economists would find this extremely problematic. Related to this, a prominent explanation for the Easterlin paradox is that norms and expectations adapt upwards at about the same rate as income increases and thus, after basic needs are met, income increases do not make people happier. The most extreme view of the adaptation thesis is the psychologists' 'set point' theory of happiness, which posits that all individuals have a set point of happiness and that they adapt back to that set point even after major events like winning a lottery or getting divorced.[7] The rather uncomfortable message for policy-makers might then be that, after a certain point, there is nothing that they can do to make people happier.[8]

That is an extreme view, however, and even if norms and adaptation have major roles in determining subjective wellbeing, there is also ample evidence that objective conditions, and changes in objective conditions, matter. Additionally, comparisons across countries, relying on aggregated, country-level responses, have limited utility. In addition, country-level happiness scores can also be biased by idiosyncratic conceptualizations of wellbeing or happiness that are driven by language, culture or other unobservable traits.[9] The most useful, and robust, comparisons are those across individuals *within* particular countries and over time, and/or across large numbers of individuals across countries, but including controls for unobservable country-level traits. Within virtually all countries where such surveys are conducted, cross-sectional data show that wealthy people are happier than poor people. Healthy people are also happier, as are employed, more educated and married persons. Conversely, economic and other forms of insecurity, such as high levels of crime, seem to have negative effects on people's happiness.[10]

This hardly supports the thesis that progress does not matter. Escaping abject poverty and having sufficient income seem to matter to people's happiness, but other non-income factors, such as stable employment, marital status and good health, have equally important roles. While across nations there are diminishing returns to increasing income, other things that correlate with national income, such as health, quality of government, and human rights, are correlated with higher happiness levels (Frey and Stutzer, 2002; Diener and Seligman, 2004). In a recent cross-country study, for example, Helliwell concluded that people with the highest wellbeing 'are not those who live in the richest countries, but those who live where social and political institutions are effective, where mutual trust is high, and corruption is low' (Helliwell, 2003, quoted in Diener and Seligman, 2004).[11]

The discrepancy between cross-section and over-time country-level findings, meanwhile, is a paradox on its own. After minimum basic needs are met, respondents do not seem to factor-in long-term aggregate improvements in per capita income levels or in basic health and literacy standards when they assess their wellbeing. At the same time, at any point in time within individual countries, wealthier and healthier people appear to be happier than are poorer and less healthy people. Responses are also influenced by *changes* in both income and health status. And even if gains over time do not affect people's answers to happiness surveys, if life expectancy is longer and disease incidence lower, then these happier, wealthier and healthier people will have more years to enjoy their lives.[12] More generally, the paradox between cross-section and over-time data highlights how wellbeing surveys can provide novel information and insights. One example of wellbeing surveys informing unresolved policy questions is the evidence that they provide (albeit mixed) that distributional outcomes matter to welfare. Experimental, firm- and region-level studies find that inequities in rank or in the distribution of particular rewards can erode the positive gains accrued from income.[13] Based on US data from the General Social Survey (GSS), Blanchflower and Oswald (2004) find that relative income differences matter to happiness even when absolute income is held constant.[14] My research, based on the Latinobarómetro public opinion survey for Latin America in addition to the GSS for the USA, finds that respondents who perceive the distribution of income in their societies as being unfair are less happy, on average, than others. (This finding is merely suggestive, as the direction of causality is unclear – perhaps less happy people may be more likely to perceive disparities as being unfair.)[15]

Happiness surveys also show that macroeconomic conditions matter to wellbeing. Studies in the developed economies find that higher inflation and unemployment rates make respondents less happy, all else being equal.[16] My research with Pettinato corroborates these findings for Latin America, with high inflation being bad for happiness, and unemployment rates having a negative effect.[17] Most economists and policy-makers would be quite comfortable with the logical conclusion from these results – high inflation and unemployment are bad for wellbeing. Yet in a more recent study of the costs of regional unemployment rates in Russia, we find that respondents living in regions with higher unemployment rates are, all else held equal, happier than their counterparts in regions with lower rates (Eggers *et al.*, 2004). These results reflect the unusual nature of the Russian economy and its uneven transition to the market; a detailed interpretation is beyond the scope of this chapter. The point is that the policy implications, taken at face value, are that high unemployment rates are good for wellbeing in Russia. Few analysts would find that useful or conscionable. Again, this demonstrates that wellbeing surveys can provide important and novel information, but that caution is necessary when drawing direct policy conclusions.

More generally, there seems to be a relationship between subjective wellbeing and many of the questions that are central to the work of development economists, and to the challenges faced by developing country governments. These insights complement, but certainly cannot replace, the valuable information and benchmarks of progress provided by income-based measures. But they can be useful in helping to explain policy puzzles such as differences in societies' tolerance of inequality and unexpected interruptions to social and political stability.

The point of this chapter is to demonstrate how research on reported wellbeing or happiness can provide new insights into the complex process of development, how individuals fare, or perceive they fare, during that process, and how those (perceived) fates are affected by the process of integrating into the global economy.

With a view to shedding light on the discrepancy between economists' generally positive assessments of globalization's benefits for the poor, and the more negative ones that are typical of the general public, the study reviews the general approach taken in the economics of happiness and then presents some results from our studies in Latin America and Russia. In particular, our results highlight the extent to which vulnerability to falling into poverty, temporary poverty spells, and uneven rewards to different educational and skill cohorts can erode the overall benefits and possibly even the sustainability of the process.

What are standard measures missing?

An obvious question is what are our traditional measures missing, and does it matter to development outcomes? Respondents' assessments of their own welfare often highlight factors that are not captured adequately by income measures. Examples of these are real and perceived insecurity as rewards and incentives systems adapt to structural changes; the state of essential public services, such as education, health and crime prevention; and norms of fairness and justice. Even the trends that can be measured in income terms, such as poverty and inequality, have broader dimensions as well as dynamic elements that are not captured by traditional income-based measures, such as poverty headcounts and Gini coefficients.

While the gap between economists' and the public's assessments of the effects of globalization may be exaggerated by the vocal opponents or proponents of globalization, it may also reflect trends and broader dimensions of welfare that standard income measures are not capturing. Few development economists dispute the notion that growth is a necessary but insufficient condition for poverty reduction. It should come as little surprise, then, that measures of poverty and inequality that only capture income and expenditure trends do not provide a complete picture of the many and broad dimensions of poverty and inequality, much less to depict fully how they are affected by the complex process of globalization in the developing world. Gini coefficients, for example, are static, aggregate measures that do not change very much over time, and usually do not reflect distributional shifts among regions and/or among age or skill cohorts. Poverty headcount studies based on cross-section studies conducted every few years often miss short-term movements into and out of poverty.[18] Such movements are common in developing countries and create widespread insecurity among the middle classes as well as the poor.[19] This phenomenon is typically not highlighted in discussions of the links between globalization and poverty. Panel data that measure income mobility are better suited to capturing shifts among cohorts and short-term poverty movements. Yet these data are rare and only exist for a few developing countries.[20] Fixed international poverty lines, such as the US$1 or US$2 per day lines, meanwhile, while useful for intra-country comparisons, often have very little to do with public conceptions of poverty within particular countries and regions.

A related issue is public tolerance of inequality. Some years ago, in a classic article, Hirschman (1973) compared public tolerance for inequality in the development process to a traffic jam in a tunnel. He noted that, when one lane moves forward, it gives those in the stalled lanes hope, as it provides a signal or information about where they might be going in the future. But if only one lane continues to move and the others remain stalled for a long period of time, then those in the stalled lanes become frustrated and are tempted to revert to radical behaviour such as jumping the median strip. Note that the frustration and radical behaviour come after a period of growth and development (albeit unevenly shared), not at a time of overall stagnation. There is nothing in our standard measures of growth or inequality that allows us to gauge the timing of such frustration and how the tolerance threshold differs among societies. Nor can they tell us how, or even if, that threshold is affected by globalization-related phenomena, such as increased information flows, which can alter norms of equity and fairness and adjust consumption standards upwards.

A more important question, however, is whether this gap between economists' assessments and broader measures of wellbeing matters to *outcomes* in poor countries. Surely the bottom line or minimum requirement for economic development is economic growth? Will understanding broader, and surely more difficult to measure, dimensions of welfare contribute anything at all to the already complex challenges of economic development? And if there is merit in pursuing these broader concepts of welfare, how can we better measure what traditional tools do not capture? At the very least, the economics of happiness provides some new tools with the potential to contribute to answering these questions.

Evolution and relevance of happiness research

The study of happiness, or subjective wellbeing (terms that are used interchangeably), is a fairly new area for economists, although psychologists have been studying it for some time. Some of the earliest economists, such as Jeremy Bentham, were concerned with the pursuit of individual happiness. As the field became more rigorous and quantitative, however, much narrower definitions of individual welfare, or utility, became the norm. In addition, economists have traditionally shied away from the use of survey data because of justifiable concerns that answers to surveys about individual preferences, and reported wellbeing, are subject to bias from factors such as the respondents' mood at the time of the survey and minor changes in the phrasing of survey questions, which can produce large skews in results.[21] Thus traditional economic analysis focuses on actual behaviour, such as revealed preferences in consumption, savings and labour market participation, under the assumption that individuals rationally process all the information at their disposal to maximize their utility. In recent years, however, the strictly rational vision of economic decision-making has come under increasing scrutiny. One important innovation is the concept of bounded rationality, in which individuals are assumed to have access to limited or local information, and to make decisions according to simple heuristic rules rather than complex optimization calculations.[22] A more recent trend has been the increased influence of behavioural economics, which supplements the methods and questions of economists with those more common to psychologists.[23]

Economists who work in the area broadly define happiness and/or subjective wellbeing as satisfaction with life in general. The three sets of terms are used interchangeably in most studies. Most are based on a very simple set of survey questions that typically ask respondents 'how satisfied are you with your life?' or 'how happy are you with your life?' Answers to these open-ended questions obviously incorporate psychological as well as material and sociodemographic factors. Critics used to defining welfare or utility in material or income terms bemoan the lack of precise definition in these questions. Yet the economists who use these surveys emphasize their advantages in making comparisons across cohorts of individuals – in which they find a surprising consistency in the patterns of responses both within and across countries – rather than in evaluating the actual happiness levels of specific individuals. In addition, they find that the events that are known to have documented effects on happiness – such as illness, marriage and divorce – are very much reflected in over-time responses to happiness surveys.[24] All of this suggests that errors pertaining to idiosyncrasies in the way individuals answer these surveys are of relatively small magnitude, and do not appear to affect aggregated responses. Psychologists, meanwhile, find a significant degree of 'validation' in subjective wellbeing surveys, wherein individuals who report higher levels of happiness in fact smile more, as well as meeting several other psychological measures of wellbeing.[25]

Despite the attention economists have paid to happiness research in recent years, the Easterlin paradox remains something of a puzzle. With economic growth and related improvements in living standards, such as reduced infant mortality and increased life expectancy, people are better-off by any number of definitions. Yet these objective improvements do not seem to be captured in people's responses to the happiness questions. Easterlin explained this apparent anomaly by suggesting that absolute income levels matter up to a certain point – particularly when basic needs are unmet – but after that relative income differences matter more. Decades earlier, Pigou (1920: 53) reasoned that, because the rich derive much of their satisfaction from their relative, rather than absolute, income, satisfaction would not be reduced if the incomes of all the rich were diminished at the same time, justifying redistributive taxation.

As noted above, an additional explanation – which Easterlin and others have explored in later work – is that people's norms and expectations also adapt upwards with economic progress. Thus the expected gains of income on happiness are mediated by the rising aspirations that accompany the income gains. Later empirical studies support this proposition, showing a much stronger relationship between income and happiness at the lower end of the income scale.[26] The most extreme view of adaptation, meanwhile, is the psychologists' set point theory. Along the same vein, most country-specific poverty lines adapt upwards as per capita GDP rises over time. Diener (1984) and colleagues based their analysis on two samples: a cross-section of 18,000 college students in thirty-nine countries (primarily developed economies), and a ten-year (1971–81) longitudinal study of 4,942 adults in the USA. They found a stronger relationship between income and happiness at the lower end of the income scale, and a flatter one at higher incomes that are well above subsistence levels. Across countries, they found a moderate relationship between affluence and life satisfaction. Their findings highlight the importance of relative differences, but do not discount the importance of absolute levels of income for happiness, even after people have incomes above the subsistence level.

Easterlin's proposition about changing reference norms is supported by Merton's (1957) well-known sociological work, based on Stouffer's analysis of the effects of promotions among US military men. Stouffer found that soldiers (infantrymen), for whom promotion was quite rare, were much more satisfied with promotions when they occurred than were air force personal, for whom upward mobility was the norm rather than the exception.[27] The importance placed on relative income and reference groups can lead to an ever-rising bar of perceived needs. In a classic work, *The Theory of the Leisure Class*, Veblen (1967) posits that, in affluent societies, spending – and in particular conspicuous consumption – becomes the vehicle through which people establish social position. Several decades later, Schor (1998) cited repeated surveys showing that more than half of the population of the USA, the richest population in the world, say they cannot afford everything they really need. The importance of relative income differences to perceived wellbeing, meanwhile, depends in part on social norms, which vary among societies.[28]

The concept of changing reference norms and aspirations is also relevant to the economic development process in poor countries. An anecdotal example comes from Peru in the 1960s. Richard Webb of the Instituto Cuanto interviewed a random sample of urban workers. Respondents of many different income levels were asked how much more income than they currently earned would they need to 'live well'. The vast majority of respondents, across all income levels, responded that they would need twice as much as they currently earned.[29]

Increasing income levels and economic growth is a necessary if not sufficient condition for development. And the process can be quite uneven. Thus, aspirations and reference norms may adapt upwards well before significant sectors of society see the benefits. The integration of global markets, meanwhile, has been accompanied by a marked increase in the availability of global information, including information regarding living standards within poor countries and beyond their borders. Many developing countries, particularly in Latin America, have large gaps between the very wealthy and the rest of society, gaps that pre-date the current wave of global integration. Such inequalities are often exacerbated by integration into global markets, particularly when skilled labour benefits disproportionately from the process and increases wage gaps across sectors, as has been the case in Latin America.[30] Narrowing such gaps, which usually requires an expansion of the pool of skilled labour, is likely to take an order of magnitude longer than it does to increase awareness about them. While the concepts of rising aspirations and relative deprivation are not at all new to the study of development economics, they are not incorporated well into our existing measures of progress. Yet in the end, they may have significant effects on individuals' assessments of their welfare, and even on their definitions of poverty.

The economics of happiness in developing countries: an initial exploration

There are very few studies of happiness in the developing economies, and to the extent that they exist, tend to cover individual countries. As far as we know, our study of reported wellbeing in Latin America and Russia is the first such study in a large sample of developing countries, allowing us to draw more general, if tentative, conclusions.[31] Most of the countries in our sample were also in the process of increasing their integration into the world economy. This was certainly the case in Peru and Russia, the two countries where we conducted the most detailed analyses. We cannot, of course, establish definitively the effects of integrating or globalizing on individuals' welfare in these countries – in no small part because of the difficulty of defining globalization precisely, and in part because of the absence of a counterfactual scenario; in other words, without evidence on what would have happened had the countries not opened up. At the same time, we were able to incorporate some relevant aspects of the integration process, such as widening gaps between the returns to skilled and unskilled labour (in the case of Latin America), and increased access to global information and communications, into our analysis.

Our work began as an attempt to better understand the determinants of income mobility (a proxy for the distribution of opportunities) and movements into and out of poverty in countries that are opening their economies.[32] We expanded our approach to examine the role of perceptions of past and future mobility, linking data on subjective wellbeing to detailed over-time data on income mobility for the same respondents. We introduced this approach to data collection in Peru, and were subsequently able to apply it to data from Russia. Unfortunately, we did not have similar mobility data for the larger Latin America-wide sample, which is a large cross-section survey of respondents in seventeen countries.[33] In Peru, we reinterviewed a sub-sample (500) of respondents in a large, nationally representative panel for 1991–2000, and asked a number of questions about their perceptions of their past progress and for their prospects. We repeated this perceptions survey three years in a row. For the region-wide sample, we relied on cross-section data on income and other sociodemographic variables, as well as perceptions.

Our survey data allowed us to explore, albeit *indirectly*, the links between policy reforms related to global integration, and poverty, mobility and wellbeing. As mentioned above, it is notoriously difficult to disentangle the effects of globalization-related trends and policies on poverty from those of other structural or pre-existing trends. At the same time, there is little doubt that the economic transitions in these countries had effects on poverty and inequality, and created new winners and new losers. Accepting the limitations, our results strongly support the important role (highlighted in the literature above) that relative income differences, reference norms and other non-income factors play in determining wellbeing in the advanced economies. Indeed, more generally, we found that the determinants of happiness are very similar in the developing economies to those in the advanced economies.

Measurement error and other concerns

Prior to reviewing our results, it is necessary to mention possible sources of measurement error in both our panel and perceptions data. Panel data on income mobility are rare, as it requires following individuals over a prolonged period of time. And the most obvious drawback of panel data is its scarcity. There is a paucity of such data, in large part because of the expense of generating it. There are only a small number of nationally representative panels for developing countries. Even then, the data are rarely without flaws. Respondents move, leading to attrition and possible bias. Attrition tends to be greatest at the tails of the distribution, as the wealthiest respondents tend to move to better neighbourhoods, and the poorest ones move in with others or return to their places of origin.[34] In addition, as respondents in the panel age, they may also become less representative of the population as a whole. Another problem with longitudinal data is accounting for error in reporting income, a problem gravely aggravated by policy shocks such as devaluations and/or high levels of inflation. People who are self-employed or employed in the informal sector have a difficult time in estimating any sort of monthly or annual salary, in part because their income fluctuates a great deal. Thus, expenditure data are more accurate than income data for samples with large numbers of self-employed and/or informal sector workers and agricultural workers. It is also more difficult to under- or mis-report expenditures. Yet expenditure data miss part of the story, particularly at the upper end of the distribution, and do not capture volatility in income flows, as people tend to smooth their consumption where possible by dis-saving.

Adding perceptions data to longitudinal data has benefits, but creates its own set of methodological problems. As discussed above, happiness questions are open-ended. While they are not very useful in measuring the wellbeing of particular individuals, there is surprising consistency in the patterns of responses both within and across countries. Psychologists find that a number of wellbeing indicators validate how most individuals respond to happiness or life satisfaction surveys. The questions are usually based on a four-point scale – ‘how happy or satisfied are you with your life’, with two answers above and two below neutral. The correlation coefficient between happiness and life satisfaction questions is approximately 0.50, and the microeconometric equations have almost identical forms.[35] The data are most useful in the aggregate, as how an individual answers a question on happiness, for example, can be biased by everyday events. Thus the same person could answer such questions quite differently from day to day or year to year. The simple correlation from a regression of happiness in year two on happiness in year one was 0.2734 for our Russia sample, suggesting a significant amount of fluctuation in happiness levels. (Given the highly volatile economic context in Russia during the period, this correlation is probably lower than the average for other countries.)

Accuracy in reporting is another major issue. Responses can be biased by the phrasing or the placement of questions in the survey. Another problem is bias introduced by different or changing reference norms. If you ask people how much income they would need to make ends meet, and/or to be happy, they usually base their answers on their existing income and increase it by some proportion, regardless of the absolute level. Alternatively, people base their answers on others in their community or others 'like themselves'. When we asked people in our Peru survey to compare themselves with others in their community and then with others in their country, we found much more consistency in how respondents compared themselves to those in their community than to those in their country, which is a much more vague reference point. Accepting that there is a large margin of error in both kinds of data, our results provide information that static income data alone would not. Caution is necessary in interpreting the results, and we are hopeful that they are not merely artefacts of measurement error.

Poverty and mobility trends in two 'globalizing' economies: Peru and Russia

Both Peru and Russia underwent dramatic economic transitions, based on the implementation of market-orientated reforms and integration into the world economy during the 1990s. The following review of trends in poverty and inequality in each country, while cursory, provides the contextual background for the discussion of the results of the wellbeing surveys.

In Peru, the combination of inflation and macroeconomic collapse in the late 1980s and then the stabilization policies necessary to halt hyperinflation and unsustainable fiscal deficits in 1990 resulted in an unprecedented increase in poverty. The poverty headcount went up from 12.7 per cent of the population in 1985 to 54.7 per cent at the time of stabilization.[36] As is usually the case, the poor were the least equipped to protect themselves from hyperinflation and from the disruptions caused by stabilization. Yet the counterfactual scenario – that is, the absence of stabilization policies – may well have led to even greater poverty increases. The poverty rate fell to a low of 41 per cent by the mid-1990s as a result of high levels of growth. It then increased again to almost 50 per cent by the year 2000, in part a result of a worldwide economic slowdown and in part related to economic adjustments necessitated by the Fujimori government's excessive pre-electoral spending (see Figure 10.1).

In Russia, poverty was on the rise, and health indicators were declining (if not well documented) well before transition, as the centrally led economy faltered. The most dramatic changes, though, occurred during the post-1990 turn to the market. The poverty headcount rose from roughly 22 per cent in 1994 to a height of 50 per cent during the aftermath of the 1998 devaluation, and then fell to closer to 40 per cent in the subsequent years (see Figure 10.2).

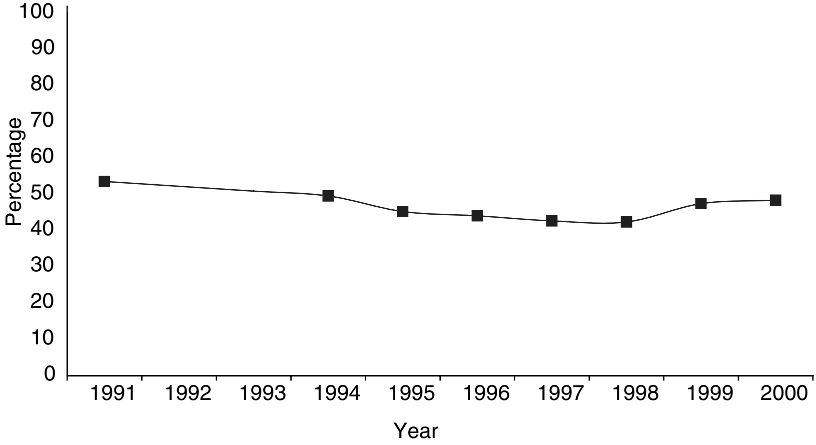

Figure 10.1 Poverty rate in Peru, 1991–2000

Sources: Encuesta Nacional de Hogares Sobre Medición de Niveles de Vida (ENNIV), the 1991 Peru Living Standards Survey (PLSS), and Encuesta Nacional de Hogares (ENAHO) from 1998.

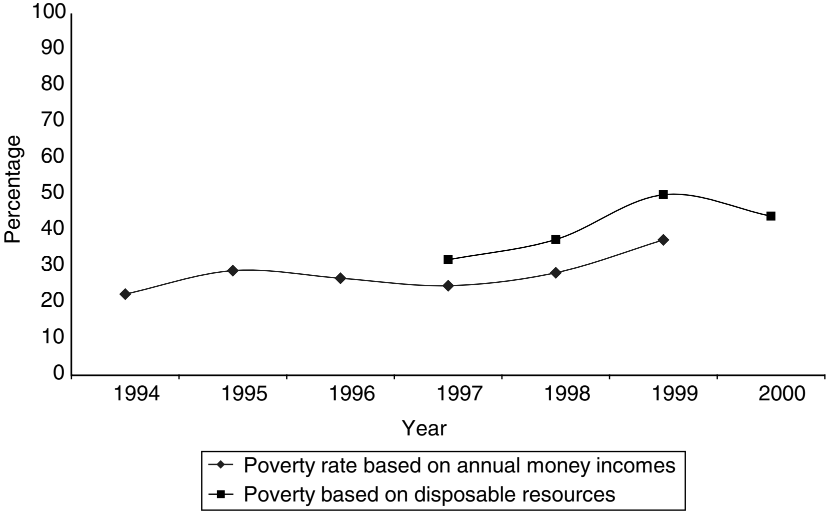

Figure 10.2 Poverty rate in Russia, 1994–2000

Source: Yemtsov (2005).

In both cases, the standard measurement error problems in assessing poverty rates correctly were compounded by the shocks to purchasing power resulting from sharp devaluations – in 1991 in Peru and 1998 in Russia – shocks that had differential effects across cohorts and sectors. Thus these figures are not indisputable; there are higher and lower estimates for the same years for the same countries. Regardless, even lower end estimates for these rates are high by most countries' standards.

The poverty picture in both countries is compelling on its own. In addition, over-time data on income mobility depict a tremendous amount of movement up and down the income ladder and into and out of poverty. In a comparison of relative mobility rates, we found that a higher percentage of respondents went from 'rags to riches' – or from the bottom to the top quintile in a ten year period in Peru (5 per cent) than in a similar period in the USA (1 per cent), for example.[37] Yet a surprising 11 per cent of respondents in the middle of the distribution (quintile 4 in Peru) fell back all the way to the bottom quintile during the same period, which is analogous to falling from the middle class into extreme poverty (see Table 10.1).

Table 10.1 Relative economic mobility matrices

1978 Q	**USA, 1979–89**					
	1989 Q Bottom quintile	**II**	**III**	**IV**	**Top quintile**	**Total**
Bottom quintile	**61**	24	9	5	1	100
II	23	**33**	28	14	3	100
III	8	25	**30**	26	11	100
IV	5	13	23	**33**	26	100
Top quintile	3	5	11	23	**59**	100
Total	100	100	100	100	100	100

1991 Q	**Peru, 1991–2000**					
	2000 Q Bottom quintile	**II**	**III**	**IV**	**Top quintile**	**Total**
Bottom quintile	**45**	25	19	6	5	100
II	25	**25**	23	14	13	100
III	16	23	**22**	20	19	100
IV	11	18	18	**32**	21	100
Top quintile	3	9	18	28	**42**	100
Total	100	100	100	100	100	100

Sources: Mishel *et al*. (1999) for the USA; and Graham and Pettinato (2002a) for Peru.

Mobility in Russia during a shorter, five-year period (1995–2000) is equally notable, with 12 per cent of those in the bottom quintile moving all the way to the top quintile, and 14 per cent of those in the fourth quintile moving down to the first, or well below the poverty line (see Table 10.2). An important caveat in comparing the two, however, which is noted above, is that the Peruvian data is on expenditure, which fluctuates much less, while the Russian data, which is on income, fluctuates much more and is rife with problems of under-reporting. Even accounting for a significant degree of measurement error, these data suggest a remarkable amount of movement into and out of poverty. While some of these changes might have happened in the absence of policy changes related to these countries' integration into the world economy, it is hard to imagine that the overall poverty picture is independent of their effects.

Looking at income sectors more broadly, it is evident that the rewards from the reform process were shared differentially.[38] In Peru, the losers were not always the poorest. In many instances the poor gained from improved (and often targeted) public health and education services, and from the increased access to other services, such as telephones, resulting from privatization. Many in the middle sectors, meanwhile, typically had completed secondary education but had not attended university, and depended heavily on the public sector and public enterprises for employment. With the opening of trade and capital markets, the skilled (that is, those with a university or technical education), who also tended to be at the higher levels of income distribution, made the greatest gains, while public sector jobs became fewer in number and less desirable. Thus those in the middle tended to fare less well, at least in relative terms, while the skilled and wealthy fared best in both relative and absolute terms.[39]

In Russia, the collapse of the centrally planned economy and virtually unregulated privatization, among other trends, created entirely new cohorts of big winners and big losers, including new poverty among highly educated individuals who had previously worked in large defence and other public enterprises, and a small but highly visible cohort of new 'millionaires'.[40] These broad

Table 10.2 Relative economic mobility matrices, Russia, 1995–2000

1995 Q	**2000 Q Bottom quintile**	**II**	**III**	**IV**	**Top quintile**	**Total**
Bottom quintile	**33**	27	16	13	12	100
II	25	**28**	20	16	10	100
III	19	19	**25**	21	15	100
IV	14	15	23	**25**	23	100
Top quintile	9	11	16	25	**40**	100
Total	100	100	100	100	100	100

Source: RLMS Round 6 and Round 9; author's calculations using equivalized household income in 1993 adjusted roubles.

trends, as well as less easily documented differentials between winners and losers at the local and micro level, are reflected in the results of our perceptions surveys (discussed below). The extent of new losses and gains is in part reflected in inequality trends, as measured by the Gini coefficient, in both countries. In Peru, where inequality was already quite high, the Gini increased slightly, from 0.46 in 1991 to 0.49 in 2000. In Russia, where inequality was unusually low prior to the transition (well below OECD standards), the Gini went up from 0.42 in 1994 to 0.44 in 2000.[41] The results of our surveys of subjective wellbeing during these transition periods are useful in helping to understand the effects of all of these trends on the welfare of different cohorts in both countries. In addition, in a very indirect manner, they may help us better to understand who were the winners and losers, or at least suggest a slightly different definition of winners and losers than does income data alone.

Perceptions of wellbeing in 'globalizing' economies

Our most significant and surprising finding in Peru was that almost half of the respondents with the most upward mobility reported that their economic situation was negative or very negative compared to ten years before (see Figure 10.3). We conducted a similar analysis based on comparable data for Russia, and found an even higher percentage of frustrated respondents – or 'frustrated achievers' as we now call them (see Figure 10.4).[42]

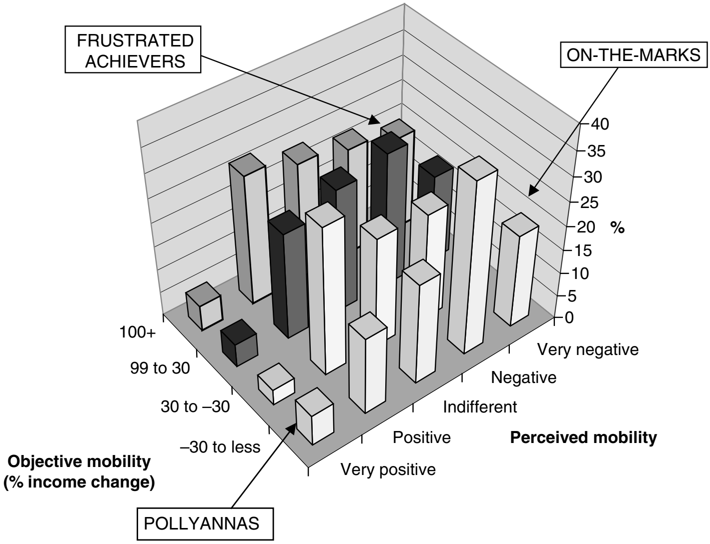

Figure 10.3 Long-term perceived mobility versus 1991–2000 income mobility: Peru, 2000
Source: Graham and Pettinato (2002a).

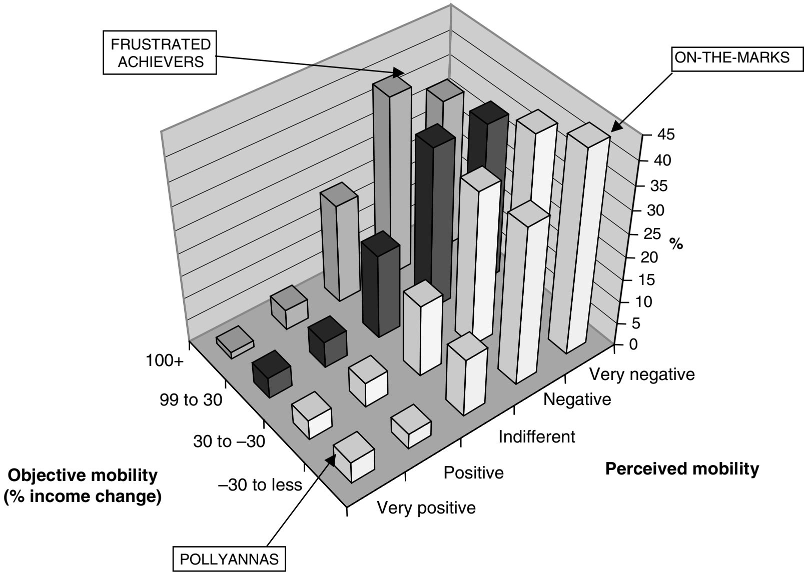

Figure 10.4 Perceived past mobility versus 1995–9 income mobility: Russia, 1999
Source: Graham and Pettinato (2002a).

A closer look at these frustrated achievers (FAs) shows that they have average or near-average income (and therefore are not the poorest in the sample), and that they are more urban and slightly older on average than non-frustrated respondents with upward mobility. There are no significant gender or educational differences.[43] Our FAs scored lower on a whole host of perception questions, such as their perceived prospects of upward mobility, and their positions on a notional economic ladder. In keeping with the direction of these findings, the FAs also had a greater fear of being unemployed in the future. In addition, the Russian FAs were more likely to want to restrict the incomes of the rich, and were less satisfied with the market process and with democracy (we did not have the same questions in the original survey for Peru).[44] In Peru, the likelihood of having upward mobility and being frustrated is related negatively to initial income levels.[45] In other words, the FAs started from lower income levels, on average, even though they were not the very poorest in the sample at the time they answered our survey. This is not surprising, as even large percentage increases in their incomes will seem insufficient to reach the levels of wealthier groups. The FAs were also more likely to be urban, and therefore more informed about the lifestyles of others, including those of the very wealthy.

What explains these frustrations? Relative income differences could certainly be a plausible explanation. Both Peru and Russia have high degrees of inequality. The FAs were more likely to score lower on the notional economic ladder in both surveys. In Peru, the FAs were more likely to compare their situations negatively to others in their community and their country, with slightly more negative responses when the country rather than the community was the point of reference (this latter question was not in the Russia survey). This suggests that respondents are aware of both local and country-level inequalities. A lack of adequate social insurance, and insecurity could be another explanation. As noted above, the FAs had a greater fear of unemployment than non-frustrated achievers. Thus, even though they are doing well by objective income measures, they perceive that there is no guarantee of stability or of maintaining their levels of earning. This is not surprising, given that both surveys were conducted in very volatile economic contexts, and the objective mobility data reveal a remarkable degree of vulnerability, as discussed above.

We explored whether the frustrated achievers suffered more from this volatility, which in turn might drive some of their frustrations. In Peru, the FAs have less volatility in their income trajectory, as measured by the coefficient of variation, a puzzling result if uncertainty or volatility is an explanation for the frustrations. In Russia the coefficient of variation is higher, which seems a more intuitive finding. It is possible that, while our frustrated achievers may be concerned about inequality and unemployment, they may also view income variance as a reflection of new opportunities, at least in Peru (Clark, 2003).

Studies comparing Europe and the USA find that tolerance of inequality varies across societies.[46] The studies show that in some societies, as in the USA, inequality seems to have little, if any, effect on wellbeing, in contrast to its larger negative effects in European countries. At the same time, cross-country happiness studies consistently rank countries with strong safety nets and social welfare systems, such as the Nordic countries, at the top of worldwide rankings.[47] But, the same pattern does not hold in the developing economies. This may be because universal welfare systems are rarely the norm in these developing countries. Thus there may be a slightly higher tolerance for volatility and insecurity, particularly in those countries with large informal sectors. This could explain our findings on variance in Peru.

The fact that most of the FAs were at mean levels of education is relevant to the discussion of volatility versus opportunity. As noted above, with the opening of trade and capital markets in the 1990s in Latin America, those with higher levels of education are gaining high marginal returns compared to the rest of society, while those with secondary education are seeing decreasing marginal returns compared to those with only primary education.[48] Our mobility matrices suggest that some of those in the middle are experiencing drops into extreme poverty, and may be becoming a new sector of 'vulnerable' near poor. In some cases, the poor in fact gained during these transitions, at least relative to those in the middle. Broader cross-country studies of the effects of trade opening on poverty meanwhile yield very mixed results.

These depend a great deal on the nature of the trade opening and on the structure and skill mix in the tradable and non-tradable sectors prior to the opening.[49] At best, the picture is complex. Identifying the winners and losers in the globalization process is difficult, as there can be winners and losers among both the poor and the middle sectors.

Finally, it is quite possible that some of the frustrations we found were driven by individual character traits rather than by economic and other variables. There is probably some percentage of every sample that will always be negative or unhappy, regardless of objective conditions. This led us to ask whether our population samples were significantly different from other population samples. Unfortunately, we do not, at this point, have similar income mobility and perceptions data for a broader sample of countries, which would allow us to compare the percentage of frustrated achievers across countries. But, we were able to explore the broader question of whether the determinants of happiness differ in the developing economies from those in the advanced industrial economies. We compared the determinants of happiness in Latin America and in Russia with those of the USA. For the USA, we used the pooled data for 1973–98 from the General Social Survey (GSS). For Russia, we used the most recent available survey (2000) from the Russian Longitudinal Monitoring Survey (RLMS). For Latin America, we relied on the 2001 Latinobarómetro survey because it is the one year for which we have variables for both self-reported health status and for being a minority, which makes it comparable to the US and Russia surveys (see Tables 10.3, 10.4 and 10.5).

Table 10.3 Happiness in Latin America, 2001 (dependent variable: happiness)

Independent variables	**Coef.**	**z**
Age	−0.025	−4.21
Age squared	0.000	4.72
Male	−0.002	−0.07
Married	0.056	1.63
Log wealth index	0.395	10.56
Years of education	−0.003	−0.64
Minority	−0.083	−2.49
Student	0.066	1.01
Retired	−0.005	−0.06
Homemaker	−0.053	−1.04
Unemployed	−0.485	−7.54
Self-employed	−0.098	−2.33
Health (self-reported)	0.468	24.58
Pseudo R^2	0.062	
Number of observations	15 209	

Note: * Ordered logit estimation; country dummies included but not shown.

Source: Latinobarómetro (2001); author's calculations.

Table 10.4 Happiness in Russia, 2000 (dependent variable: happiness)

Independent variables	**Coef.**	**z**
Age	−0.067	−7.42
Age squared	0.001	7.15
Male	0.152	2.80
Married	0.088	1.40
Log equivalent income	0.389	11.48
Education Level	0.015	0.96
Minority	0.172	2.46
Student	0.199	1.59
Retired	−0.378	−3.97
Housewife	0.049	0.33
Unemployed	−0.657	−6.51
Self-employed	0.537	2.23
Health index	0.446	3.82
Pseudo R^2	0.033	
Number of observations	5 134	

Note: * Ordered logit estimation.

Source: Graham *et al*. (2004).

Table 10.5 Happiness in the USA, 1972–98 (dependent variable: happiness)

Independent variables	**Coef.**	**z**
Age	−0.025	−5.20
Age squared	0.038	7.53
Male	−0.199	−6.80
Married	0.775	25.32
Log income	0.163	9.48
Education	0.007	1.49
Black	−0.400	−10.02
Other race	0.049	0.59
Student	0.291	3.63
Retired	0.219	3.93
Housekeeper	0.065	1.66
Unemployed	−0.684	−8.72
Self-employed	0.098	2.29
Health	0.623	35.91
Pseudo R^2	0.075	
Number of observations	24 128	

Note: * Ordered logit estimation; year dummies included but not shown.

Source: GSS data.

We find a remarkable degree of similarity: there were similar age, income, education, marriage, employment and health effects.[50] In all contexts, unemployed people were less happy than others. Self-employed people, meanwhile, were happier in the USA and in Russia on average, while in Latin America, they were less happy: in the USA, self-employment is a choice, but in Latin America the self-employed are often in the informal sector by default. Another difference is that women were happier than men in the USA, while in Russia men were happier than women (because of disparities in status?), but in Latin America there was no gender difference. Blacks are less happy than other races in the USA, and similarly, those who identify as minorities in Latin America are less happy. In contrast, minorities living in Russia are happier than ethnic Russians.

Even these subtle differences in the determinants of reported wellbeing suggest that its analysis highlights policy issues, such as opportunities for stable employment and gender rights, which are (or should be) on the policy agendas of many developing countries. The findings for the advanced industrial economies suggest strongly that these factors matter to wellbeing. And while these issues often enter the public debate as a result of pressure from special interests such as unions or NGOs, it is novel to find strong backing for them in individual assessments of welfare. Taking our analysis a step further, we found that, in both Latin America and Russia, happier people were more likely to support market policies, to be satisfied with how democracy was working, and to prefer democracy to any other system of government. A cross-canton study in Switzerland by Bruno Frey and Alois Stutzer meanwhile found that people who participate in direct democracy are happier than those who do not, all else being equal (Frey and Stutzer, 2002). While we do not have similar information on respondents' voting patterns, our results do suggest a virtuous circle of sorts between happiness and support for democracy (even though we cannot establish the direction of causality).

Happier people, on average, had higher prospects of their own and their children's future mobility; were more likely to believe that the distribution of income in their country was fair; placed themselves higher on a notional economic ladder; and had lower fear of unemployment.[51] In contrast, the negative perceptions of our frustrated achievers in Peru and Russia are correlated with lower life satisfaction (happiness) scores; lower scores on a notional societal economic ladder (compared to non-frustrated respondents of comparable income levels); lower perceived prospects of upward mobility; a higher fear of unemployment; and less satisfaction with market policies and a lower probability of preferring democracy as a system of government.

We are not aware of surveys in the OECD economies that take our approach and compare objective trends in income mobility with reported trends. However, there are some studies in the USA and Europe that link people's perceptions about mobility – such as perceived prospects of upward mobility – with voting behaviour and views about redistribution.[52] Most of these studies suggest that societies with a widely held faith in prospects for upward mobility are more tolerant of income inequality than those where social mobility is more limited. Our preliminary analysis suggests that there may be a similar relationship between views about upward mobility and tolerance of inequality. We examined responses to several questions related to redistribution in the 2001 and 2002 Latinobarómetro. A question in the 2001 survey asks respondents to place themselves on a nine-point scale, where one is preferring more freedom and more money and nine is preferring more rules and more equality. Respondents who had higher prospects of upward mobility scored lower on the scale and claimed to be less likely to prefer equality and regulation.[53] This finding is similar to findings for the USA, yet in contrast to the USA, the Latin American respondents who supported more equality were, on average, also happier.

Rather surprisingly, wealthier people were more likely to support more rules and more equality (which may also explain the correlation with higher happiness levels). We found consistent results on wealth in a question in the 2002 survey, which asked respondents if taxes should be lower even if social welfare spending suffers. A surprising 23 per cent of respondents opted for the 'strongly agree' response, and 44 per cent 'agree'. As in the case of supporting more equality in 2001, those with higher levels of wealth and education (and respondents over age 33) were less likely to agree with low taxation at all costs.[54] At least some of these results reflect Latin Americans' mistrust of the state's ability to redistribute fairly and to provide services to the poor rather than widely held beliefs about prospects for upward mobility – only 13 per cent of Latin American respondents appear to believe that income distribution is fair or somewhat fair.[55] To the extent that there is modest support for redistribution, it seems to be among wealthier rather than poorer groups. The poor typically receive fewer benefits from state spending than do wealthier groups in the region.

Concerns about inequality may also respond to changing reference norms related to globalization. Increased access to global information, via the media and the internet, has accompanied increasing economic integration in the region since the 1990s. While our information on these trends is limited, we do have data on respondents' ownership of televisions and radios as well as access to the internet. Controlling for the usual sociodemographic variables, we find that those respondents with greater access to the media and the internet are more likely to think that the distribution of income in their country is unfair, are more concerned about corruption, and are more likely to express willingness to participate in a political protest.[56] While these findings are at best suggestive, it is certainly plausible that awareness of inequality is heightened and/or that reference norms adapt upwards as more information about the living standards of others, both within and beyond one's national borders, becomes readily available.

Somewhat surprisingly, we found that a remarkably similar percentage of respondents in the USA and Latin America thought that their children would live better than they did (57 and 58 per cent, respectively). In contrast, far fewer Latin American respondents than US respondents felt that they lived better than *their* parents did.[57] Views about the causes of poverty were also remarkably similar (even though the questions are not fully comparable). In the USA, 36 per cent of respondents said that lack of effort on the part of the poor themselves is a 'very important' cause of poverty, while 43 per cent said that it is 'somewhat important' and 21 per cent said 'not important'. In Latin America, 36 per cent of respondents said that poverty was a result of lack of effort on the part of the poor themselves, while 63 per cent of respondents said it was the result of bad circumstances. Our results suggest that Latin Americans still have a remarkable amount of faith in individual effort and prospects for getting ahead.[58] Some of this faith is, no doubt, based on realistic assessments by respondents, and the awareness that their children are likely to have, at the least, access to more and better quality education than they did. Some reflect hope and expectation as much as anything else. For our smaller Peru sample, we found that some of the respondents who assessed their own situation more negatively than was warranted by objective income measures still assessed their children's prospects in a positive light.

Those with higher prospects for upward mobility were also more likely to favour market policies, to support democracy over any other system of government, and to place themselves higher on the notional economic ladder.[59] In contrast, our frustrated achiever respondents in Peru and Russia, who on average had higher fear of unemployment and lower POUM (prospect of upward mobility) scores, tended to be less supportive of market policies and of democracy.[60] Our findings yield notable public frustration, which is linked to concerns about income differentials, unemployment and vulnerability to poverty rather than with absolute poverty. They also suggest that respondents' concerns about relative income differences may be heightened with increasingly available information about the wealth and lifestyles of others, both in their country and beyond, as increased media and internet access have made global information much more readily available to the average citizen. Frustration also seems to be linked to reduced support for markets and democracy. Our findings do not, however, suggest that there is widespread public support for redistribution. If anything, they suggest that the public's faith in the state's capacity to redistribute fairly is quite minimal, and that it is weakest among the poor.

Causality conundrums

While the frustrations and unhappiness that we find are indeed linked to policy-relevant questions, the direction of causality is not fully clear. We do not know whether policies and/or environments drive the frustrations, or underlying character traits (such as lower innate levels of happiness) drive more negative assessments of policies and environments. In other words, it may well be that happier people assess whatever policy environment they live in more favourably, and that more frustrated or unhappy people are more likely to be pessimistic about the future and concerned about relative income differences or insecurity.

At least some of the explanation for patterns in reported wellbeing lies in character traits. One of our studies finds that only 3 per cent of the variation in happiness is explained by socioeconomic and demographic variables, the rest being either behavioural or error driven.[61] Yet there is also an explanatory role for factors that policy can influence, such as income inequality, macroeconomic volatility, and large gaps in rewards to different education and skill cohorts. In a very recent study, we tried to get a better understanding of the interaction between contextually driven attitudes and behaviourally driven ones, as well as the channels of causality. We conducted an additional analysis based on Russian data for which we had observations on both happiness and income at two points in time, as well as on a number of perceptions variables. We found that these behavioural traits have a role in explaining differences among individuals' performances and outcomes.

As reported in Table 10.6, we found that happier people earn more income in later periods, on average, than less happy people.[62] Our method of analysis entailed calculating the residual or unexplained happiness for each respondent in the first period – that is, the happiness that was not explained by the usual socioeconomic and demographic variables. We posit that this must be close to the behavioural component of reported happiness. We included that residual as an independent variable with second-period income as the dependent variable. Controlling for first-period income, we found that our residual had positive and significant effects on second-period income. We also found that happier people were healthier in future periods.

Accepting that there is a large margin of error and/or correlated error in this analysis, our results suggest that happier people seem to earn more income, perform better in the labour market, and are healthier. Psychologists attribute traits such as positive outlook and high self-esteem (so-called positive cognitive bias) to happier people. It is not surprising that these traits also contribute to productivity and health. And while not being statistically significant, our findings suggest that the correlation between happiness and future income was stronger for those at lower levels of income, while the role of first-period income was more important for future income for those at higher levels of income (see Table 10.6). A positive outlook and high self-esteem may be valuable labour market assets for those with fewer assets or less income, particularly for those who provide services. In other words, happiness may matter more to the future income of the poor than of the rich.

Indeed, it is plausible that some of what we find is explained by people's abilities to forecast or predict their future income, and thus first-period attitudes merely reflect people's knowledge of the future.[63] The highly unstable

Table 10.6 The effects of happiness on income in Russia, 1995–2000 (dependent variable: Log equivalence income, 2000 – OLS)

Independent variables	**a**		**b**		**c**	
	coef.	***t***	**coef.**	***t***	**Coef.**	***t***
Age	−0.013	−3.00	−0.013	−2.97	−0.015	−3.25
Age squared	0.000	3.18	0.000	3.15	0.000	3.52
Male	0.010	0.42	0.010	0.42	0.000	−0.02
Married	0.205	7.84	0.205	7.84	0.205	7.84
Education level	0.030	4.51	0.030	4.51	0.030	4.44
Minority	0.121	3.98	0.123	4.03	0.122	4.00
Student	−0.034	−0.34	−0.030	−0.31	−0.037	−0.38
Retired	−0.191	−4.85	−0.190	−4.83	−0.166	−4.18
Housewife	−0.249	−3.90	−0.249	−3.90	−0.239	−3.73
Unemployed	−0.345	−8.16	−0.344	−8.12	−0.343	−8.07
Self-employed	0.142	1.46	0.141	1.46	0.128	1.33
Health index	0.060	1.11	0.059	1.09	0.056	1.04
Log equiv income 95	0.242	18.11	0.243	18.12	0.224	15.69
Log equiv income 95, poor**	*	*	*	*	0.009	2.60
Log equiv income 95, rich**	*	*	*	*	0.018	4.36
Unexplained happiness, 95***	**0.030**	**2.64**	**0.063**	**2.32**	**0.027**	**2.38**
Unexp. Happiness, 95***, 2nd quint.	*	*	**−0.044**	**−1.14**	*	*
Unexp. Happiness, 95***, 3nd quint.	*	*	**−0.036**	**−0.95**	*	*
Unexp. Happiness, 95***, 4th quint.	*	*	**−0.063**	**−1.71**	*	*
Unexp. Happiness, 95***, 5th quint.	*	*	**−0.023**	**−0.65**	*	*
Constant	5.833	36.35	5.823	36.19	5.936	34.62
No. of observations	4457		4457		4457	
Adjusted *R*-squared	0.134		0.133		0.152	

Note: *omitted; ** 'poor' is defined as bottom 40% of the income distribution in 1995; 'rich' is the top 20%; *** the residual of basic happiness 1995 regression. **Regression a:** no income quintile distinctions. **Regression b**: testing for a difference in the effect of unexplained happiness on 2000 income, by 1995 income quintile. **Regression c:** testing for a difference in the effect of 1995 income on 2000 income, by 1995 income quintile. Independent variables are from 2000 unless otherwise noted.

Source: Graham *et al.* (2004).

nature of the Russian context, however, renders this unlikely to be the *entire* explanation. Our results suggest that having a positive attitude in general, as well as a positive attitude about future opportunities, is linked to better earnings and health outcomes. There is also broader psychological evidence that character traits, such as high self-esteem and optimism, have effects on individuals' labour market performance and on their health outcomes (Cummins and Nistico, 2002; Diener and Seligman, 2004).[64] It may be that behavioural or attitudinal variables may be more important in extremely uncertain contexts such as in Russia, where it is more difficult to predict the future.

Research based on comparable data for other countries is necessary to test such a proposition. These results do not allow us to establish a direction of causality, and at most they are suggestive. It is possible that causality runs in both directions, from policy-relevant variables or factors such as economic performance to happiness, as well as in the other direction.

At a minimum, it is clear that using longitudinal data on both mobility and subjective wellbeing gives a very different picture of how people are faring in developing countries than by looking at standard income or distribution data in isolation. While it is fairly standard to equate wellbeing or utility with income, our research, and that of many others, suggests that there are very important non-income determinants of wellbeing. These elements of wellbeing also seem to have a correlation with labour market performance and future earnings outcomes. An unanswered question, however, is: how can we usefully and prudently incorporate these novel approaches and new kinds of data as we try to better understand the complex relationships between globalization, poverty, and inequality?

Conclusions

Our research, which relies on the conceptual frame of the economics of happiness, and uses panel data and surveys of reported wellbeing as analytical tools, yields a different, albeit complementary, picture of the dynamics of poverty and inequality in developing economies in the process of integrating in the global economy than does analysis based on standard, moneymetric measures. We focused on income mobility and on reported wellbeing as a way of gauging movements into and out of poverty, and distributive trends across time and across cohorts within countries. These helped us to assess the importance of relative as well as absolute differences. We collected data on two very different countries – Peru and Russia – in the process of integrating into the global economy. Perhaps the most notable finding from this research is the consistent gaps between measures of welfare as gauged in standard terms, such as earned income or consumption expenditures, and those reported in surveys of wellbeing.

One problem is that it is difficult to separate cleanly cause from effect when assessing the importance of these gaps. The differences between measured and reported welfare may be driven by the effects of non-income variables, which our standard measures do not capture – such as job insecurity, relative income differences, and health and marital status. Yet it is also quite plausible that less-happy people are more likely to attribute importance to these insecurities and differences, as well as less likely to be healthy or to get married. Research attempting to disaggregate behavioural from contextual determinants of welfare is only in its nascent phase. Despite this unanswered question, the determinants of reported wellbeing seem to be consistent across countries and time, and suggest that there are limits to the extent that income growth alone can increase happiness. Yet most development objectives cannot be achieved without growth. Globalization is a major engine of growth, at least in the aggregate. Determining at what point in the development process it is worth making trade-offs to achieve other objectives remains a challenge, and the answer is likely to vary across countries and cultures.

In addition to growth, globalization either introduces or exacerbates other trends that affect people's wellbeing as much as, if not more than, income. An important such trend is the increasing flow of information about the living standards of others, both within and beyond country borders, which can result in changing reference norms and increased frustration with relative income differences, even among respondents whose own income is increasing. Globalization can also introduce increased volatility and insecurity for many cohorts, particularly those that are not well positioned to take advantage of the opportunities created by the opening of trade and capital flows. This insecurity, and the very real threat of falling into poverty for the near poor and middle sectors, contributes to negative perceptions of the globalization process, particularly in countries where social insurance systems are weak or where existing systems are eroding.

Our results also suggest that reported wellbeing and individual perceptions may have effects on economic outcomes. Many of these perceptions, such as perceived prospects of upward mobility (which are highly correlated with subjective wellbeing), have documented effects on economic and political behaviour. The contextual determinants that seem to affect these perceptions, such as large relative income differences, insecurity related to rapid and/or extensive economic change, poor job quality, and poor health, are all variables that can be influenced by policy. Improvements in virtually all of these policy areas are likely to have positive effects on aggregate economic outcomes as measured in standard income measures, as well as on reported wellbeing. Better functioning labour markets and more effective safety nets, for example, could both increase growth and reduce the long-term costs associated with short-term periods of poverty.[65] Those in the middle group are often very vulnerable to falling into poverty, particularly in countries that integrate into international financial markets before their financial and regulatory institutions are adequately developed.[66] Our results also highlight a need to better understand and incorporate the interaction between norms about fairness and equity with economic progress and change – including integration into global markets and information systems. Norms about what is fair are endogenous to policy choices in the long run. The importance accorded to unions, for example, has long-run effects on their bargaining power, and thus also wages in the sectors they represent.[67]

Tolerance of inequality seems to be much higher in contexts where there are perceived (even if they are not real) prospects for upward mobility.[68] Downward mobility, or the threat of this, is more likely to cause frustration and social unrest than is persistent poverty, as in the case of our frustrated achievers in Peru and Russia, or more generally (as in Argentina in the 1990s). Relying on income measures of wellbeing alone can mask a tremendous amount of latent social unrest. The frustrations that our research found are closely linked to and may even determine respondents' views about market policies and democracy, and thus ultimately to political support for continued integration in the global economy.

A more fundamental point is that relying on broader measures of welfare gives us a more complete picture of the impact of globalization on the welfare of countless individuals, and helps to explain the gap between empirical and technical assessments of the benefits of the globalization process and those of the average citizen (or at least the vocal proponents who claim to speak in the interests of the average citizen) in both developed and developing countries.

In the end, the results from surveys of reported wellbeing drive home the hypothesis that seems to need constant reinforcing: growth is a necessary but not sufficient condition for poverty reduction. Other key factors – such as public investments in health; institutions that can ensure adherence to basic norms of equity and fairness; and collective investments in social insurance to protect workers from the volatility that often accompanies integration into global markets – are essential. Without them, globalization will only create opportunities for those that are best positioned to take advantage of them, leaving behind large sectors of poor and vulnerable individuals.

Notes

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1. For a fuller discussion of these issues, see Birdsall and Hamoudi (2002), and Collins and Graham (2004).
2. Easterlin used 30 surveys from 19 countries, including some developing countries; see Easterlin (1974, 1995, 2001, 2003a). He also finds that health is a demographic variable with clear effects on happiness in all societies, a finding that other studies corroborate. For an excellent summary of many of these studies, see 4 October 2004 issue of *New Scientist* magazine.
3. Blanchflower and Oswald (2004: 1359–87) find that wellbeing in the USA has a slightly downwardtrend, while in the UK it has a slightly upwardtrend; see also Diener (1984) and Frey and Stutzer (2002).
4. We find that average happiness levels are, for the most part, lower in the Latin American economies than in their wealthier OECD counterparts. Yet *within* the subset of Latin economies, there is a similar lack of relationship between per capita income and average happiness levels; see Graham and Pettinato (2002a).

5. For an excellent review of the relationship between health and development (and the links or lack thereof to inequality) see Deaton (2003).
6. I thank an anonymous reviewer for making this point.
7. Easterlin (2003b) discusses arguments in favour and against the 'set point' theory.
8. Easterbrook (2003) discusses this in detail.
9. One example of these is the consistently high ranking that appears for Nigeria in cross-country happiness studies.
10. For the negative effects of unemployment see, for example, Clark and Oswald (1994: 648–59); on income volatility, see Graham and Pettinato (2002a); and on crime, see Powdthavee (2005).
11. It is important to note that some critics of the findings of the social capital literature more generally have some genuine concerns about the robustness of these findings; see, for example, Durlauf and Fafchamps (2005).
12. I thank Andrew Oswald for a discussion of this point.
13. Experimental studies, such as the ultimatum game, find that people are willing to turn down fairly large amounts of 'reward' money rather than accept a reward that is divided unfairly between two people. Oswald *et al.* (2003) finds that workers place a higher value on rank in a firm, and how their salary compares to other co-workers, than to the actual amount of salary. Hagerty (2000) finds that, controlling for personal income, individuals living in higher-income areas in the USA were lower in happiness than those living in lower income areas.
14. They use two specifications as proxies for relative income. The first is the ratio of individual income to state income per capita (controlling for regional housing prices) and the second is a series of variables which measure income relative to the average level of income in each of the different quintiles of income within an individual's state. In both instances, greater relative differences make people less happy, and in the latter instance, the greatest effects come from the ratio of individual income to income in the top quintile (see Blanchflower and Oswald, 2004).
15. See Graham (2003a).
16. See Di Tella *et al.* (2001).
17. On inflation, see Graham and Pettinato (2002a); on unemployment, see Eggers and Graham (2004). The unemployment finding is significant at the 5 per cent or 10 per cent level, depending on the specification. One explanation for the mixed results is the large proportion of the population in the informal sector, and therefore not affected directly by the unemployment rate.
18. In the first three years of the financial crisis in Indonesia of the late 1990s, 20 per cent of the population was below the poverty line at any given point in time, yet 50 per cent of the population was in poverty at some point during the three year period; see Pritchett *et al.* (2000).
19. For a discussion of the extent of drops into poverty during financial market crises, for example, see Cline (2002). For a discussion of insecurity among the middle class, see Birdsall *et al.* (2001).
20. Even then they usually cover short time periods, say one to three years, and are rarely nationally representative samples.
21. For a summary of the critiques of the use of survey data, see Bertrand and Mullainathan (2001).
22. See, among others, Conlisk (1996) and Simon (1978).
23. A notable recognition of the behaviouralist approach was the awarding of the 2002 Nobel Prize in Economics to Daniel Kahneman, a psychologist.
24. See Easterlin (2003a, 2003b).

25. See, for example, Diener and Biswas-Diener (2000) and Diener and Seligman (2004).
26. Some scholars also find an additional effect at the very top of the scale, which might be explained by greed or changing preferences resulting from high levels of wealth; see Argyle (1999: 353–73). Veenhoven (1991: 1–34), meanwhile, finds that the correlation between income and happiness is much greater in poor countries.
27. See Stouffer's account as summarized in Merton's *Social Theory and Social Structure* (1957). I thank George Akerlof for pointing me in the direction of Stouffer's work. At about the same time that Merton wrote his book, Duesenberry explored the relationship between income aspirations and social status. His specific interest was in ascertaining how this relationship influences savings behaviour, but the empirical work on which he based his analysis was remarkably similar to Merton's work. He relied on sociological research based in public opinion polls in the USA in the 1940s, and found that those at the highest levels of income said that they needed a higher percentage increase in income to live comfortably than did those in all income groups other than the poorest. Duesenberry used this and data from other studies to test his theory that people who associated with others who had more income tended to be less satisfied with their income than were people who associated with others who were at the same income level (Duesenberry 1949: 47–50). Kapteyn's more recent work (1999) on savings in the Netherlands supports these results.
28. For different societies' tolerance of inequality, see Esping-Andersen (1990). For an excellent overview of trends in mobility and opportunity in the USA, see McMurrer and Sawhill (1998). For a brief account of divergences between public beliefs and recent trends, see Graham and Young (2003).
29. Richard Webb survey cited in *Oiga* magazine, Lima, circa 1965.
30. For trends in inequality related to the opening of capital markets and the liberalization of trade in Latin America, see Behrman *et al.* (2001).
31. See Graham and Pettinato (2002a, 2002b) and Graham and Pettinato (2001). There have been some smaller studies in particular countries, such as Namafie and Sanfey (1998) in Kyrgyzstan, Rojas in Mexico (2003), and Ravallion and Lokshin in Russia (1999). As far as we know, there are no other region-wide studies in the developing countries. Hayo (2003) has recently completed a study in the transition economies in East Europe.
32. For detail on the data and the underlying methodology, see Graham and Pettinato (2002a) and Graham (2003b). For an excellent summary of the few mobility studies that do exist in the LDCs, see Baulch and Hoddinott (2000).
33. The Latinobarómetro survey consists of approximately 1,000 interviews in 17 countries in Latin America, providing 17,000 observations for statistical analysis. The samples are conducted annually by a prestigious research firm in each country, and are nationally representative apart from for Brazil and Paraguay. The survey is produced by the NGO Latinobarómetro, a non-profit organization based in Santiago de Chile (www.latinobarometro.org). The first survey was carried out in 1995 and covered eight countries. Funding began with a grant from the European Community but is now from multiple sources. Access to the data is by purchase, with a four-year lag in public release. Graham has worked with the survey team for some years, and assisted with fund-raising, and therefore has access to the data.
34. In our studies, we had a 38 per cent attrition rate over a five-year period in Russia, and a 25 per cent attrition rate for the three-year period covered by our perceptions survey in Peru (for the 1991–2000 living standards measurement survey, we had less attrition).
35. Blanchflower and Oswald (2004) get a correlation coefficient of 0.56 for British data for 1975–92, where both questions are available; Graham and Pettinato

(2002a) get a correlation coefficient of 0.50 for Latin American data for 2000–1, in which alternative phrasing was used in different years.

36. This is based on the World Bank's living standard measurement survey and on a minimum wage/minimum basket of goods definition of poverty. For detail on these trends and definitions, see the chapter on Peru in Graham (1994).
37. In both these cases, some of the mobility we find could be driven by newly educated individuals entering the labour force. As neither study controls for this, the rates are comparable if, perhaps, slightly higher than they would be if we were able to implement such controls.
38. I discuss winners and losers in Peru in detail and summarize many of the existing studies in Graham (1998). For a broader discussion of these issues worldwide, see Birdsall *et al.* (2001).
39. Behrman *et al.* (2001), for example, find that the marginal returns to completing higher education in the 1990s increased markedly relative to completing secondary and primary, while the marginal returns to completing secondary education relative to primary education narrowed. In recent work pooling seven years of Latinobarómetro data (1997–2004), with a sample of over 100,000 respondents, we find that those with a completed high school education are represented disproportionately among the unemployed, as opposed to those with less than seven years of education, or those with a university or technical education (Graham and Felton, 2005).
40. The economic transitions in both countries have been documented extensively elsewhere. For excellent accounts, see Gaddy and Ickes (2002) and Wise (2003).
41. For Peru, see De Ferranti *et al.* (2003); for Russia, see Yemtsov (2005).
42. The Peruvian data are in expenditure and the Russian data are in income. The uncertain economic context in Russia and the income data makes potential error an even larger problem. In one attempt to correct for error, we eliminated the roughly sixty zero-income respondents from our Russia panel, as many of them also reported that they were employed.
43. For a complete picture of the statistically significant differences between frustrated and non-frustrated upwardly mobile respondents, see Graham and Pettinato (2002a, ch. 4).
44. In an initial, and at this point cursory, analysis of the 2003 Peru survey data, Graham and MacLeod (2004) find that the frustrated achievers are less likely to favour democracy, but there is no link with market policies. Yet the results are also not fully comparable as a much lower number of respondents had upward mobility during this latter period and thus there was a far lower percentage of frustrated achievers.
45. In a logit regression, with upward mobility as the dependent variable, and other demographic controls included, initial expenditure levels and log expenditure levels (in separate equations) were both negatively and significantly correlated with upward mobility. Results available from the author on request.
46. See, for example, for example, Benabou and Ok (1998), Piketty (1995), and Alesina *et al.* (2001). Sceptics of this study question the results. One potential problem with this study is the extent to which within-state inequality is a useful or realistic reference point for US respondents.
47. See the happiness surveys cited in ILO (2004).
48. See Behrman *et al.* (2001).
49. See, among others, Goldberg and Pavcnik (2004).
50. The coefficient on marriage for Latin America is positive but short of significant for the 2001 sample. For other years for which we have data, the coefficient on marriage is positive and significant.

51. The economic ladder question (ELQ) asked respondents to place themselves on a 9-step ladder representing their society, where the poor are on step 1 and the rich are on step 9. Support for market policies was measured by an index based on several scaled questions about the private sector, foreign investment, free trade and privatization. For detail, see Graham and Pettinato (2002a).
52. See Benabou and Ok (1998) and Piketty (1995).
53. In a regression with the variable EQUALSUP as the dependent variable, the coefficient on our prospects of upward mobility variable POUM was negative and significant. The coefficient on the wealth index was positive and significant. It even remained positive when we squared it to see if there were differences in the attitudes of the very wealthy. Results available from the author.
54. We also split the sample (according to two different methods) into those respondents who were likely to pay taxes and those who were not, but did not get results that were significantly different; see Graham and Sukhtankar (2003).
55. In an earlier study we found that support for redistribution was lower in poorer, more unequal countries in the region than in the wealthier ones, while within countries wealthy people were more likely to favour productivity over redistribution. This finding is based on a question in the 1998 Latinobarómetro asking respondents if what their country needs most to get ahead is more redistribution or more productivity. For detail, see Graham and Pettinato (2002a, ch. 3).
56. See Graham and Sukhtankar (2003, 2004).
57. The US data are from the GSS, while the Latin American data are from the 2001 Latinobarómetro. For a detailed discussion, see Graham (2002).
58. Authors' calculations based on GSS data and on the 2000 Latinobarómetro survey.
59. See Graham and Pettinato (2002a).
60. See Graham and Pettinato (2002a).
61. See Graham *et al.* (2004).
62. See Graham *et al.* (2004).
63. I would like to thank a number of participants at the Brookings Warwick Conference on 'Why Inequality Matters: Lessons for Policy from the Economics of Happiness', June 2003, for discussing this insight, and in particular Gary Burtless for raising the point.
64. Diener and Seligman (2004), Cummins and Nistico (2002).
65. Rodrik (1996), for example, shows that the developed countries that devote higher percentages of their GNP to trade spend more per capita on safety nets and social insurance mechanisms than those that trade less. Diwan (2001), meanwhile, shows that the poor often face long-term, non-recuperable costs from short-term periods of poverty. Children missing years of schooling during crisis years is a case in point.
66. For the effects of short-term financial crises on poverty trends in emerging market countries, see Cline (2002). For the effects of financial market integration on countries with different levels of institutional development, see Prasad *et al.* (2003). For the proximity of the near poor to the poor in terms of indicators such as infant mortality, see Birdsall (2005).
67. Atkinson (1999) makes the point that the loss of union power played a part in the reduced relative wages of blue-collar workers, and now a bigger gap has become more acceptable.
68. For a short critique of the gaps between perceived equality of opportunity in the USA and the empirical evidence, see Graham and Young (2003).

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11

Explaining Threshold Effects of Globalization on Poverty: An Institutional Perspective

Alice Sindzingre

Introduction

Globalization and poverty represent broad, multidimensional concepts which refer to phenomena that transform themselves across space and time. The literature on the impacts of globalization on poverty points to highly variable outcomes, both positive and negative, as well as multiple causalities, channels and mechanisms that link globalization and poverty. Studies observe different results depending on the channels, historical period, and the region or country considered. As is known, the inconclusive or variable character of these findings is a matter of intense debate, as are the concepts of globalization and poverty themselves.

This chapter argues that this variability of outcomes stems from a key feature of the impact of globalization on poverty, which is the non-linearity of transmission of globalization's impact and the existence of threshold effects. It also argues that institutions constitute a critical factor in creating these threshold effects in the transmission of the impact of globalization on poverty. Analyses that focus on globalization and global poverty increasingly stress the importance of institutions. No existing work, however, has examined institutions in relation to the threshold effects that characterize the links between globalization and poverty. The chapter also shows that institutions create discontinuities and generate threshold effects on the impact of globalization on the poor. Institutional environments and the presence or absence of critical institutions indeed determine whether the benefits of globalization are harnessed and spread to the poor, whether these benefits are locked-in by particular groups, with the poor being excluded from them, or the negative shocks associated with globalization are transmitted to the poor in an unfettered manner. Institutions introduce these threshold effects because of their composite nature: institutions are indeed made up of distinct component forms and contents (functions and mental models, for example) – which evolve differently. In particular, institutions may generate processes of cumulative causation and self-sustained poverty traps. The impact of globalization on poverty in a given setting is positive or negative depending on the multiple characteristics of the various components of institutions – among others, their historical depth, credibility, the way they combine, their ability to be transformed by globalization, and the ways in which they give the poor access to the effects of globalization that are beneficial to them.

The chapter is structured as follows. The next section discusses the definitional issues associated with the concepts of globalization, poverty and institutions, as well as the different causalities and the heterogeneity of the processes that link globalization, poverty and institutions. The section following presents a theory of institutions as composite arrangements; this composite character explains the existence of the threshold effects that institutions generate on the impact of globalization on the poor. The influence of the domestic political economy on institutions and its contribution to the threshold effects that modify the impact of globalization is then highlighted, followed by the critical role of social institutions and norms in the generation of these discontinuities and threshold effects. We then examine the interaction between social institutions, public institutions and policies and macroeconomic conditions, which may contribute to the formation of poverty traps. The final section offers brief concluding remarks.

Globalization, poverty and institutions: definitions and causalities

Globalization and poverty

The concepts of globalization and poverty remain the objects of intense debate, in particular with regard to the definitions and indicators of globalization, integration in the commodity, labour and capital markets,[1] 'freedom and ability of individuals and firms to initiate voluntary economic transactions with residents of other countries', and 'greater mobility of capital and labour'.[2] Globalization encompasses heterogeneous elements: facts (flows, such as trade, capital, labour, migration, information and market integration) and policies (reduction of barriers on trade, financial flows and migration liberalization). Depending on the aspect of globalization considered, the function of institutions differs. They may provide credibility to government commitments and policies, enforce property rights for foreign investment, reduce information costs and allow the pooling of risks for small-scale farmers.

The concept of poverty has re-emerged in academic research as well as the agenda of international financial institutions in the 1990s (Kanbur and Lustig, 2000: 285–306), and, as noted by Deaton (2004), economic development has been conceived increasingly as poverty reduction rather than economic growth. Poverty, as is well known, has many dimensions (subjective and objective, relative and absolute, monetary and non-monetary). Measurement remains a key issue and, as highlighted by Ravallion (2003; and Chen and Ravallion, 2004), divergence in the assessment of the impact of globalization on poverty stems mainly from differences in the definitions, data and measurement assumptions. Institutions intervene in all these aspects – their definitions, and the methods of assessing their effects – to contribute to divergence in the analyses of this impact. The channels of transmission from globalization to poverty reduction are numerous and include economic as well as political economy channels (government policy, domestic allocation and 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 having an impact on poverty directly through changes in relative prices and indirectly through growth effects.[3] There is a consensus, despite a few dissenting studies,[4] that globalization is positive for growth and hence for reducing poverty.

Globalization has improved the situation of the poor in certain countries and regions but not in others. Sub-Saharan Africa (SSA) is the region most affected by poverty, where the impact of trade openness since the reforms of the 1980s has been mixed. Many explanations have been provided for this, such as economic and geographical constraints (climate), policy (resistance to reform) and institutional factors. SSA is a clear example where, in addition to economic determinants, the presence or absence of certain institutions constitutes additional factors that promote or hinder the transmission of global forces to the poor, as well as inducing discontinuities and unexpected consequences.

The difficulty in defining institutions

Institutions mediate the various channels and mechanisms of the effects of globalization and explain the latter's diversity, heterogeneity and non-linearity. Definitions of institutions remain, however, a debated issue. Institutions are co-extensive to societies and economies, as there cannot be a society without institutions;[5] institutions are simultaneously a particular dimension in the regulation of human activity. Institutions depend in essence on contexts, whether in the definitions based on transaction costs set up by the new institutional economics, in the game equilibrium perspectives (evolutionary or repeated games),[6] or in the evolutionary theory that focuses on learning processes and competition (Nelson and Winter, 2002). Douglass North's (1990, 1991) definitions are the best known: institutions are constraints that structure political, economic and social interactions, and consist of informal (self-enforcing) constraints (sanctions, taboos, customs, traditions, codes of conduct, conventions, norms of behaviour) and formal regulations (constitutions, laws, property rights).

Definitions and functions of institutions are sometimes confused in the literature. The boundaries of institutions are also often fuzzy. Institutions may be defined as sets of property rights as well as devices aimed at the protection of those property rights. They are also defined as devices reducing transaction costs, instruments allowing stable anticipations, strengthening incentives, channelling resources, flexible responses to uncertainty, and so on. Characteristics of institutions, such as trust or credibility, are also often confused with the institutions themselves. Institutions may also be equated with a type of infrastructure (other than physical infrastructure). Similarly, the distinction between institutions and policies is sometimes unclear. Policies are the outcomes of state institutions, such as trade or taxation policies (institutions and policies or policy outcomes may even be synonymous in some studies), but policies also determine institutions – they create or reform institutions.[7] Institutions are also viewed alternatively as both causes and effects. As argued by North and Thomas (1973, quoted by Hoff, 1995), 'innovation, economies of scale, education, capital accumulation … are not causes of growth; they are growth'. Similarly, property rights may be viewed simultaneously as institutions and the outcomes of institutions, as state institutions protect property rights. The literature, however, recognizes that many institutions have no link with property rights (for example, the easing of exchanges and transactions).

The various categories, domains and levels of institutions

Institutions may be categorized according to a series of dichotomies – state and non-state; market and non market; formal and informal – though these dichotomies are weakened by many problems of definition, logical consistency and conceptual overlap (Sindzingre, 2006). Institutions are also domestic or external to countries (supra-state), which is a dimension of globalization (the so-called 'global governance'). In poor and weak states this is compounded by their dependence on aid and policy conditionality. Institutions also regulate different domains of human activity: economic (when generating market-orientated incentives or protecting property rights); political (when managing conflict or enhancing political stability);[8] and social. Institutions regulating social relationships consist of sets of social norms that operate at household, territorial and group levels. These have been analysed by transaction costs theories, and theories based on asymmetries of information. The latter have explained several agrarian institutions in poor countries, such as interlinked markets (credit, insurance and land, for example) (Bardhan, 1989).

At a microeconomic level, institutions and norms introduce thresholds in the causal link between globalization and poverty – for example, the institutions that favour or prevent collective action, regulate personal exchanges, social relationships and inequalities for individuals, households and groups, in particular redistributive institutions and insurance mechanisms, which may either redistribute or concentrate the gains of liberalization. At a macro level, the state partitions globalization flows (trade, capital, labour) between external and internal flows that fall under state prerogatives and rules. Thresholds in the impact of globalization stem in the first place from artefacts such as borders, which show resilience in a context of globalization.[9] As is well known, dynamics of global inequality differ according to whether or not inequality occurs within or between countries. The state provides credibility – because it represents the highest level of capacity to commit – to other levels of public institutions (legal, parliamentary, economic) and to government policies. The state plays a key role in channelling the impact of global integration. Early development economists viewed the role of the state, of domestic policies and of institutions as being analytically pre-eminent in developing countries, as it is able to reallocate the factors of production towards growth better than the markets can. This has been the framework of the 'big push' policies or of the 'developmental' states' industrial policies in East Asia. The state, however, has also intensified the negative impact of globalization on poverty, as shown by cases of 'weak' and predatory states, such as in SSA.

State institutions may or may not be able to provide rapid and flexible policy responses to external shocks, help the poor to cope with these shocks (such as volatility in the price of inputs), address market failures that primarily affect the poor (such as information asymmetries), or support particular market structures that are more effective in terms of risk management, such as economic diversification. Similarly, state institutions may or may not help to develop savings and investment as well as the entrepreneurial capacities of the poor, promote the marketization of goods that are produced by the poor, or reduce vulnerabilities that stem from the dualism and imbalances of employment structures, such as the pre-eminence of the primary sector (agriculture or natural resource extraction) compared to off-farm employment.

Institutions, poverty and globalization: multiple-way causalities and heterogeneous processes

The relationship between institutions and economic growth and development has a vast literature. The effects of institutions on poverty, however, have been less well investigated. This is also true of the relationship of institutions with globalization, and how this has influenced its impact on poverty – or, conversely, the transformation of institutions as well as the transformation of their effects on poverty.[10] It is argued here that the effects of institutions are not linear; they follow processes of cumulative causation, create threshold effects, discontinuities and self-sustained poverty traps.[11] Causalities and threshold effects work through several retroactive channels, from globalization to poverty, and from poverty to ways of coping with globalization (for example, trade policies). This in turn induces specific impacts of globalization.

The impact of globalization on poverty through institutions may be positive or negative.

Two causal processes may be distinguished. The first is the impact of globalization on institutions. Globalization is a factor in institutional change, which in turn may have positive or negative effects on poverty reduction. This causal process is, however, confronted by the asymmetry between the causal event (change in prices, mobility of factors) and its objects (institutions, norms). It is also confronted by the heterogeneity of the speed of transformation of the causal event (globalization) and its objects (institutions). The latter exhibits far more persistence than the former, which is why explaining growth rates by institutions remains puzzling (Easterly *et al.*, 1993).[12] Institutions create stable expectations; the pace of institutional evolution thus tends to be slow, with more or less rapid transformation depending on the category and domain of the institution. According to Braudel's (1996) seminal distinction, three types of institutions correspond to three speeds of change: (i) social institutions and norms (incurring the slowest transformation);[13] (ii) economic structures; and (iii) political institutions (that are transformed the fastest) (Arrow, 1998; Braudel, 1996). Globalization as a set of flows and policies is more likely to induce transformation on the aspects of institutions that are already experiencing rapid change (for example, formal political or economic rules), and less likely on slow-changing institutions such as social norms. The second causal process is the impact of institutions on globalization. Globalization is 'filtered' (intensified or hindered) by institutions at the country and micro levels (village, households). The mediation by institutions introduces unexpected consequences and non-linearities in the transmission mechanisms that orientate them towards either beneficial or detrimental outcomes for the poor.

In summary, causalities follow three dichotomies: the positive effects of globalization versus its negative effects, respectively: (i) on the domestic institutions that are causes of poverty (exclusionary ones, like caste, for example); (ii) on institutions reducing poverty (household structure allowing accumulation, for example); and (iii) on the institutions that enhance the positive aspects of globalization (such as economic freedom) or intensify its negative aspects (such as weak support for economic diversification).

Assessing causalities: issues of measurement and endogeneity

An increasing number of studies have put forward institutions as the key determinants of growth (Rodrik *et al.*, 2002; Acemoglu *et al.*, 2004; and for an opposing view, see Glaeser *et al.*, 2004), which has given rise to heated controversies as to their exogenous character. Studies often rely on growth cross-country regressions, where institutions are used as determinants of growth in addition to more traditional variables (such as investment). Institutions are also used as explanatory variables in regressions explaining poverty or globalization. The variables that approximate institutions, however, are generally broad notions, such as trust, rule of law, protection of contracts and property rights, civil liberties, political stability, and social cohesion and homogeneity. There is now a consensus on the fact that 'institutions matter', but no consensus exists as to *which* institutions matter or on what the direction is of the causalities (Engerman and Sokoloff, 2003b). Instruments are sometimes confused with explanations (Rodrik, 2004), and models are often affected by implausibility and econometric flaws (Durlauf and Quah, 1998).

Causalities are subjected to the endogeneity of the institutional variables *vis-à-vis* those they are supposed to explain (growth, level of income) (Basu *et al.*, 1987), for example, between institutions, trade openness and poverty. Economic policies are particular outcomes of institutions, but policies (such as trade barriers) have been used as a proxy for weak institutions. Simultaneously, openness policies transform domestic institutions and their influence on poverty, and trade creates institutional forms.[14] Endogeneity also affects the many studies that try to isolate the determinants of growth among the three categories of policies, geography and other endowment variables, and institutions.[15] Policies and institutions may be endogenous *vis-à-vis* each other, and even geography is not necessarily an exogenous variable (as shown by migration). Political institutions are also endogenous *vis-à-vis* growth,[16] as well as social and micropolitical mechanisms such as trust and accountability.

The problems of observing thresholds and aggregation

The emergence of trust or cohesion and their causal relationship with particular forms of institutions and their effectiveness represent complex processes that depend on context and are best observed through case studies. Econometric exercises work at an aggregate level and observe aggregate threshold effects. They are ill-equipped, however, to apprehend the multiple micro-mechanisms and norms, as well as the underlying threshold effects that stem from the influence of institutions. Indeed, these norms work at the individual or group level and contribute to the effectiveness of an institution (and its credibility), hinder or intensify the gains or losses from globalization, build local poverty traps or trigger opportunities for escaping them.

Institutional variables may be discrete, stable in space and time, and lend themselves to quantification and aggregation. Many institutional variables, however, do not exhibit such properties of stability across time and space (the former because of historical transformation and the latter because of adaptive, borrowing processes). Isolating threshold effects in the impact of globalization, however, requires aggregate data, which are typically not used in qualitative analyses. The latter in turn only observe particular before–after processes, which are *sui generis* cases and cannot be aggregated, particularly in the case of micro institutions and institutional change. A methodological difficulty remains in this tension on the one hand between models that assess non-linearities but with questionable concepts of institutions and, on the other, case studies that may have appropriate concepts but do not use aggregate data.

Threshold effects based on the very nature of institutions: institutions as composite arrangements

The different components of institutions: forms and contents

Institutions are composite sets of rules that shape various levels of human cognition and activity. They are simultaneously constituted by forms – names, organizations – and contents – functions, meanings – that display distinct evolutions and speeds of change. Institutions that bear similar names do not possess identical credibility, capacities of regulation and generation of incentives from one environment to another. The form and content of institutions are determined by several factors – history, cumulative processes, level of economic development and state capacity, among others. Their rules organize the behaviour of different agents (individuals, households, firms, governments), settings – market (agricultural production, labour markets, access to capital, human or financial, for example) and non-market activities (state institutions, for example) – and economic sectors (rural, industrial and financial, for example).

Therefore, the impact of globalization on the poor cannot intrinsically be a linear process. Institutions are not discrete entities that enter into unambiguous relationships with other similar variables. The channels and mechanisms of the impact of globalization are altered by local institutions that are in fact constituted by distinct components. Under apparently similar forms, the effective contents of given institutions may differ. These apparently similar institutions therefore channel the impact of globalization on the poor in different ways – for example, depending on contexts, positive, negative, first positive then negative, or both positive and negative according to the domains considered (economic, financial, social or political).

Efficiency of institutions as an outcome of relationships between components

The formal existence of institutions provides individuals with little information as to their effectiveness, and few stable expectations on the way individual behaviour is ruled by these institutions, and hence on their effective functions *ex post*. The formal existence of institutions provides little information on the effective enforcement of rights or rules (property rights, rule of law), or on the 'capture' of institutions and legal systems by interest groups. Functions of institutions do not map into unique forms, as argued by Rodrik (2004) in the case of weak property rights in China. Their various functions (such as providing stability for investment) are achieved by other institutions, in contrast with Russia, where institutions formally exist but do not fulfil their functions (Rodrik, 2004). The formal existence of institutions does not imply the similarity of their local content across time and across countries or settings (for example, the content attached to accountability, investment regulation or safety nets). The mechanisms leading from globalization to poverty via institutions are therefore under-determined *ex ante*. Threshold effects, positive or negative, stem from the effective content and functions of institutions that underlie their formal existence, and may be analysed more accurately case by case.

Indeed, the efficiency of institutions stems not only from their constitutive elements (form and content) but also from the relationships between these components, and from their relationships with other institutions (Sindzingre, 2003). Institutions, as composite sets of rules, are more or less pervasive and effective; their effects are observable *ex post* as they result from a combination of institutions in addition to exogenous variables (such as endowments, land abundance and climate). For example, redistributive institutions, such as those supporting land reform, have different effects on poverty depending on whether they combine with land abundance or scarcity.

Therefore, the effectiveness of institutions aimed at helping the poor to cope with trade liberalization is not only made up of various constituents (policy measures, organizational rules) but also by the relationship between them. Effectiveness depends, for example, on human capital, political economy and social trust or cohesion, as well as on the relationship with other institutions (such as those supporting technology, information, the rule of law). For example, the effectiveness of business regulation is contingent on the presence of effective judicial institutions. The impact of policy measures, such as trade, industrial or diversification incentives focused on the poor, is contingent on institutional combinations, particularly state capacity. Forms do not correspond to unique contents, and growth results from contingent combinations of policies, structures and institutions. For example, institutions dealing with safety nets have often been inefficient in SSA, while limited state-provided safety nets did not prevent Asian countries from exhibiting a positive link between globalization and poverty. Authoritarianism has been combined with poverty reduction in South Korea (a developmental state) but not in the predatory political regimes often found in SSA. In Taiwan, authoritarianism has also been combined with an output based on small and medium enterprises (absent in SSA), based on specific models of growth, poverty reduction and a combination of economic structure, initial conditions, geography, political regime, policy and external integration.

Mental models, as argued by North (on shared mental models, see Denzau and North, 1994), and individual perceptions (of poverty, inequality and security) also shape the relationship between the various institutional components. Thus 'failed states' are characterized by self-reinforcing traps caused by social fragmentation, and these are further compounded by domestic poverty, the internationalization of resources[17] and the negative perceptions of all players, local and external (investors, donors). New institutional economics recognize the credibility of institutions and commitment by governments as being essential determinants of growth. Promises that are not credible in uncertain situations are characterized by low investment and preference of the status quo (Fernandez and Rodrik, 1991). New institutional economics defines credibility as a commitment to secure private rights;[18] this view is, however, unclear as to what combination of elements render an institutional form effectively credible ('believed') and binding, given that political power possesses, by definition, the authority to denounce this binding. In addition, securing private rights may be not the main element in achieving credibility or growth, especially in low-income countries. State institutions and government commitment to policy reforms are often perceived as having been 'privatized' by political clientele and special interest groups, and thereby project low credibility.

Discontinuities between micro and macro levels

Institutions induce discontinuity in the channels that lead from globalization to poverty and poverty reduction; this discontinuity is determined but not easily predicted *ex ante*. The influence of institutions depends on functions, contents and effectiveness that are observed *ex post*, especially with regard to credibility, social cohesion and the coherence of policies with institutions. Moreover, institutions induce discontinuities between micro and macro levels; causal mechanisms at the household level are not necessarily homologous to those operating at the macro (regional or country) level; for example, those linking growth and education, or income and education or health (Kanbur, 2001). Discontinuities also arise from individual perceptions that may weigh different dimensions of poverty and inequality.[19] Aggregate threshold phenomena hide multiple microeconomic mechanisms that could explain possible unexpected effects. For example, micro group structures and hierarchies regulating access to capital and credit may transform the results of trade liberalization into an oligopoly controlled by a limited number of traders.

Micro norms may unintentionally shape macro institutions; unwritten, customary (informal) norms may modify the formal missions of public institutions, may work against them (through corruption), or may provide their legitimacy. Policy credibility is also a mechanism that introduces discontinuities between macro and micro levels, as well as problems of time consistency and anticipations of policy reversals. Even well-devised reform (such as liberalization) may fail if civil servants adhere to different customary norms that are better enforced (and may build self-enforcing equilibria). For a similar set of reasons, many of the poor targeted by otherwise well-designed safety nets may never be reached.

Threshold effects created by the political economy of institutions

The political economy dimension of institutions

Institutions may be conceived as being shaped primarily by political economy, reflecting the interests of groups in power at the expense of efficiency and the welfare of society, with no outside agency providing credibility to their commitments (Acemoglu, 2002, 2003). Political economy, however, can also channel the positive effects of institutions towards growth, through political participation, social cohesion and management of social conflict, particularly when the latter is caused by external shocks and globalization (Rodrik, 1998a, 2000; Thorbecke and Charumilind, 2002). The impact of globalization is influenced by domestic political economy structures and institutions such as social polarization, oligarchic structures and predatory regimes, which may bias, distort or cancel the gains from globalization for particular groups of the poor. One of the channels of the negative effects of inequality on growth is explained by a country's political economy – for example, pressures for redistributive fiscal policies (Benabou, 1996; Alesina and Rodrik, 1994; Bourguignon, 2004b). The influence from political economy, whether positive or negative, is contingent on the nature of the groups devising the rules, their behaviour (productive, rent-seeking, exploiting institutions as resources), time horizons, and the intergenerational motives that shape their interests in redistribution and social cohesion.

As shown by the example of Latin America, institutions born of a legacy of high economic and political inequality (land rights, schooling, financial institutions), and that prevent large segments of society benefiting from economic opportunities, go some way to explaining poor growth performance.[20] In combination with tropical commodity endowments, this has led to the emergence of parasitic elites and a low level of public goods (universal education, for example), which have contributed to slowed growth (Engerman and Sokoloff, 2000).[21] Indeed, low-income and commodity-exporting countries exhibit high levels of inequality and polarization.

Political economy mechanisms contribute to threshold effects not only at the level of institutions but also at the level of government policies, as both levels are endogenous to one other. For example, domestic political economy impinges on trade policies and therefore transforms the impact of globalization on the poor. Threshold effects depend on particular contexts (for example, income levels, inequality, factor endowments, possible poverty traps created by resource abundance,[22] budget constraints and government redistributive preferences, the balance between interest groups, or the skewedness of political representation) and follow various channels, such as higher public spending (Rodrik, 1998b; Garrett, 1999; Boix, 2002).[23] In low-income countries characterized by inequality, rich elites appear to benefit more than the poor from trade openness, while in higher-income countries the middle classes and the poor draw greater benefits from openness (Milanovic, 2003a). The gains from global integration, in conjunction with democratic pressure, may also improve the situation of the poor by expanding access to education and lowering inequality, but the gains may be eroded by demands for government consumption and redistribution (Tavares and Wacziarg, 2001).

Public institutions against the poor

Rational choice approaches have highlighted the role of incentives and interests, with public institutions serving as political markets for organized groups competing for power. Particular groups may 'capture' existing institutions. They may also refuse access to institutions and associated rights (such as land rights) to certain groups and individuals, even although the latter may be entitled to benefit from these rights and enjoy access. Institutions intrinsically include political content and power relationships, as rules, by definition, constitute both inclusive and exclusionary devices, and inherently create beneficiaries and losers.[24] The particular design of institutions and actual enforcement of contracts and rights may ultimately be analysed as the outcomes of political power relationships.

'Empowerment' has been put forward as a key mechanism of poverty reduction.[25] It requires necessary conditions such as the existence of legal rules which are, however, not sufficient. Institutions' (empowerment) impact on poverty is influenced by the type of political power that backs the enforcement of the rules, rights and contracts. Individuals may have rights, but if the apparatus of political power or competing traditional institutions prevent them from being enforced, formal institutions may be worthless. The effective content – function, meaning, credibility – of public institutions is not the pure translation of their formal dimension (such as courts and elected parliament). Institutional forms may be similar, but contents may be growth-enhancing, poverty-reducing, or emerge as predatory institutions. It may even be in the interest of a predatory ruler to prevent the consolidation of developmental institutions, which may threaten his/her power and monopoly on rents (Robinson, 1996).

Clienteles and corruption also crucially affect the redistribution of gains and losses created by globalization in general, and to the poor in particular. They prevent the poor acceding to credit, investing, diversifying their economic activities and benefiting from basic public services such as health and education that are necessary for harnessing the opportunities offered by globalization. For example, state service provision is recognized as being essential for improving social indicators. Depending on its effective contents (organization, degree of corruption), however, it may either reduce poverty or function as an extorting device. Credibility and accountability of public institutions and policies are the 'contents' that can account for the discontinuity in the beneficial effects of institutions on poverty. In some low-income countries, because of political economy characteristics and weak institutionalization, the poor indeed perceive state institutions as being one of the causes of their poverty. Under certain thresholds, legal, health or educational infrastructures may act against the poor; above these thresholds, these institutions may help the poor. Therefore, in a polarized context where rules are devised by, and for, groups in power, the functioning of state institutions may work against the poor, exclude them from the gains of global integration, and create inequalities. As institutions intrinsically include a political dimension, the types of winners and losers, domains and effective contents of rules and rights, and the groups with access to these rules and rights, result from events that are contingent and unpredictable *ex ante*. Winners and losers depend on the balance of power (that is, which groups exercise power while others see their rights denied), and whether the objective of the group having the capacity to devise or manipulate the rules is redistribution or equality.

Threshold effects and poverty traps induced by social institutions

The diversity of the initial effects of globalization via institutions is examined at the level of social institutions and norms (household, group institutions or micro institutions).

Effects of globalization on micro institutions and poverty: a slow transformation

The impact of globalization on poverty is mediated by local institutions, which create threshold effects both in modifying this impact and in transforming themselves under the impact. Aggregate observations – such as the fact that globalization and growth have been pro-poor in some regions and not in others – in fact correspond to a multiplicity of micro mechanisms. In rural areas, links to markets, education and access to land are key endowments (Christiaensen *et al.*, 2003), regulated by social institutions – for example, allocating rights to education or land according to gender, age or status. Local and social norms at the micro level change slowly and the impact of globalization is more likely to be channelled by local institutions than by transforming them in a spectacular way. Certain social norms show significant resilience, such as division of groups according to particular criteria (occupation, class, race and so on) or political allegiance.[26] Self-enforcing mechanisms and status quo bias may explain the resilience of social rules through their intrinsic inequality and, in some cases, inefficiency (Bowles, 2004).

Institutional changes tend to work at the margin, inside institutional forms. Traditional institutions may erode under the pressure of market integration, with content and functions evolving under similar institutional forms (forms may evolve later). For example, customary land tenure may lose its social security and equity functions because of individualized land rights and land concentration arising from market transactions (especially when combined with demographic pressure) (Platteau, 2002). Similarly, a market content may progressively characterize non-market institutions such as kin groups (using family for unpaid labour, for example). The trust mechanisms that accompany traditional networks may similarly be used in order to facilitate collective action towards entrepreneurial objectives.[27]

Globalization transforming micro institutions, or channelled by them

Global integration – the transmission of world prices (including volatility to farmers in the export sector) – has an impact on local prices, return-to-assets and incentives. The move towards lesser state intervention (stabilization schemes, for example) also alters customary rural institutions such as insurance mechanisms and tenancy contracts.[28] Land-abundant and labour-scarce low-income countries historically enjoy elaborate property rights 'in man' (kinship systems, rights on labour) and not only 'in land'. Global integration and economic transformation have historically constituted key factors of change in these sets of rights.[29]

On the other hand, local social institutions channel and modify the impact of globalization in negative and positive ways, depending on their history, and their particular structure and combination with other economic variables; as in the case of land tenure arrangements, inequality in land rights (ownership or access), and modes of revenue collection. History and path dependency indeed contribute to non-linear effects, as the impact of institutions on economic performance persist over time. As shown by Banerjee and Iyer (2002) with land rights and tenure in India, different historical (colonial) property rights have led to varying economic outcomes; for example, areas where rights were granted to landlords exhibited lower agricultural investment, productivity and investment in public goods than in areas where rights were given to the farming peasants. Land tenure and distribution are a key source of agricultural productivity and scale effects (increasing or decreasing returns).[30]

The *ex ante* indeterminacy of the effects of social institutions

Micro institutions and norms have ambiguous effects. There is *ex ante* indeterminacy in their response to globalization as well as in the effects of their response to poverty, which depends on their actual contents and how the opportunities created by globalization alter the previous institutional interactions and equilibria and induce new incentives. Institutions change, depending on the context, to become adaptive or dysfunctional. They may create self-reinforcing traps, lock-in economic change in path dependency, or induce increasing returns, as in the case of the adoption of a particular institution or technology. Micro institutions are fragmented; a specific element (a form or content) of an institution may have positive effects, but these may be cancelled by other elements. Coupled with weak states and a predatory political economy (in customs services, for example), market integration and lower trade barriers may intensify informal norms and routines. Changes in technology or the value of a resource may be harmful as well as beneficial.[31]

In rural areas, social inequality is similarly an important source of inefficiency, as it may be an obstacle to collective action (Baland and Platteau, 1999). Local institutions, however, induce inequality according to discriminatory criteria based on, for example, age, gender and group membership within separate domains (production, consumption, technology, education or communal politics). Inequality in a particular domain (land rights, production, labour, kinship) can therefore be attenuated by different hierarchies or by egalitarian arrangements in other domains. Similarly, as is well-known, SSA households rarely follow the unitary model. Women and men are involved in different agricultural activities that reflect separate use and ownership of income.[32] Changes in relative prices and new market opportunities induced by globalization may modify and even reverse previous income inequalities.

In developing countries, property rights coexist with other rights and uses, such as the variety of flexible arrangements that govern the exploitation of natural resources – though institutional economics often equate institutions with property rights, and view stability as a factor of efficiency, promoting growth and poverty reduction. Flexibility and instability have even been viewed as key features of communal rights as opposed to private rights. Secondary rights or derived rights (access to land and land use) constitute flexible arrangements that are adaptations of local institutions (for migrant farmers, for example) (Lavigne-Delville *et al.*, 2001; Lambert and Sindzingre, 1995). These flexible arrangements may be efficient. The formalization of customary rights into property rights, which accompanies market integration, does not necessarily lead to greater efficiency in reducing poverty and creating markets, as in SSA, where private property rights have sometimes eroded customary co-operation rules, increased the perception of inequality, and intensified redistributive conflicts.

Social institutions, however, may be inefficient in a context of norms that are shared by groups of limited size, as in the case of customary arrangements in rural areas (for example, risk-sharing and insurance).[33] Formalized state institutions and legal systems, though possibly inefficient (corrupt, perhaps), can provide the poor with protection against local institutions, and the collapse of these inefficient legal systems may be harmful for the poor, as has been the case in various transition countries.

Poverty traps created by social norms

The negative or positive outcomes of social norms are illustrated by the well-known issue of the fragmentation effects of group affiliations (Easterly and Levine, 1997), and their controversial impact on growth and poverty reduction. As noted by Bowles (2004), the poor find themselves at a disadvantage in implementing large-scale co-ordinated collective action that aims at more equal institutions; moreover, they lack information more than do others. Norms allow co-operation and risk-sharing; and provide insurance and local public goods via various enforcement mechanisms (trust, reputation, reciprocity). They may alleviate, but cannot suppress, the other poverty trap mechanisms. 'Social assets' may alleviate elements of persistent poverty such as low returns on uneducated labour and financial constraints (Adato *et al.*, 2003). However, the scope for exchanges, the capacity to enforce rules and punishment, and the control of free-riding tend to be confined to the members of networks (Greif, 1989, 1994; Platteau, 1994; Fafchamps, 1992).

Groups reinforce solidarity and protection, but they also exclude. Lack of social affiliation implies greater degrees of freedom, but also limited access to capital or credit. Shared norms (based on occupation, ethnicity, location) sustain networks that encourage capital accumulation and are better able to take advantage of globalization (such as international trade networks; Malaizé and Sindzingre, 1998). They alleviate poverty by reducing the cost of access to capital, credit and labour, and via mechanisms supporting mutual assistance. Shared norms simultaneously induce discontinuities and threshold effects in the potential benefits of global exchanges.[34] They foster social fragmentation (discrimination, prejudice) and build separated social identities that receive different payoffs for their actions; orientation choices and economic behaviour (Akerlof and Kranton, 2000); lower participation in social activities; hinder collective action; and bias the redistribution of public resources towards certain groups and against others. The multiplication of nation-states in history reveals the relevance of state institutions in creating and attenuating redistributive conflicts. Ethnic membership is also an expression of unequal access to and competition over public goods, infrastructure, political and natural resources, and of the incapacity of state institutions to provide credible solutions (Sindzingre, 2002).

Globalization's positive effects may be locked in by group-building institutions, which, politically or economically, exclude groups from its benefits (for example, politicians using public revenues from external trade for redistribution towards their ethnic group). Parallel with other factors, though, globalization may exacerbate competition and social fragmentation, while eroding the previous mechanisms of control of opportunistic behaviour (extreme cases being the conflicts fuelled by the international exploitation of natural resources).

Finally, self-reinforcing poverty traps may be built by social institutions, on which globalization may have an aggravating impact. Social discrimination against occupational or ethnic minorities, for example, gives rise to poverty traps in creating differences in returns to productive characteristics.[35] Similarly, when exposed to a market economy, kinship arrangements and their rules of reciprocal exchange and obligation may distort labour markets. Institutional forms (kinship, modern organization of the firm) seem to be stable, but their contents are skewed towards new functions and effects (recruiting on the basis of kin and not competence; excluding non-members). Globalization may even reinforce kinship institutions, as opportunities for improvements in the context of uncertainty may lead to a preference for the status quo (collective conservatism)[36] and hence build poverty traps. Poverty traps are induced by conservative risk-coping and investment strategies, as the poor are close to subsistence and invest in assets with low returns while the wealthier invest in higher-risk assets with higher returns.[37]

Virtuous processes induced by globalization

In contrast, globalization may induce positive institutional changes in local institutions. Reliance on social transformation, mediated by public policies such as legal reforms regarding social status or land (rights, contracts), may have positive effects in terms of poverty reduction, efficiency and productivity.[38] Conversely, the pre-existence of certain micro institutions when economic activities are exposed to globalization may trigger virtuous paths that reduce poverty. Higher levels of participation lead to better economic outcomes and better public goods provision (Banerjee and Iyer, 2002). Following the dismantling of state marketing boards, producers who constituted membership-based organizations and associations were more able to overcome collective action problems and the fragmentation of customary institutions, and act as intermediate institutions *vis-à-vis* international markets. Within the same rural areas, households that have organized themselves (choosing crops, for example) in order to diversify their source of income have better exploited globalization and, in contrast, households that were least diversified incurred more negative effects. In Mali, for example, some households engage simultaneously in cash crop (cotton) and food crop agriculture, in tandem with tenancy arrangements on cocoa plantations in neighbouring Côte d'Ivoire (the world's main exporter), thus adding the remittances to their income through the use and adaptation of traditional household structures (such as large households) (Hilborst *et al.*, 1999).

Poverty traps compounded by macro conditions

Threshold effects may emerge at an aggregate level, which translate threshold effects occurring at a micro level – the micro–macro distinction is used only for heuristic reasons as there is a continuum between these levels and a combination of institutional forms and content. This is shown by the examples of poverty traps created by trade structure and the institutions coping with external shocks. Poverty traps may be generated through reciprocal interactions between the macro and the micro levels, involving public institutions and policies, and individual responses mediated by social institutions. The continuum between micro institutions (organizing status and rights according to age, gender and occupation) and macro institutions (the public or modern sectors) may build traps that separate the poor from individuals who can trigger a process of wealth accumulation (Azariadis, 2004).

The cumulative processes created by the interaction between public policies and institutions

In low-income countries, particularly commodity-exporting ones, the cause of poverty is less globalization than the structure of economies and exports. An increase in trade does not reduce poverty in low-income countries (the international poverty trap that stems from commodity export dependence) (UNCTAD, 2004). State institutions and policies, however, contribute to a cumulative process and threshold effects, in creating devices that either maintain, aggravate or reduce dependence, and modify the existing economic structures. Price stabilization schemes, monopsonies and marketing boards have been implemented by states as interfaces between global markets and producers. In some countries, these institutions – combined with political economy and economic elements – have been inefficient, inequitable or even predatory (for example, when taxing producers in order to finance political interest groups) (Deaton, 1999). International commodity price volatility, however, includes thresholds below which peasants limit risk, investment, loans and diversification in more productive crops and non-farm activities (and above which they do).[39] Depending on particular institutional and economic combinations, interlinked contracts implemented by state stabilization and marketing schemes have smoothed the pass-through of world price changes and protected commodity producers from volatility. They have been efficient risk management tools in the context of inefficient market mechanisms, financing agricultural inputs, providing credit, stabilizing income expectations, and providing insurance, as for cocoa in Côte d'Ivoire or cotton in West Africa.[40]

Domestic trade liberalization policies starting in the 1980s have exposed commodity producers to the large and asymmetrical effects of world price volatility.[41] After the dismantling of stabilization schemes, non-state institutions did not fully substitute for their functions, domestic and external. Market mechanisms alone may be unable to provide the security previously provided by state schemes. Local market mechanisms controlling opportunistic behaviour among intermediate private buyers may be inefficient, with producers having to cope with the unpredictability of prices and profits, and limited access to credit, capital and inputs. In SSA, the historical weakness of the domestic private sector sometimes made lose out on opportunities offered by liberalization, and these were captured by intermediaries.[42]

Market power shifts here from producers to a small number of concentrated private actors. The liberalization of the coffee market, for example, did not improve price transmission, and private actors became concentrated at the processing and retailing levels (Sheperd, 2004). In Côte d'Ivoire, subsequent to the liberalization of the palm oil sector, production and quality were reduced because of the cost of inputs, segmentation of production, and the disappearance of the public institutional framework that provided security, learning, co-ordination and sanctions on opportunism (Cheyns *et al.*, 2001).

Rural institutions, however, may also be inefficient because of covariate risk (climatic, for example). Rural associations may be affected by problems of inadequate information, transaction costs incurred from limited scale, problems of co-ordination and collective action, weak market bargaining power *vis-à-vis* a few international trading firms, and efficiency–equity dilemmas that are detrimental to the poorest producers.[43] Producers have responded to exposure to international price fluctuations with permanent income strategies leading to over-production, as for cocoa in Côte d'Ivoire, in turn increasing price volatility. The known threshold effects stemming from the fallacy of composition typically constitute a trap that results from problems of information and collective action. There have been winners, but inequalities may also have been created – when benefiting from better access to markets (such as roads), for example, commodity producers may have benefited more from liberalization than those producing food crops (Bourguignon and Morrisson, 1992). The ways public and social institutions, as well as the interactions between them and with market structures (for example, increasing returns), are modified by liberalization channel the impact on the rural poor. Discontinuous and non-linear characteristics of this impact were pointed out by Rosenstein-Rodan (1943): rural markets at early stages of development suffer co-ordination failure, multiple equilibria and under-development traps with lack of growth under certain thresholds. Combining the macro and micro levels, under-development traps create threshold effects. As shown by Hoff (2000), using the example of China, micro features (modernization, diversification) may determine local poverty traps among farm households. Various spill-over effects (externalities) may lead to a series of traps (in terms of investment or technology) with low innovation and inefficient institutions.

Public institutions and policies as instruments of transformation

Globalization may trigger institutional change. State institutions and policies, however, reorientate the effects of globalization on institutions and poverty as well as the effects of local institutions on poverty – for example, industrial, trade and social policies. Government policies, not only institutions, contribute to the formation of poverty traps, and are endogenous to these institutions (state failure, political failure; see Besley and Coate, 1998, quoted in Hoff, 2000). Depending on the environment (for example, the political economy), policies may be affected by credibility problems and be unable to reduce poverty or attenuate shocks (Ravallion, 2001).

Public policies, laws and institutions also have the capacity to sustain a change in social norms and micro-political economy mechanisms in a way that benefits the poor, when combined with political institutions – for example, democracy – although democracy is endogenous to the political economy (the effective content of democratic forms may be clientelism). A wider distribution of benefits not confined to the rich or to individuals who are affiliated with a particular group falls within the domain of public policy and the legal apparatus (one example being affirmative action). Effective local democracy and accountability in rural areas have positive effects on poverty (Foster and Rosenzweig, 2001), and democratic countries seem to be less ensnared in the 'fractionalization-as-politics' trap (Milanovic, 2003b, on the case of SSA).

Public policies have positive impacts on institutions, on their effect on the poor, and on the effects of globalization, when they correct market failures – for example, through facilitating access to finance (on India, see Besley, 2003; Burgess and Pande, 2003); supporting rural industrialization (Foster and Rosenzweig, 2003); and basic public services, such as female education (Ravallion and Datt, 2002). Public policies may support market-related institutions as they did historically for merchants during the transition to capitalism (Milgrom *et al.*, 1990). They may similarly ease the global demand for goods produced by the poor (Basu, 2003). Particular combinations of institutions, policies and economic structures, however, are what ultimately determine the impact of globalization. Elements taken separately have unpredictable effects, but the outcomes of their combination may be growth and poverty reduction.

Conclusion

This chapter has focused on the relationships between globalization, poverty and institutions. While the relationship between institutions and growth is now a matter attracting increasing attention, this has been less the case regarding the whole causal chain linking globalization, institutions and poverty. Assessments in the literature of the impact of globalization on the poor have revealed a marked divergence. It has been shown that the threshold effects created by institutions constitute a dimension of the explanation of these diverging impacts. The triangular causalities that relate globalization, poverty and institutions constitute multiple, endogenous, cumulative and non-linear processes.

Institutions mediate the impact of globalization on the poor. Institutions have been analysed following an original theoretical approach that views institutions as composite arrangements. It disaggregates the concept of institution according to its various components (form and content) and the particular combination of these. Because institutions are composite arrangements, they create discontinuities and generate threshold effects on the positive or negative effects of globalization, with social institutions and norms being a case in point. Institutions may also generate poverty traps. These threshold effects may be compounded by public institutions and policies. Conversely, globalization may induce a positive transformation of institutions, while institutions similarly enhance the impact of globalization and trigger virtuous paths that reduce poverty.

Notes

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1. Definition provided in Bordo *et al.* (2003).
2. As defined by the World Bank, quoted in Milanovic (2003a).
3. Nissanke and Thorbecke (Chapter 2 in this volume). Another well-known issue is the elasticity of poverty reduction to growth and initial inequality, see Bourguignon (2004a).
4. Rodríguez and Rodrik (1999); see, in a historical context, Clemens and Williamson (2001).
5. As highlighted by Kaushik Basu (see Chapter 12 in this volume).
6. A conceptual framework is in Aoki (2001).
7. Levels of taxation or infrastructure are assimilated to institutions in the World Bank's *World Development Report 2005* on the investment climate (World Bank 2005).
8. On the links between institutions and growth, Rodrik *et al.* (2002).
9. States have rather tended to multiply in the twentieth century, see Alesina and Spolaore (1997).
10. With exceptions, of course, on the necessity of appropriate institutions for harnessing the benefits of globalization; see Kozul-Wright and Rayment (2004).
11. Non-linearities of the effects of globalization on the poor have been highlighted in many studies – while cumulative causation has been featured in theories of economic development since the 1950s – but without the focus on institutions; see Agénor (2002b).
12. This indeed fuels the heated debate on institutions, geography, policies or structures (commodity dependence, terms of trade volatility) as fundamental determinants of growth.
13. Speeds of change also vary within categories of institutions: monetary institutions may be changed more rapidly than labour institutions; in social institutions, codes of conduct may be changed more easily than kinship institutions.
14. See Greif (1989) on the contrast between the Maghribi and Genoese traders, creating different institutions and trust-building devices in the course of their trade activities.
15. For defenders of geography, see Bloom and Sachs (1998), Easterly and Levine (2002).
16. Bardhan (1993), Przeworski and Limongi (1993), Aghion *et al.* (2002).

17. See Reno (1998) on the globalization of warlordism in SSA.
18. On the credibility of political institutions in seventeenth-century England as a key factor of growth, see North and Weingast (1989).
19. See Ravallion (2004) on perceptions of inequality that differ depending on whether weights are given to people or countries.
20. Engerman and Sokoloff (2003a), Robinson (2000) on the determinants of inequality in Latin America as primarily political.
21. On oligarchic political economy, see Bourguignon and Verdier (2000).
22. Against the thesis of the 'curse' defended by Sachs and Warner (2001), see Blomström and Kokko (2001) on Sweden and Finland; on the positive relationship between resources and growth when associated with appropriate political institutions, Sala-í-Martín and Subramanian (2003), Acemoglu *et al.* (2001).
23. See Barro (1997) on the non-linear relationship between political institutions (democracy) and growth.
24. Wars and conflicts have been viewed as the historical root cause for the emergence of states in the Western world, see Tilly (1985).
25. For example, by the World Bank, along the lines of Amartya Sen's conception of poverty.
26. On the persistence of racial markers because of distorted cognitive processes, see Loury (2004).
27. On the 'network advantage' of traders in SSA, see Fafchamps (2002).
28. As in Côte d'Ivoire, where increasing competition and direct exposure to international markets have called into question the customary rights allocated to Burkina Faso tenants, sometimes leading to their expulsion.
29. In particular, the disappearance of rights 'in man' (slavery, forced labour), see Engerman (1973); and Feeny (1989) on the replacement of rights 'in man' by rights 'in land' in Thailand in the nineteenth century.
30. Mwabu and Thorbecke (2004), Banerjee (2000) on the returns of land reforms.
31. Alchian and Demsetz (1973) note the increased value of fur for the American Indians that led them to devise private rights in land that were consistent with a market economy.
32. On separate accounts in the case of Côte d'Ivoire, see Duflo and Udry (2003).
33. On the inefficiencies of traditional social arrangements, see Platteau (1997, 2000).
34. On the detrimental effects of social heterogeneity and fractionalization, see Alesina and La Ferrara (2001) and Alesina *et al.* (2002).
35. Van de Walle and Gunewardena (2001) on the example of ethnic minorities in Vietnam.
36. Hoff and Sen (2004), relying on Fernandez and Rodrik (1991).
37. Among a vast literature, see Zimmerman and Carter (2003).
38. Banerjee *et al.* (2002) on the reforms of tenancy laws in West Bengal in the late 1970s.
39. Among a vast literature on shocks (price fluctuations, weather), vulnerability and rural risk management, see Fafchamps (1999, 2000) and Dercon (2002).
40. On the effects of liberalization of cotton, see Poulton *et al.* (2002).
41. Cashin *et al.* (2002); on the asymmetric effects of downturn on poverty, see Agénor (2002a).
42. On the oligopolies in the cotton sector in Zimbabwe, see Larsen (2002).
43. On the cocoa and cotton sectors in West Africa after liberalization, see Araujo-Bonjean and Combes (2001).

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12

Globalization, Poverty and Inequality: What Is the Relationship? What Can Be Done?

Kaushik Basu

The questions

Forbes Online of 27 February 2003[1] offers some information about the world's ten richest people. Much of the information would cause little surprise. The list shows that big money comes from software innovation, retailing scale economies, the business of oil, investment luck, and inheritance. What is, however, really striking – more so as one ponders the matter – is just *how* rich these ten people are.[2] Together they had, in 2002, a net worth of US$217 billion, ranging from Bill Gates in the lead with US$40.7 billion to John Walton (son of Sam Walton, founder of Wal-Mart) at the rear with US$16.5 billion.

To understand how staggering this is, let us look at Tanzania in the same year, 2002. In that year Tanzania, with a population of 35 million, had a GDP of US$10.15 billion (World Bank, 2004). In other words, if one assumes that the ten richest people earn a return of 5 per cent on their assets,[3] their earnings in one year would be roughly equal to the total annual earnings of the entire population of Tanzania. And, of course, Tanzania has its own share of the very wealthy. If we leave them out – say, 1 per cent of the richest Tanzanians – and look at the poorer end of the spectrum, there will be a gap between the world's richest and poorest that is difficult to comprehend. If we leave out individuals and turn to nations, the gaps, of course, shrink, but are still striking. Take the richest and the poorest countries (in terms of per capita income) in the list of 152 nations[4] for which detailed data are provided in the *World Development Indicators 2005* (World Bank, 2005). These are, respectively, Norway and (tying at the bottom rank) Burundi and Ethiopia. Ethiopia and Burundi have an annual per capita income of US$90 and Norway US$43,400. If we make PPP corrections on these, they get a bit closer, but the gap is still huge. A person picked at random in Norway is expected to be 60 times richer than a person chosen randomly in Burundi, even with a PPP correction.

I do not present these numbers to advocate any obvious normative proposition, such as how bad governments are in the Third World to leave their citizens so poor, or how mean governments are in the industrialized nations not to divert more money to poor nations. Once one takes into account the realities and constraints within which policy-makers and politicians in poor and rich nations function, none of these propositions survive – at least not in any obvious way. There are many changes that each of us may want, but not one of us may be empowered to do anything about them.

The reason I present these statistics is to draw attention to the fact that, even though the debate on whether global inequality has risen or fallen in recent times may be unresolved, the *amount* of inequality is staggering; the hiatus between the richest and the poorest people is too large and the *extent* of poverty (whether or not it has risen in recent times) is unacceptable. I like to believe that there will come a time when, looking back at today's world, people will wonder at how primitive we were to tolerate this. From this observation, to proceed to answering the question 'what should be done?' turns out to be much harder than persons of action commonly suppose. That is the reason why, despite having so many persons of action, inequities have persisted from the time of the pharaohs (and in fact recorded history) to the present time. What has to be recognized is that the intellectual design problem of how to mitigate poverty is a difficult one, and that could be so even if all of us were single-minded in wanting to remove poverty, and we had the science and technology at our disposal (as we probably already do) to remove everybody's poverty. This is because, in contrast to a single individual, for a group of persons to translate their preferences into actions can be a very difficult problem, as rudimentary game theory teaches us.

The aim of this chapter is to study the relation between globalization, inequality and marginalization, and to ask policy questions about what we should do. I shall review briefly the empirical literature on globalization, inequality and poverty, and the possible interconnections between these, and argue that such analysis ought to be combined with theoretical analysis, which allows us to explore the realm of the possible – of things that may not have happened as yet, but *could* happen. I shall argue that, even if our empirical verdict remains ambiguous, we can think constructively about policy and agency. While there is a considerable literature on the trade-off between inequality and growth,[5] what is unusual in this chapter is its attention to the trade-off between poverty and inequality. This allows us to formulate some clear rules about how much inequality ought to be tolerated in society. The chapter formalizes the concept of a 'poverty-minimizing level of inequality'.

The facts

Has globalization led to more inequality or less? This question has greatly exercised the minds of many analysts. The reason why it has loomed so large in our debates is that, for many ideologues, how we answer this question amounts to a verdict on globalization. I shall, however, take the view that seeking a verdict on globalization is a hopeless project. First, it is too catch-all a term and therefore it can be good and bad, depending on which aspect of it we are looking at, in which period and at which location. When the Spaniards came into contact with the Incas in the early sixteenth century, that was a step in globalization. And judging by the fact that the native population of the New World rapidly declined under the combined might of the sword and new bacteria, clearly this globalization was not good for the native population. And even if it could be argued that the natives are better off *today* than they would have been had they remained 'undiscovered', it could still be argued that (barring the case where their discount factor was indistinguishably close to one), their welfare, aggregated over the past few centuries, has been affected adversely. On the other hand, when the British came into contact with the Chinese of Hong Kong, that was also a step towards globalization, and it is maintainable that on this occasion globalization benefited all parties involved.

This diversity of experience suggests two things – that a single answer for the effect of globalization is too much to expect, and that globalization is *potentially* beneficial for all.[6] The latter suggests the need for policy design that can convert the potential benefit into actual benefit, and that will indeed be the driving motive behind the policy analysis in this chapter. But let me begin with the facts. Has inequality increased in the world? We shall see that the answer is mired in debate. If we take a very long-run view, the answer is fairly transparent. Over the past five centuries, the world has become more globalized and much more prosperous, and, if we consider interregional inequality (in contrast to interpersonal inequality), it is clear that inequality has grown.

The fact of globalization, as measured by trade volumes and capital flows, has been written about a lot (Basu, 2004a; Bhagwati, 2004; Wolf, 2004). The total value of global exports in the year 2002 was US$6,455 billion, up from US$3,452 billion in 1990; and the total amount of FDI globally in 2002 was US$631 billion, while it was US$202 billion in 1992 (World Bank, 2004). As far as prosperity and inequality are concerned, though, there is scope for debate about whether global regional inequality has increased or decreased since the 1970s/1980s,[7] the trend, viewed over a long stretch of time and measured as the ratio between the richest and the poorest, seems to be an unequivocal deterioration. According to the calculations of Maddison (2001), displayed in Table 12.1, if we track per capita GDP of large regions of the world, the growing disparity is obvious. The richest region was 1.8 times richer than the poorest region 500 years ago, whereas, currently, the richest region has a per capita income that is twenty times the income of the poorest region.

What has happened in recent times remains more controversial (see, for example, Melchior 2001; Bourguignon and Morrisson 2002; Galbraith 2002;

Table 12.1 Levels of GDP per capita, 1500–1998 (in 1990 PPP dollars)

	1500	**1700**	**1913**	**1998**
USA	400	527	5,301	27,331
Sweden	695	977	3,096	18,685
UK	714	1,250	4,921	18,714
Japan	500	570	1,387	20,413
India	550	550	673	1,746
China	600	600	552	3,117
Africa	400	400	585	1,368
Ratio of richest to poorest	1.8:1	3.1:1	9.4:1	20:1

Source: Maddison (2001).

Milanovich 2002; Heshmati 2004; Naschold 2004).[8] A comprehensive way of measuring inequality is to compute the Gini coefficient. If we do this for nations, what do we find? Interestingly, the answer depends critically on whether we use population-weighted or unweighted data, and a part of the controversy is caused by this difference. If we use population-weighted data, this means that we pretend that all Chinese earn the per capita income of China, and all Indians earn the per capita income of India and so on, and then compute the Gini coefficient of the world. The use of unweighted data means that each country is treated as one person earning the per capita income of that country. So evidently both methods have their shortcomings. It should be recognized that this problem is encountered in economics at various levels. Even within the household there is often much inequality, and this is especially significant for households that have internal conflicts of interest (Basu, 2006). But thanks to the inadequacy of data we are often compelled to treat the household as a single decision-making unit. If we go the route of using unweighted data for each nation, then we find that the Gini coefficient of inter-country inequality has grown in recent decades (Milanovic, 2002). On the other hand, if we use population-weighted data, we find that the Gini coefficient has been declining slowly but almost monotonically since the late 1960s, with the pace of decline picking up a little in the 1990s (Melchior, 2001; Melchior *et al.*, 2000). The latter is driven in large measure by strong economic growth in China since the late 1970s and India since the early 1990s, since population weights of these countries are very high.

It should now be clear that, depending on exactly what is chosen as the measure, almost any evidence can be found. Is one measure clearly superior to another? If we are interested in *individual* wellbeing (as much of economics is), it may seem right that we use population-weighted data. To treat China and Canada as comparable units does not seem right. But there are two possible responses to this. Given the significance of the nation-state as a political unit, and given that our political perceptions are shaped by awareness of inter-country situations, there may be a case for trying to find out what is happening to inter-country incomes. Second, if we are interested, ultimately, in the individual, we should be looking at neither the population-unweighted nor population-weighted inter-country inequality, but rather global interpersonal inequality. This is because counting all the people of China as one person is to lose vital information, and to treat all the people of China as if they each earn the per capita income of China is also to lose important information, especially since inequality in China has been growing. The same is true of India. Fortunately, how this debate is resolved is not critical to what I want to argue here.

If I were to try to associate global inequality with globalization, I would take the longer-run view of what has happened, since globalization is a process that has been with us for centuries. It has gone through some brief periods of retreat (Williamson, 2002), but the long-run process has been a slow and steady one of the globe coming together. The long-run regional inequality (and I am not equating this to interpersonal inequality and poverty, though interpersonal inequality has probably moved in tandem with regional inequality) seems also to have increased over the very long run. But no matter what view we take of the trends, it seems easy to argue that there is reason for concern. First, while the Gini coefficient is important, the gap between the richest and the poorest is important as well. If a sizeable population feels increasingly marginalized because they find themselves becoming poor relative to global wealth, this is bound to stoke political volatility, and even if that did not happen, this would seem to me to be normatively unacceptable. And, as we saw, the gap between the poorest and the richest is expanding if we take a long-run view of this. Second, no matter what has been the trajectory and no matter what its connection to globalization, the level of inequality that we see today, as cited at the start of this chapter, is far too large for complacency.

The positive and negative fallouts of globalization

To understand how globalization can have the negative fallout of marginalizing people, consider the case where the world markets for goods and services are suddenly and fully opened up. Given that a disproportionately large share of the world's GDP comes from the industrialized nations, it seems reasonable to predict that the prices of goods in poor nations will converge more rapidly towards prices in industrialized nations than the latter converge towards the former. In other words, international prices of goods and services will move to somewhere between prices in industrialized nations and prices in developing countries, but closer to the former.

Labour being less mobile than goods and services, it seems reasonable that, for sections of the labour force in poor nations, and especially for the illiterate and unskilled who are unable to take advantage of the new technology, wages will lag behind prices.[9] Hence, for some of the poorest people there can be a period of increased hardship before the benefits of opening up trickle down. This is one of the important problems of rapid globalization. To a certain extent, the reported increase in inequality within poor nations (see Banerjee and Piketty, 2005, for India) is a consequence of this. Conversely, it is natural to expect that, with globalization, the skilled end of the labour market in poor countries will benefit disproportionately. Their access to modern technology will increase their pay. Also, as their compatriots find jobs in developed countries and move out, the shortage of their skills in the home country will push up the price for their work and make them rich. Banerjee and Piketty's (2005) study shows that the group that has gained disproportionately in India since the 1990s is the richest 0.01 per cent of the population. It is not hard to show that, as income stretches out in this manner for some, the poorer people are not just poorer compared to the richest, but their absolute welfare may decline because of the rise in the price of goods or by their becoming excluded from the 'market'.[10]

During a field visit to the village of Jakotra, in a remote corner of Gujarat, close to the border of Pakistan, I found a palpable concern among the poor villagers about what globalization might do to them (Basu, 2004b). The villagers of Jakotra earn their living largely from handicrafts, mainly embroidery work on textiles. The villagers were concerned that their meagre livelihood could be wiped out by competition from some international producer who decides to manufacture embroidered clothing in large factories and export to India. Talking to the villagers, I realized what a double-edged sword is globalization. On the one hand, they have benefited since the 1990s because of globalization and their ability to sell their product in distant lands and cities,[11] but on the other hand, they rightly feared that this prosperity may not last. Moreover, these people are still poor enough that the end of prosperity for them could mean acute poverty, destitution, even starvation. When that happens it would clearly not be good enough to point out to these people the *potential* benefits of globalization. The right policy is to craft government interventions that provide a safety net for the poorest people during times of transition.

Something analogous is true for developed countries concerned with the problem of outsourcing. The overall benefits of outsourcing are clear enough. If the US government had thwarted competition by blocking Japanese cars from coming into the country when the US automobile industry began to erode because of competition from Japan, it is likely that there would be many more automobile workers in the USA today, but the country would also be poorer for that. In the early 1990s it looked as if the Japanese economy would overtake that of the USA, but it was the openness of the IT sector in the USA, drawing talent from all over the world, which prevented this from happening. Something similar is true for the current outsourcing problem. To block outsourcing will mean more people in the USA doing call centre jobs, data filing and rudimentary software work, but it will almost certainly mean the loss of competitive advantage for the USA and an overall loss for the country. But this is not to deny that there are people who are being harmed, certainly in the short run, by outsourcing. The right policy here, as in the case of poor countries facing competition, is not to stop outsourcing, but to devise policies to soften the consequences of competition for the population that is harmed by it. This policy question is addressed later in the chapter.

I construct a simple model further on in the study to illustrate some of the policy dilemmas mentioned in this chapter, and the risks of globalization. But I should emphasize that the message of this must not be read as being against globalization. The potential benefits created by the easier flow of goods, services, software products and labour are enormous, and to stop these would be a gross error. At the same time, the fear of these getting stopped must not lead us to praise all aspects of globalization. By pointing to its negative fallout, this chapter hopes to encourage policies to counter them and to better distribute the spoils of globalization. Not only should this be viewed as a moral imperative; to ignore the marginalizing groups is to risk political instability and war in the long run.

The quintile axiom

In designing policy it is important to try to spell out clearly what are the ultimate objectives. A new tax or subsidy, or a new restriction on trade, is seldom good in itself. The goodness or badness of such action depends on what it does to what we value ultimately for society. There may indeed be philosophical difficulties in spelling out, once and for all, ultimate or basic value judgements, as Sen (1970) argued. New situations and new policy conundrums may compel us to abandon some judgement that we had earlier held to be fundamental.[12] But keeping in mind that new situations and new choices may make us want to mould our objectives, we must ask what is it that the policy-maker should try to maximize. I have elsewhere (Basu, 2001) suggested a simple normative rule, which has attractive properties, not least of which is simplicity. Where traditionally we associate each country's main objective with its per capita income, the normative criteria I have proposed elsewhere and am going to maintain here would require us to associate it with the per capita income of the poorest 20 per cent of the population. I call this the 'quintile income' of a country.

More formally, let the income profile of a country with n people be given by $(x_1, x_2, \ldots, x_n)$ and assume, without loss of generality, that individuals are so named that

$$x_1 \leq x_2 \leq \ldots \leq x_n$$

Clearly, this country's per capita income is given by

$$y = (x_1 + x_2 + \ldots + x_n)/n$$

On the other hand, the country's quintile income is given by

$$q = (x_1 + x_2 + \ldots + x_t)/t$$

where $t = n/5$.

What is being suggested is that, in evaluating a country's wellbeing, we should focus on the country's quintile income. Henceforth, this normative principle will be referred to as the 'quintile axiom'.

The quintile measure should not be confused with a poverty measure (or inverse of a poverty measure) of a society. Hence, the objective of raising the quintile income of a country need not coincide with the objective of lowering poverty. This will certainly be so if we use an absolute measure of poverty (which can become zero and so leave no further target unfulfilled, whereas that can never happen with the target of maximizing quintile income) and may not be true even for most relative poverty measures. The quintile axiom I am recommending is more of an *overall* normative target with which policy-makers should be concerned. At first sight this indicator may seem arbitrary, but, as a rule, any single indicator for measuring a nation's wellbeing is arbitrary until we get used to it.

There are ways in which the quintile axiom or the general idea behind it can be generalized. We could, for example, give weights to the incomes of people at different levels of poverty, with the poorest people getting the highest weights, and then look at the weighted per capita income of society (some of these variants are discussed in Basu, 2001). But I am interested to suggest here a measure that is simple and easy to understand. The quintile axiom is a suggestion in that spirit. It is worth seeing how evaluating an economy using the quintile income not only makes a large difference to the absolute numbers, as is only to be expected, but can also change the rankings sharply. Table 12.2 gives the per capita incomes and quintile incomes of a selection of nations. As expected, Norway and Japan move up the ranking ladder sharply and the USA moves down. At the poorer end, Romania, India and Bangladesh make relative gains, whereas China, somewhat surprisingly, loses out. The sharpest losses caused by shifting attention from per capita income to quintile income occur in Peru, Guatemala and Sierra Leone.

The quintile income measure, viewed as an equity-conscious measure of welfare, has several normative advantages. Unlike a policy that tries to minimize poverty or minimize inequality, the objective of maximizing the quintile income has a natural dynamism because it is a moving target. In a country with gross inequalities, this measure will suggest that we focus on the conditions of the poorest people. But if the better-off people are ignored

Table 12.2 Quintile incomes of nations, 2002

Country	**Per capita income US$, PPP**	**Percentage of income accruing to poorest 20%**	**Quintile income US$, PPP**
Norway	36,690	9.6	17,611
USA	36,110	5.4	9,750
Switzerland	31,840	6.9	10,985
Japan	27,380	10.6	14,511
Finland	26,160	9.6	12,557
Sweden	25,820	9.1	11,748
Korea, South	16,960	7.9	6,699
South Africa	9,810	2.0	981
Trinidad and Tobago	9,000	5.5	2,475
Malaysia	8,500	4.4	1,870
Russian Federation	8,080	4.9	1,980
Romania	6,490	8.2	2,661
Peru	4,880	2.9	708
China	4,520	4.7	1,062
Guatemala	4,030	2.6	524
India	2,650	8.9	1,179
Bangladesh	1,770	9.0	797
Sierra Leone	500	1.1	28

Source: Computed from World Bank (2004).

totally and for too long, they will soon be a part of the bottom quintile of society and so deserve attention. If there is full equality in society, this measure does not allow the policy-maker to sit back. Since in such a society the quintile income coincides with the per capita income, the aim now will be to raise the per capita income. Also, a focus on the quintile income does not mean that the growth rate is to be ignored. It is simply that the growth rate should be measured in terms of the growth rate of the per capita income of the bottom quintile of society. And there is the advantage of directness in this new measure. Instead of saying, or claiming, that we should aim to increase income growth and expect the benefits to reach the poorest sections, this measure says we should aim to increase the growth rate of the quintile incomes.

It is true that, unlike the UNDP's Human Development Index, the quintile income ignores non-income aspects of development. But my defence against this criticism is twofold. First, what I am recommending is not that we ignore non-income aspects of development but that, where we would have focused on per capita income, we focus on quintile income instead. Second, I would conjecture that, in general, quintile incomes will have a closer relationship with a nation's various standard of living indicators, such as infant mortality, life expectancy, literacy and so on, than per capita incomes. This is something that will in fact be interesting to investigate later.

The focus on quintile income also suggests how we should view inequality. In general, I would view inequality as undesirable, but poverty as the greater evil. So, the amount of inequality we should tolerate is the amount 'necessary' to minimize poverty, which will be equated here with maximizing quintile income.[13] It is, for example, arguable that a society of perfect equality (at least, given our contemporary values and preferences) would be crushingly poor. Hence, the focus on quintile income will steer us away from attempting perfect equality. It should be evident that the welfare criteria being suggested here are different from the well-known one in which welfare is equated with $\mu(1 - G)$, where μ is the per capita income of the society being evaluated and G its Gini coefficient (Sen, 1976). In this measure, welfare is deflated according to the amount of inequality in the country, whereas in my measure welfare is deflated by the poverty of the poorest quintile of society.

In the next section, a model is developed which illustrates the notion of the 'right' amount of inequality. The model will also show how this may depend on the level of globalization. This naturally gives way to the idea of having to co-ordinate policies across nations, which is what the last section of this chapter will be concerned with.

An illustrative model

I shall in this section develop a simple, highly-stylized model to illustrate some of the principles discussed so far. In particular, the model will illustrate: (i) how the 'quintile axiom' may imply that we have to tolerate a modicum of inequality; and (ii) how globalization weakens each nation's ability to control poverty, and thus directs our attention to the need for inter-country co-ordination of policy.

Consider a world with 'many' identical countries. Each country has a population of n. And of these n people, p are 'productive' and u are 'unproductive' $n = p + u$, $p, u \geq 0$, $n > 0$.

Output in a country occurs because of the work done by productive people. The unproductive live off the externality of other people's work. The amount of work, $h \in [0,1]$, that a productive person does is negatively related to the (proportional) income tax rate, t, that prevails in the country where s/he resides. To keep the analysis simple, I shall assume

$$h = 1 - t \tag{12.1}$$

where $t \in [0,1)$ is chosen by the government and is treated by citizens as exogenous.

The (pre-tax) income, Y, that accrues to a productive person who puts in h units of work is given by

$$Y = Ah, \quad A > 0 \tag{12.2}$$

If every productive person does h units of work, every unproductive person gets an income, y, given by

$$y = ah \tag{12.3}$$

where $A > a > 0$. This captures the externality assumption.

The assumption of linearity – namely, $Y = Ah$ and $y = ah$ – is purely for algebraic simplicity. I could just as well have assumed $Y = f(h)$, where $f'(h) > 0$. What is unusual here, and at variance from textbook models of the economy, is the assumption of externality. I am assuming that when productive people in a country work hard, they benefit, of course, but the (non-working) unproductive people of that nation also benefit, however little. In a more realistic model, the benefit accruing to the unproductive would depend on *how many* productive people there were, but that would not make any significant change to my model and so will be ignored here.

Government's sole activity in this model is to transfer income, through the choice of a tax rate, from the rich to the poor. If the tax rate is t, the post-tax incomes of productive and unproductive people, denoted by, respectively, $\overline{Y}(t)$ and $\overline{y}(t)$ are given by

$$\overline{Y}(t) = (1 - t)Y \tag{12.4}$$

$$\overline{y}(t) = y + \frac{ptY}{u} \tag{12.5}$$

Since each unproductive person receives an equal share of the total amount of tax revenue collected by the government, his/her total post-tax income is a sum of the externality y and the tax subsidy ptY/u.

Using Equations (12.1)–(12.3) to substitute for Y and y, Equations (12.4) and (12.5) can be rewritten as

$$\overline{Y}(t) = (1 - t)^2A \tag{12.6}$$

$$\overline{y}(t) = (1 - t)\left(a + \frac{pAt}{u}\right) \tag{12.7}$$

A typical picture of how individual (post-tax) incomes vary with the tax rate is illustrated in Figure 12.1. We use $\hat{t}$ to denote the tax rate t, where $\overline{Y}(t) = \overline{y}(t)$.

A government that is Rawlsian would be focused entirely on the unproductive people as long as $t \leq \hat{t}$, but would focus on the welfare of the productive people if $t > \hat{t}$. Suppose now that the government is not exactly Rawlsian but follows the more pragmatic quintile axiom outlined above. If $u/n \geq 1/5$ and $p/n \geq 1/5$, it would behave like a Rawlsian. Up to $\hat{t}$, it would equate this society's welfare with the welfare of unproductive people and,

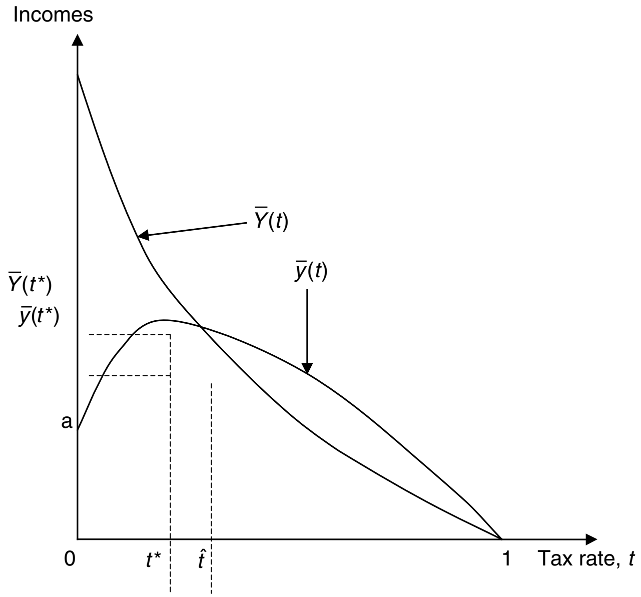

Figure 12.1 Post-tax incomes of productive and unproductive persons

beyond $\hat{t}$, it would equate society's welfare with the welfare of productive people (who are now poorer).

Let us, for now, assume $u/n,\ p/n \geq 1/5$ and assume that

$$t^* = \arg\max \bar{y}(t) < \hat{t} \tag{12.8}$$

Consider now a government that is committed to the quintile axiom trying to decide what tax rate it should choose. Clearly, this government's problem is as follows:

$$\underset{t}{\text{Max}} \min\{\bar{y}(t), \bar{Y}(t)\}$$

Given the assumption in Equation (12.8), we know that the solution to this will coincide with arg max $\bar{y}(t)$. From the first-order condition of maximizing $\bar{y}(t)$ as described in Equation (12.7) we get

$$t^* = \frac{1}{2} - \frac{au}{2Ap} \tag{12.9}$$

It is easy to see

$$\hat{t} = \frac{u(A - a)}{A(u + p)}$$

It is already evident that being concerned about poverty necessitates tolerating a certain amount of inequality. But to see this more clearly, let us focus on a special case. Assume $a = 1$, $A = 4$ and $u/p = 2$.

This implies:

$$t^* = 1/4 \text{ and } \hat{t} = 1/2$$
$$\overline{Y}(t^*) = 9/4 \text{ and } \overline{y}(t^*) = 9/8.$$

That is, a government totally focused on the poor would choose a tax rate of 25 per cent. This would mean that some people would be twice as rich as some other people. This is an inequality that has to be tolerated in order to help the poor. This is the 'poverty-minimizing level of inequality'.

If, instead, a government was committed to eradicating inequality, it would set the tax rate at 50 per cent. In that case, incomes would be

$$\overline{Y}(\hat{t}) = \overline{y}(\hat{t}) = 1$$

In other words, the poorest people would find their incomes reduced, if total equality were to be achieved.

To complete the discussion, let us see how a government committed to maximizing per capita income would behave. Such a government's aim would be to

$$\max_t \frac{\overline{Y}(t)p + y(t)u}{p + u}$$

Taking the population to be constant, this reduces to the following problem:

$$\max_t \, (1 - t)^2Ap + (1 - t)(au + Atp)$$

It is easy to see that, as t decreases, per capita income rises. Hence, such a government would set $t = 0$ and the incomes of the productive and unproductive people would be 4 and 1, respectively.

Up to now, the entire analysis has been done by assuming that there is no movement of workers possible from one country to another. In other words, the economies were treated as if they were closed. To see how globalization complicates the picture, let us now assume that economies are open. Since, in this simple model, there is only one good and no capital, the only way to model globalization is to allow labour to be mobile across national boundaries. I shall consider basically a model of 'real tax competition' (Atkinson, 1999). Workers will want to move to a country where post-tax income is the highest, thereby setting off tax competition between governments. Let us assume that workers will study the tax (and subsidy) structure of different nations and try to migrate to countries where they have the highest (post-tax subsidy) income. Each government sets its tax rate and can decide whom (among all those who so desire) to allow into the country. Let us also assume that, if all countries have the same tax/subsidy rates, then each person stays in his or her home country.

The problems of domestic policy in the event of globalization of the kind just described can be illustrated in many different ways. Let me consider here the case where each country aims to maximize its quintile income. If the boundaries of nations were exogenously closed, we have seen that each nation would set $t = 1/4$. Now, let globalization remove the exogenous hindrance to labour movements.

Note that each country setting $t = 1/4$ is no longer an equilibrium. Suppose one country lowers t, clearly all productive people from other nations will want to migrate to this country. If the government now decides that it will (i) allow some of the productive people to come in; and (ii) not allow any unproductive person to come in, it will clearly be able to increase the income subsidy per capita that it gives to its poorest people. Given the government's aim to maximize the income of its poorest people, clearly this government will be better-off.

From the above analysis it should be evident that there is no $t > 0$, so that, if all governments choose t, we have a Nash equilibrium. It is easy to see that, in equilibrium, every country will set $t = 0$. Real tax competition will result in an erosion of taxation and in equilibrium we will have all productive people earning A (= 4) and all unproductive people earning a (= 1). Each country ends up behaving *as if* it were interested in maximizing per capita income with no concern for poverty or equity. Globalization erodes each national government's power to have equity-conscious policy. The mobility of labour and, in a more realistic model, the mobility of capital, compromises a nation's policy efficacy.

Since, from the point of view of governments, the equilibrium outcome is suboptimal (all governments prefer $t = 1/4$ to $t = 0$), there is evidently a need for the international co-ordination of anti-poverty policies. I agree with Atkinson (1999) that redistributive policies by individual governments are possible, and one must not turn a blind eye to this. But, at the same time, as globalization progresses, there is increasing need for the co-ordination of policies across nations. When we see the enormous poverty in Ethiopia we tend to blame it on its government. While most governments have room to improve their performance, and the Ethiopian government may have more than its share to do, it would be wrong to overlook that how much control Ethiopia has over Ethiopian poverty depends in part on what happens in Kenya, Tanzania, India, China and the USA.

The policy options

From the theoretical construction in the previous section, to move to real-world policy is not an easy task. Countries are at different levels of development and policy instruments available to a government are more varied than choosing tax rates and immigration rules. How can countries co-ordinate policies in such a world? Do we need a central co-ordinating organization, as we have ILO for labour policies and WTO for trade policies, for crafting and co-ordinating anti-poverty and greater equity policies? These are matters about which we can only speculate, marshalling the insights gained from abstract theoretical models and wisdom from empirical studies, and combining them with common sense, intuition and guesswork.

Much has been written about the nature of pro-poor growth in developing countries (see, for example, Klasen 2004) and about the specific problem of pro-poor growth in the context of globalization.[14] Instead of going over the same ground, I want to concentrate here on two policy suggestions that seem to have few antecedents in the literature.

Equity for workers

I briefly suggested in Basu (2004b) that one way to counter the problem of some workers losing out because of globalization – whether they were workers in developed countries losing work to outsourcing, or labourers in poor countries losing jobs to low-cost, high-tech imports – is to give workers claims to a fraction of corporate equity income.[15] I do not mean profit-sharing in the firm where the worker is employed but, more radically, that a fraction of equity earnings from all firms should be given to workers in all firms and even labourers who are currently without work. The full details of this will be complex and will have to be worked out carefully, but the broad idea is that a fraction of equity in firms should be owned by government or some governmental organization on behalf of people in the poorest category, for example, the lowest quintile. Presumably, workers belong to this category and so will be able to partake of the profits earned by firms. So, when work is outsourced and some workers lose their jobs, a part of the extra profit generated by the outsourcing should be earned by the workers, by virtue of their owning equity. This can be an important policy that guards against the excessive marginalization of workers. Moreover, it could help to diminish some of the antagonism that exists towards globalization among workers in both developed and poor countries. Moreover, if it is true that, over time, the share of labour income will decline (see Basu, 2004c, for a discussion), then this scheme will have the advantage of automatically softening some of the impact of this on workers, because a part of what they lose out on because of dwindling employment and labour income they will get back in terms of higher-equity income.

Among the difficult questions that an actual plan will have to sort out is that of inter-country transfers. The discussion in the above paragraphs is conducted under the implicit assumption that this policy will be implemented by each country separately. Maybe that is how we have to start. But in today's globalizing world, in particular given the huge amount of interregional inequality, there is a moral case for extending this, however minimally, to the world as a whole. This will entail developing rules for some intercountry transfer of equity income. In the absence of this, the above economic policy might have the adverse side effect of heightening nationalism. But our institutions of global governance are so underdeveloped that the details of how inter-country transfers can be worked out will need some radical innovation in our international organizations. This relates closely to the subject matter of the next sub-section.

A new international organization for co-ordinating equitable development

My second suggestion is to urge the need for a new international organization or a new division of an existing international organization that helps to co-ordinate intercountry anti-poverty policies. As we have seen above, achieving greater global equality and reducing global poverty may require the use of policy interventions that are co-ordinated across countries. Unilateral effort by a country is likely to cause the flight of capital and skilled labour from the country, and impoverish those who stay behind. Hence, we may get into a Prisoner's Dilemma type of situation, where each country would like to take steps to curb inequality or to help the poorest, but not be able to do so.

The theoretical possibility of this happening was illustrated in the previous section. This is also a very real problem in today's globalized world. Inequality *within* China, India and several other developing countries is on the rise. As argued above, this is closely connected to globalization, and this probably explains why China and India – two of the fastest globalizers – are affected by this problem. Yet there is no institutional arrangement, or even infrastructure, for countering this. The fact that the income gap between the richest and the poorest people in the world as a whole is far greater than the gap that occurs inside any country is a reflection of the fact that we have no global political institution to address this. No government would be able to tolerate this kind of hiatus within its region of control.

That there may be co-ordination problems in trade is well recognized, and we have the WTO to help mitigate such problems. That labour market policies need co-ordination is known, and we have the ILO to address this. For environmental problems we have the UNEP or the GEF. But there is nothing comparable to these for anti-poverty and anti-inequality policies. Yet, as demonstrated in the previous sections, this is an area where the co-ordination problem may be no less acute. Hence, there is clearly a perceived need for a co-ordinating agency. This ties in up with the objective of giving workers an equity stake, as discussed in the previous sub-section. In an ideal world, these stakes should cut across national barriers. This will once again create a need for a global co-ordination agency. The same agency that co-ordinates anti-poverty programmes could also have this as a part of its mandate for the future. To work out the details of this will not be an easy task. My aim here was to float the idea and to place it in the public domain.

Notes

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1. See www.forbes.com/lists/2003/02/26/billionaireland.html.
2. Another striking commonality among these people that should interest academics especially is that three of these ten are university drop-outs (Bill Gates, Harvard; Paul Allen, Washington State University; Lawrence Ellison, University of Illinois).
3. In reality, they earn much more – they would not be among the ten richest if they invested their wealth as poorly as most of us do.
4. The list is comprehensive if one is interested in countries that have populations of more than one million. The list, therefore, omits some very small nations, such as Liechtenstein.
5. There is, for example, a considerable empirical literature that shows how inequality can hamper growth; see, for example, Birdsall *et al*. (1995), and Deininger and Squire (1998).
6. A *potential* benefit for all does not seem to me to be reason for celebration. If it is the case that we expect that the potential will be realized, then, of course, we should celebrate, but the reason for the celebration is not the potential gain but rather the fact that we expect an *actual* Pareto improvement. If, on the other, hand, we do not expect the potential to be realized, it is not clear why we should be happy that there has been a *potential* gain.
7. And debate there has been aplenty: see, for example, Atkinson (1999), Melchior (2001), Milanovic (2002), and Wade (2004).
8. Some of these controversies on global inequality are mirrored in the discussion on global poverty; see Chen and Ravallion (2001); Reddy and Pogge (2003); Reddy and Minoiu (2005).
9. There can also be increased unemployment among the unskilled. This is possible to explain theoretically once we recognize that employing each person entails some cost on the part of the employer (supervising, conflict mitigation with other employees, breakage of instruments of work), and so, unless the productivity of the worker is above a certain cut-off level, it is not worth employing the person even for a zero wage.
10. A simple adaptation of Atkinson's model (1995) could illustrate this.

11. Some recent studies seem to confirm at the level of India what I saw among the artisans of rural Gujarat. India's opening up in the 1990s, far from hurting the handicrafts sector, seems to have benefited it. Through the 1990s, the share of handicrafts exports in the overall manufacturing exports of India has risen from 2 per cent to 5 per cent (Leibl and Roy, 2003).
12. We may maintain that 'one must not kill' (a human being) is a basic value judgement. Then, seeing a friend in terminal condition and suffering from acute pain, we may legitimately revise the basic value judgement to say that 'one must not kill except to relieve a person in pain and in terminal condition'. Sen had argued that the possibility of having to revise what we think is a basic value judgement will always be there.
13. I put the word 'necessary' in quotes to show an awareness that this may itself be malleable. As societal organization changes and our norms and preferences alter, the inequality necessary to minimize poverty may itself change. And in a very long-run policy exercise one may try to change this parameter. For a recent discussion of the twin objectives of poverty mitigation and the control of inequality, see Dagdeviren *et al.* (2004).
14. Many of the references already cited in this chapter deal with this subject.
15. This is derived from a recognition that what is popularly posed as a conflict between labourers in the developing nations and labourers in industrialized countries should, more accurately, be construed as a problem of global capital versus labour (Basu, 2004b; Chau and Kanbur, 2003).

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