

Trade Policy Reforms

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During the last two decades, the policy advice of bilateral and multi-lateral donors to developing countries has been centered on favoring greater market openness and better integration into the global economy. Two major assumptions underpin this advice: (1) that outward-oriented economies appear to have performed better in terms of economic growth and (2) that raising average incomes generally benefits all groups of people, including the poor.

However, these assumptions are now being challenged, and there are doubts and uncertainties about the effects of trade reforms on poverty. In a way, the discussion on trade policy is part of the larger debate on the role of markets and government in development. Indeed, as Kanbur (2001, 1,084) recently put it, “trade and openness is the archetypal, emblematic area around which there are deep divisions, and where certainly the rhetoric is fiercest.”

Aside from the rhetoric and the wider policy choices, assessing the effects of trade reforms on poverty is a complicated task. Measuring the initial levels of trade protection and poverty, and the extent to which these change across time and countries, is not trivial. Moreover, changes in

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trade flows affect poverty through numerous channels. Some links are positive and some are negative so that qualitative analyses are not enough and quantitative assessments (that is, formal numerical models) are needed to establish the final outcome. Meanwhile, trade expansion and growth are essentially macroeconomic phenomena, whereas poverty is fundamentally a microeconomic phenomenon. Analysts need to master techniques developed separately in two specialized areas of the profession. Finally, trade policy itself has become more complex.

Regarding the last point, consider the following example. A trade negotiator of the Caribbean Regional Negotiating Machinery may, in the current environment, have to discuss the implementation of the Cotonou partnership agreement with the European Union, the Everything But Arms Initiative, the Free Trade Agreement of the Americas, and various trade negotiations within the region. At the same time, the negotiator may also have to prepare serious proposals for the World Trade Organization multilateral trade agreements *and* be concerned with the potential poverty effects of each of the alternatives so that he or she can inform the finance minister's counterparts who are preparing Poverty Reduction Strategy Papers for the donor community.

Demand for sound technical assistance in all these matters is increasing. This chapter therefore provides practitioners with thorough background information on the different techniques available to understand and analyze the links between trade reform and poverty. A special effort has been made in this chapter to clarify the general context of trade reforms and their rationale, the different types of trade reforms, and the many channels of transmission between trade liberalization and poverty. Information is supplied on alternative modeling options, from simple data-parsimonious calculations to more complex, data-intensive frontier techniques, and the advantages and disadvantages of each option are emphasized. The political economy issues behind this type of reform are also summarized. Analysis of the links between global trade reforms and global poverty is not included in this chapter. However, some of the methods and results shown here may be applied to assess the country-specific poverty impacts of external shocks, such as those arising from global trade agreements.

In the analysis of trade reforms and poverty, as rightly pointed out by McCulloch, Winters, and Cicera (2001) in their excellent handbook, two major lessons have been learned. First, trade-induced poverty effects are eminently country specific and dependent on the heterogeneous characteristics of poor households. Thus, no easy generalization is emerging, and no universal one-size-fits-all policy should be embraced.

Second, although transmission channels can be multiple and effects can produce opposite signs, one should be able, through careful examination, to identify and measure reasonably well the most important effects in any given country, so that policy makers can be advised how to implement suitable responses to ensure that trade reforms include a pro-poor perspective.

This chapter is structured as follows. The first section considers the context of trade reforms, the various types of reform, and the different rationales behind reform, before briefly reviewing the trade-growth-poverty debate. The second section explores the various channels through which trade reforms affect poverty and the empirical methods used to study the relationships between the two. The third section appraises the policy-making process in trade by surveying the ways institutions, stakeholders, and other factors shape final policy outcomes. The fourth section concludes and summarizes the chapter.

CONTEXT OF REFORM

Types of trade liberalization

Trade policy liberalization includes efforts to reduce the level of protection against foreign goods and services, so that, within a national market, their prices (or availability) are closer to the prices of analogous goods and services produced domestically.

Although apparently simple under this definition, trade policy can involve various complex types of actions, such as the elimination of quantitative restrictions (quotas) or the reduction of tariffs. According to a geographic dimension, there is unilateral, bilateral, regional, and multilateral liberalization. According to the depth of a bilateral or regional reform, there may be free trade areas (wherein partners eliminate trade barriers with respect to each other), custom unions (whereby partners eliminate reciprocal barriers and agree on a common level of barriers against nonpartners), and free economic areas (or deep integration as in, for example, the European Union, where not only trade but also the movement of factors has been liberalized, where a common currency has been instituted, and where other forms of integration and harmonization have been established).

For historic and political economy reasons, trade protection is not uniformly distributed across types of commodities, and certain sectors, particularly agriculture, textiles, and services, have been exempted from previous waves of multilateral liberalization. Thus, trade policy reforms in these sectors may be more complicated, and specific key issues need to be

tackled. In agriculture, for instance, the Uruguay Round Agreement on Agriculture required the transformation of the existing quota restrictions into tariffs. However, it also allowed the creation of more than 1,300 tariff-quotas for various agricultural commodities. Tariff-quota liberalization can be more problematic than straightforward tariff reduction because, depending on the way access to the quota is granted or renegotiated, inefficient and not necessarily least-cost firms can enter the market.

In contrast to merchandise trade, international transactions in services frequently are invisible or may require movement by the consumer or the producer. Four modes of supply are normally identified:

- Mode 1—cross-border supply, similar to the trade in goods.
- Mode 2—consumption of a service abroad.
- Mode 3—commercial presence, whereby the producer, through foreign direct investment, establishes a base in a foreign country.
- Mode 4—the movement of individuals.

Clearly, each of these modes faces different potential barriers, and liberalization can have different consequences depending on the mode.

All of the above mentioned types of reforms are countrywide; however, there is an additional type of import liberalization that is applied only to a specific limited geographic area of a country. This is the discriminatory import regime within an export processing zone. Firms located inside such a zone are allowed preferential access (that is, at lower or zero tariffs) to the imports used in their production activities. At best, this policy has generated additional employment and higher foreign earnings, and, because of the strong backward links, benefits have been transferred outside the zone to the rest of the economy. In general though, this policy should always be considered a less attractive alternative to a countrywide liberalization.¹

A key component of any analysis of the effects of trade liberalization on poverty includes the estimation of the direction and magnitude of trade-induced price changes in goods and factor markets. Obviously, the types of trade policies described above do not affect prices uniformly, and their sectoral, regional, partial, or countrywide characteristics need to be considered in any estimation of their effects. Furthermore, these various types of trade reform present different implementation challenges. Some require straightforward unilateral actions, others imply lengthy and difficult negotiations among numerous sovereign countries, and still others rely on complex administrative procedures and controls. At times, the full or incomplete implementation of the reforms, rather than their typology, is the key determinant of the final price effects.

Rationales for undertaking trade reform: The trade-growth-poverty debate

Global Economic Prospects 2002 (World Bank 2001) suggests that developing countries could increase their incomes by a cumulative \$1.5 trillion between 2005 and 2015 if all countries would progressively enact encompassing trade reforms and, as a consequence, lift an additional 300 million people out of poverty by 2015. The argument that trade liberalization can enhance growth has been a key rationale for undertaking trade policy reform. Greater trade openness, the argument goes, generates two types of gains. It raises *static* allocative efficiency and average incomes. In the medium run, this resembles growth, and, in the long run, a liberal trade regime is the source of *dynamic* gains, principally in terms of higher productivity and more rapid growth.

Static income gains were a positive consequence of the large import liberalization undertaken by developing countries beginning in the mid-1980s. Undisputedly, this import liberalization reduced the prices of intermediate inputs for domestic industries and thus boosted the returns to primary factors.

In the long run, a more open economy should achieve higher growth rates because it offers easier access to new technology, provides benefits derived from increased competition and economies of scale, and may more effectively restrain the corruption and incompetence of the public administration.

Some of these dynamic gains have not been unequivocally confirmed by empirical analyses.² However, cross-country econometric analyses and in-depth single-country case studies have generated a large body of evidence supporting the positive link between liberal trade policies and growth. In either case, a key ingredient in the long-run eradication of absolute poverty is economic growth. Thus, understanding how trade-induced growth (or growth in general) affects poverty deserves a brief digression.

Many recent studies—for example, de Janvry and Sadoulet (1995, 2001), Chen and Ravallion (2000), and Dollar and Kraay (2002)—have focused on the statistical relationship between growth and poverty across countries and time periods. Unsurprisingly, the conclusion from these studies is that growth reduces poverty substantially. Chen and Ravallion found an elasticity close to 3, which means that a 1 percent increase in mean income or consumption expenditure reduces the proportion of people living below the \$1 per day poverty line by 3 percent.

Taken at face value, these estimates may support a rather strong policy implication, namely, that poverty reduction strategies should be based

on growth. There is the key problem of validating such strategies through cross-country evidence. As pointed out by Bourguignon (2003), the heterogeneity of the poverty changes caused by income growth is very large across countries. It is possible to find cases of rapidly growing countries that record no poverty reduction, as well as cases of countries that show considerable poverty improvement that is associated, however, with unsatisfactory economic growth rates. Indeed, only a small share (26 percent in Bourguignon's calculations) of the total variance of poverty effects is explained by differences in growth rates.

Intuitively, accounting for the large, unexplained share of this variance requires an understanding that the same growth rate may, in one country, benefit the urban affluent portion of the population, whereas, in another country, it may help poor rural farmers. Bourguignon (and others) formalizes this intuition by linking poverty reductions to growth in mean income and changes in the distribution of relative incomes, that is, inequality changes.

The link among poverty, growth, and changes in inequality can be employed to reformulate the regression model used to estimate the growth elasticity of poverty. Doing this, Bourguignon obtains two interesting results. First, the introduction of inequality into the regression model doubles its explanatory power, which means that growth and inequality have the same weight when explaining the variance of changes in poverty across countries. Second, by adding the initial level of development, the initial inequality, and the interaction terms of growth to these variables, the estimate of the growth elasticity of poverty becomes more precise. The elasticity depends positively on the level of development and negatively on the initial inequality.

Important implications follow from this work. Although redistribution can be very effective in reducing poverty, in fact, as effective as growth, a usual objection is that a strategy based on redistribution is not sustainable in the long run; therefore, growth is the only viable option. However, Bourguignon (2003) shows that redistribution has a dual effect. It immediately reduces poverty, which is the direct effect, but also it increases permanently the growth elasticity of poverty, making a given growth rate more effective in achieving poverty reductions.

In sum, as Bourguignon puts it, "to achieve the goal of rapidly reducing absolute poverty requires strong, country-specific combinations of growth and distribution policies" (2004, 1).

The following sections outline methods to establish whether trade liberalization can be an element in any of these combinations of pro-poor policies.

TRADE AND POVERTY: TRANSMISSION CHANNELS

If trade liberalization and poverty were both easily measured, and if there were many historical instances in which liberalization could be identified as the main economic shock, it might be easy to derive simple empirical regularities linking the two. Unfortunately, these conditions do not hold.

—Winters, McCulloch, and McKay (2004, 72).

To identify the relationships between trade and poverty is not an easy task. The first difficulties arise in the measurement of poverty and trade openness. Poverty itself is not particularly susceptible to consistent measurement across time. Similarly, trade barriers are not readily quantifiable, particularly when countries rely heavily on nontariff barriers. After poverty and trade openness have been quantified, further complications emerge in the analysis of the different channels (and their relative importance) through which trade affects social welfare and poverty.

Although the links among trade, growth, and poverty may be most important in the long run, trade policies have strong redistributive impacts in the short and medium run. This is a key point because redistributive effects imply that, even if the overall impact of the trade policy is to enhance welfare, some segments of the population may be hurt, with possible negative repercussions on poverty. From a policy perspective, identifying the winners and the losers that result from the policy can assist the design of complementary policies aimed at smoothing negative effects to maximize poverty reduction. (See the “Institutions, Stakeholders, and the Political Economy of Trade Policy Reform” section.)

Trade policies have an impact on household welfare (and subsequently poverty) through the changes they induce in the prices of goods, in factor returns, and in government revenues. A useful way of thinking about how poor households are affected by trade policies is in terms of the farm household. A farm household produces goods and services, sells its labor, and consumes. In this system, an increase in the price of an item of which the household is a net seller increases the household’s real income, while a decrease in this price reduces the income.

It follows that, in the short run, if households cannot modify their production and consumption decisions, trade liberalization will not necessarily reduce poverty. Moreover, many variables influence the effectiveness of trade reforms and the broad-reaching benefits that openness to trade can contribute to social welfare and development. Domestic public policies, institutions, geography, market competitiveness, infrastructures,

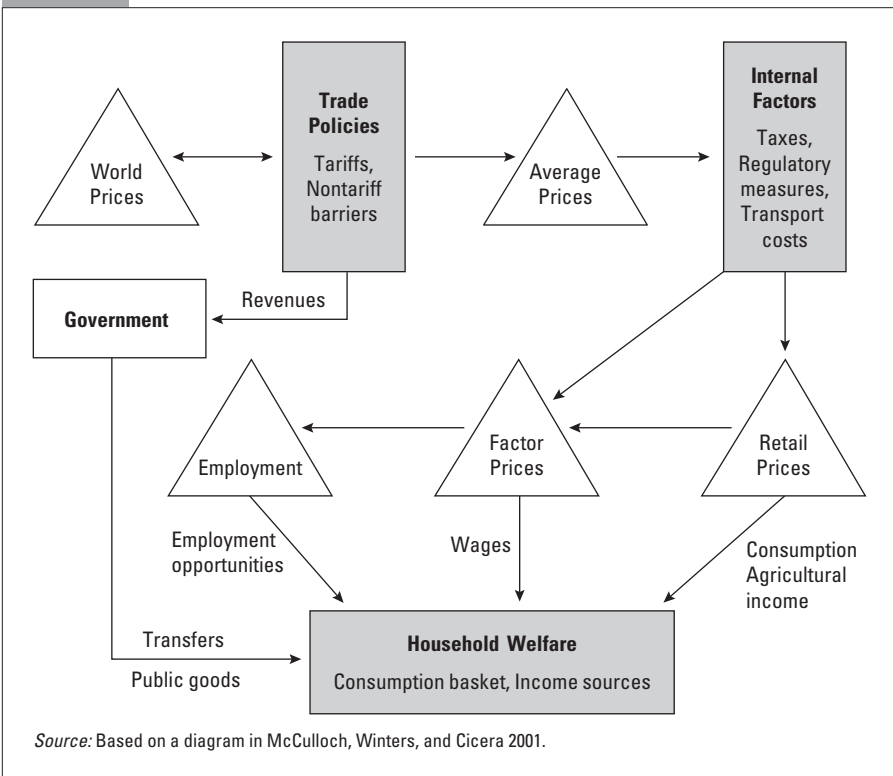
and, ultimately, the composition of the expenditure basket and the sources of income of poor households all have an important role in the success of trade policies. Because these are specific to each country, similar trade policies are likely to produce dissimilar outcomes in different countries. In-depth country-specific investigations are therefore needed to estimate the potential poverty consequences of trade policy interventions.

The investigation of the effect of trade policies on poverty is a lengthy exercise. A first step in the analysis is an exploration of the links between trade policies and household welfare. These links are illustrated in Figure 1.1 and discussed below.

Prices

The most immediate link between trade policies and poverty is through the price channel. Trade policies affect the relative prices of the goods con-

FIGURE 1.1 Trade Policy and Household Welfare



sumed and produced by households. Consequently, they have an impact on household welfare and, in the end, poverty as well. Trade policies act as a filter between the international price and the border price of a good. Once the good is inside a country, its price is influenced by internal factors such as trade costs, institutions, and local competition (Frankel, Parsley, and Wei 2005). These factors soften (or amplify) the effects trade policies have on households. This is the reason movements in border prices caused by international price fluctuations or changes in trade policies are not usually passed through to households one to one.

The effect of a trade policy therefore varies depending on a series of phenomena influencing the transmission of prices from world markets to local markets. For example, the existence of an administrative price for a particular product is likely to isolate that product from any external shock. Similarly, if infrastructure is weak (implying high transportation costs), price transmission may be insignificant or even nonexistent in some areas of a country. Also, the presence of import-competing products and local preferences toward domestically produced products may reduce the extent to which local prices reflect changes in trade policy. Finally, in the case of poorly competitive markets, movements in the prices of goods at the border are likely to be absorbed by traders instead of being more directly transmitted to households. These considerations about imported goods can also apply to exportable goods. In this case, the price paid to households (the farmgate price) is merely a function of the world price filtered by a series of factors such as trade costs (from the farm to the border) and the markups of the various agents involved.

An empirical estimation of the extent to which trade reforms (or international prices) affect the prices faced by households requires time-series data on prices to reckon pass-through price elasticities. According to the empirical literature,³ pass-through elasticities are different across countries and across products. On average, these elasticities have been found to vary by product and geographic area, with averages around 50 percent. In other words, only about 50 percent of a change in tariffs is transmitted to domestic prices.

Labor markets

Another important link between trade and poverty is trade-induced changes in returns to factors of production, in particular, returns to labor. Consequent to trade liberalization, one would expect an increase in labor earnings to occur in developing countries where labor is abundant, because trade theory predicts that protection lowers the real wage of a country's

most abundant factor.⁴ However, this prediction crucially depends on several considerable assumptions, such as full employment and perfect competition in factor markets, and, thus, is seldom confirmed by empirical observations. In practice, the effect of trade liberalization on labor earnings has been ambiguous and therefore needs to be econometrically estimated case by case. Trade policy has been occasionally blamed for increases in unemployment, changes in wage distribution, and a “race to the bottom,” which manifests itself through lower labor market standards, more extensive use of temporary labor, and a decline in job quality. Empirically, trade openness has been associated with a rise in the skill premium, changes in industry wage premiums, and increases in the employment opportunities of individuals. Depending on the structure of the labor market, all these effects are likely to have an impact on poverty.

The labor market in developing countries is often characterized by high unemployment (or underemployment) and a large informal sector. Any upward pressure on wages (especially of unskilled workers) because of trade reforms is likely to be muted in such a situation. This functioning of the labor market can be summarized (and analyzed) according to two different approaches: (1) the trade approach, through which growth in a specific industry will produce an increase in the remuneration of the factor used more intensively by that industry; and (2) the development approach, through which growth in an industry is fueled by a rise in employment at a constant wage.

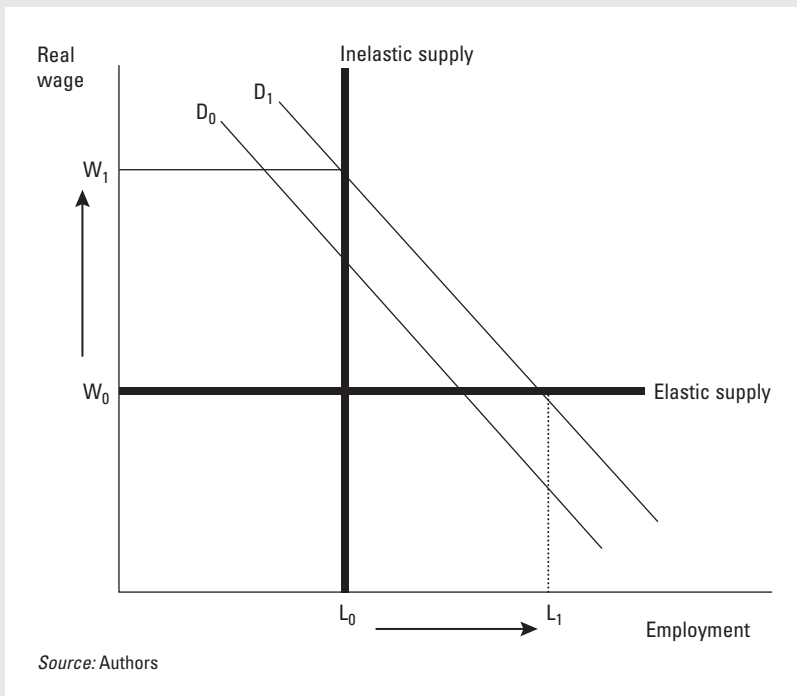
The trade approach and the development approach represent two extremes of the labor market specification: a very tight labor market at one extreme and a wholly flexible labor market at the other (see Box 1.1). Generally, reality falls somewhere in the middle. Furthermore, especially in the poorest developing countries, labor markets are often segmented by skill, gender, and location; wage and employment responses to trade shocks may differ in each segment. For example, given that skilled labor is in limited supply in most developing countries, while unskilled labor is abundant, the trade-induced expansion of a sector employing a mix of skilled and unskilled labor will reasonably be fueled by an increase in skilled wages and unskilled employment. In this environment, the contribution of the labor market to a reduction in poverty would be realized through the expansion in the size of the formal sector rather than the rise in the real wage.

The extent to which trade-related changes in prices influence factor returns (especially wages) has been at the center of an extensive literature, and more sophisticated analyses have been developed that go beyond the two extremes cited above. For example, many studies rationalize wage responses that are in contrast with the above standard-theory explanations

BOX 1.1 The Labor Market: Two Extremes

One of the links between international trade and poverty operates through the labor market. The figure below considers two extreme assumptions: a perfectly inelastic labor supply and a perfectly elastic one. In the case of an inelastic labor supply, when the demand for labor shifts out from D_0 to D_1 , employment cannot increase, and the market must be brought back to equilibrium by an increase in wages from W_0 to W_1 . If some of the workers in this market are poor or belong to poor families, the resulting increase in wages will have a direct and beneficial impact on poverty.

In the other extreme case (a perfectly elastic labor supply), a rise in labor demand results in an increase in employment to L_1 , with no change in wages. The effect on poverty depends heavily on what the additional workers were doing before taking these new jobs. If they were poorly employed or engaged in subsistence activities and earning a wage lower than W_0 , then the impact on welfare would depend on the wage differential between the old and new jobs.



by considering the role of skill-biased technological change.⁵ Other studies introduce more sophisticated labor market specifications.⁶

As in the case of the prices of goods, these aggregate changes in wages and employment need to be translated into microeconomic effects at the household and individual levels, and their ultimate impact on poverty depends on household factor endowments and participation decisions. For instance, some households may experience an increase or decrease in real wages, while others may be able to raise their incomes through new employment or experience a decline in incomes when overall employment is contracting.

Government revenues and public spending

A third channel through which trade policy has an impact on social welfare is government revenues. Because a change in trade policy influences trade flows, trade tax revenues are affected, and, consequently, either compensatory taxes should be levied, or government expenditure in the form of public goods and public transfers should be reduced. As usual, this simple relationship needs to be quantified. Trade tax revenues may even increase if the initial level of tariffs exceeds the revenue-maximizing level⁷ or if quantitative restrictions are replaced by tariffs (and the initial rents were not appropriated by the government). Additionally, reforms simplifying tariff collection (by establishing fewer rates and exceptions) and streamlining customs procedures are likely to boost revenues (and may reduce corruption). Thus, compensating for losses in trade tax revenues may not be a problem at all for certain countries and may be a temporary issue for others.

In a subsequent step, losses or gains caused by variations in government expenditure or compensatory tax payments need to be assessed household by household to measure the impact on household welfare and, ultimately, on poverty. Detailed data on government spending or tax incidence by household often are not available. However, empirical evidence suggests that the influence on poverty may depend on the type of replacement tax.⁸

In summary, empirical studies have found that the price and the labor market channels have the greatest relative importance among all the links between trade and poverty. Nonetheless, because the functioning of markets and institutions is different in each country, it is difficult without closer examination to judge the precise importance of these channels in transmitting the effect of trade policies to household welfare in country-specific instances. Survey data often provide insights on the principal

sources of household incomes, the functioning of labor markets, the abundance of skilled or unskilled labor, and the receipt of government transfers. The analysis of microeconomic data helps to identify the key channels in each case study. For example, in a rural agricultural economy in which households obtain their incomes from the sale of agricultural products, the impact of trade policy on household welfare would occur through movements in the prices of goods, while the link through labor earnings would likely be negligible. Conversely, in urban areas, household welfare would be affected mostly by the labor market and possibly by government spending.

Other issues

Market failures and transaction costs

One of the advantages of greater openness is the creation of new markets.⁹ This advantage is reflected in wider product availability and new production opportunities. However, openness can also have the opposite effect. As a consequence of more significant import competition, markets may be destroyed. In an extreme example, domestically produced goods might be substituted by cheaper imports, so that importers would replace domestic agricultural regions as the suppliers of urban markets. This issue is more crucial if domestic transaction costs are high. If these costs render a product unprofitable, the market for the product may dry up. While consumers in urban areas may benefit greatly from such market substitutions, it is likely that local agrarian regions would be confronted by substantial declines in demand, with enormous repercussions for regional poverty. This is an important reason to analyze the structure of a domestic market and its associated costs in order to anticipate the effect of trade policies on poverty. Thus, for some households, trade policies could increase remoteness (that is, distance from markets). Because poverty is often associated with remoteness and subsistence production, the possibility that some markets may be destroyed by trade policies should be taken seriously.

Subsistence households

Another issue in analyzing the effect of economic policy on household welfare is linked to the fact that many rural households in developing countries may be living in a subsistence environment, that is, a large part of household income and expenditure may be self-produced and self-consumed. The issue here is one largely related to missing markets and poor infrastructure, and the practical effect is to isolate a large share of

household incomes and expenditures from trade policies. When a household's production and consumption are not purchased or sold on the market, movements in the market prices of the goods the household produces or consumes have no direct impact on its income. From an economic perspective, subsistence farming represents a suboptimal outcome that is often associated with high poverty rates. The analysis of household surveys helps to identify the households that are isolated from markets. This information is important in the effort to shape policies aimed at raising the market participation of households, thereby allowing them to be affected by trade policies.

Vulnerability and risks

It is often claimed that trade liberalization increases the risks faced by poor households and the vulnerability of these households to external shocks. Trade liberalization affects household vulnerability in several ways. First, it may narrow or widen the portfolio of activities undertaken by households. A household might, for example, concentrate on the production of a single export crop that is more remunerative than others. Second, trade liberalization may alter the predictability of existing sources of income. Thus, the price of an export crop may be subject to more variance than other crops, even if the mean price is higher. Third, trade liberalization can create poverty traps so that negative shocks are much more difficult to bear. In general, most of the causes of vulnerability in developing countries have little direct connection with trade policies. However, to understand more accurately the overall impact of trade policies on households, one should consider the extent to which these policies affect household vulnerability.

Price volatility

Macroeconomic volatility is one of the most important sources of risk among households. The presumption that open economies are less stable is not always confirmed empirically. In many cases, price volatility on domestic markets is much greater than that on international markets. Openness to trade therefore can stabilize prices and smooth the impact of economic shocks and significant natural events.

Private transfers

Since trade policies are income redistributive, they will likely produce an effect on private transfers among households. It is also often the case that trade policies lead to the national and international migration of workers. These phenomena have an impact on remittances and therefore on

household incomes and social welfare. In empirical work, private transfers are usually modeled as a function of labor earnings. However, the data available through household surveys may sometimes identify any change trade policies produce in the transfers across households.

Distribution within households

Trade policies also may have an effect on the distribution of incomes within households. When several members of a household sell labor (or goods), it is possible that each individual's share in the total household income will change, altering the relative power of the various members of the household. In particular, there is evidence that, relative to income earned by men, income earned by women is spent more altruistically (thereby enhancing the welfare of other household members). This implies that trade policies can have a greater welfare impact if they tend proportionally to increase employment and income among women relative to men.

METHODS TO INVESTIGATE THE LINKS BETWEEN TRADE AND POVERTY

The remaining task is to describe the methodologies available to estimate the magnitude of the links between trade policy and poverty. This section offers an overview of individual country analysis. (It does not cover multicountry regression studies.) Additionally, the techniques outlined below are normally applied to produce predictive assessments rather than ex post evaluations. It is important to recognize that no perfect technique is available for all circumstances; therefore, the attempt is to summarize the main advantages and drawbacks of each approach.

Although new methods are often developed to overcome the limitations of old ones, the freshest practice almost always introduces new limitations as well.

Kanbur (2001) identifies three broad areas of disagreement in the current discourse on economic policy, distribution, and poverty, and the same tripartite classification can be applied to contrast methodologies. The first disagreement is on the level of aggregation. Poverty experts, as well as activists in nongovernmental organizations, focus on high levels of disaggregation and thus consider the well-being of individual households or, at least, of many groups. They differentiate these by rural or urban area or other regional classifications and by gender, employment status, sector of activity, age, ethnicity, and so on. Conversely, macroeconomic or trade economists focus on average levels of income and, perhaps, on aggregate poverty indicators.

The second disagreement is on the time horizon of analysis. Most trade economists would probably assess the consequences of trade reform over a medium-term time horizon. According to Kanbur (2001, 1,089), “[a] five to ten year time horizon . . . is implicit in the equilibrium theory which underlies much of the reasoning behind the impact of policy on growth and distribution.” In contrast, other analysts emphasize the short- or long-term time horizon in their analyses. Some focus on the effects of pulling children out of school, selling assets at fire sale prices, or falling into starvation in the immediate aftermath of a shock. Others worry, as environmental analysts do, about developments in the far future, 50 or 100 years down the road. Although they are not always explicit, methodologies frequently suppose different time frames, which may not be suitable for concurrently analyzing short-term adjustment problems, with their associated rationing and regime-switching issues, and medium- or long-term problems.

The third area of disagreement is market structure and market power. The conclusion of the Heckscher-Ohlin model that trade openness is good for the poor is based not only on the accepted fact that unskilled labor is normally abundant in developing countries, but also on the more disputed assumption that goods and factor markets are competitive. Many claim and provide empirical evidence showing that distributive channels, capital ownership, institutional settings, foreign interventions, and other public or private practices may dramatically change the nature of the interactions on markets. Different analyses may or may not take into account these potential distortions, and analysts need to be aware of the country-specific market structures and power issues that inform their investigations.

The main approaches and the basic data requirements for assessments of the poverty effects of trade policy reform are described below.

Microeconomic studies

The econometric analysis of household surveys aimed at assessing the impact of policy reforms at the microeconomic level originated in the early 1990s.¹⁰ A great advantage of microeconomic studies is that they rely on econometric measurement and therefore require few restrictions on parameters. Moreover, a key feature of microeconomic analysis is the focus on the characteristics and behavior of real world individuals or households as opposed to representative households. This is an essential element in the analysis of a microeconomic, multifaceted phenomenon such as poverty. That the approach ignores general equilibrium effects is

an obvious limitation, but its appeal lies in its transparency and its flexibility in testing diverse hypothetical links between trade and poverty.

Microeconomic studies often focus on the impact of trade policy on employment opportunities and the prices of goods and factors. They frequently involve implementation of variations on the “farm household” approach discussed in “Trade and Poverty: Transmission Channels.”

In practice, the analysis of the effects that trade liberalization has on poverty is regularly carried out in three steps. The first step is the estimation of the changes in the prices of goods and labor returns resulting from trade liberalization. In the second step, the income sources and consumption baskets of each household are carefully disaggregated to construct budget and income shares. During the last step, the changes in the prices of goods and factors are mapped into each household’s budget and income shares to produce an estimate of the changes in the welfare of the households.

Early microeconomic analyses concentrated mostly on the consumption effect of trade policy (for example, Levinsohn, Berry, and Friedman 2003). More recent studies estimate the effect that trade reforms have on poverty, including the effects on income and consumption.

Among the most recent examples is Porto (2003a), who developed a general equilibrium approach to study the impact of trade on poverty in Argentina. In this work, Porto links trade reforms to the observed change in prices. He then links the change in prices to the response in the labor incomes of households. Finally, he links the change in incomes to changes in the poverty level. His findings suggest that trade reforms and improved access to foreign markets have produced a decline in poverty (measured as a percentage of the population considered poor) of about 1.7 percent and 4.6 percent, respectively.

Similarly, Nicita (2004) estimates the effect on poverty of the Mexican trade liberalization that occurred in the 1990s. The major distinction of the work is its account of the heterogeneity of the effects of trade liberalization on prices at the regional level rather than the assumption that changes were equal across all households. Nicita’s findings suggest that northern states in Mexico have benefited substantially more than have states in the central region. The welfare improvement was minimal in the southern states of the country.

Other *ex post* studies emphasize other reasons for the ineffective transmission of tariff reductions to price changes and thus to reductions in poverty.¹¹ Three studies on Sub-Saharan Africa primarily blame high transaction costs for this failure in transmission. Goetz (1992) discussed high transport costs; International Fund for Agricultural Development

(IFAD 2001) considered poor infrastructure, and Minot (1998) reported that, in Rwanda in the early 1980s, poor rural households consisted mainly of subsistence farmers disconnected from markets. The monopolistic power of marketing intermediaries, both public and private, may also hinder price signal transmission, as shown for Zambia and Zimbabwe by Oxfam and Institute of Development Studies (Oxfam and IDS 1999) and Winters (2000).

Given their emphasis on econometric measurement, microeconomic studies are particularly well suited to the investigation of the more subtle effects of trade policies. One example of this is the analysis of the impact of trade reform on child labor in Vietnam (Edmonds and Pavcnik 2005). Other studies include those of Goldberg and Pavcnik (2003), who investigated the effect of trade reform on the informal sector of the economy, and Porto (forthcoming), who examined the impact of informal barriers to trade.

While most microeconomic studies analyze the effect of trade policies *ex post*, predictive microeconomic analyses of the effect of hypothetical trade reforms at the household level have also been performed recently. This type of analysis has been attempted by Nicita and Olarreaga (2003) in the context of Ethiopia. In this work, the authors simulated the effects of trade liberalization in developed countries and the impact on poverty of the resulting improvements in market access for Ethiopian products. Their methodology allows for heterogeneous effects of trade across geographic areas. Their findings suggest that Ethiopia's rural areas (and most of the poor) are nearly completely isolated from the impacts of trade policies.

A different approach in the predictive estimation of the effects of trade on poverty has been pursued in Nicita and Razzaz (2003), who explored the extent to which the poor benefit from the export-led growth of the textile sector in Madagascar. Their methodology combines matching methods (to identify the individuals most likely to fill the new jobs in the expanding sectors) with the industry wage premium literature (to quantify the gains realized by these individuals). Their results suggest that benefits are unequally distributed. Unskilled women workers, in particular, receive minimal gains.

The data needs of microeconomic studies are frequently filled through surveys (for example, household surveys, labor surveys, and firm-level surveys). More survey datasets are being created on developing countries, but survey designs are often improved from year to year, which make comparisons across time difficult. A majority of the surveys collect the sort of information required for household-level trade policy analysis. How-

ever, not all household surveys are suited for this purpose, and, in many cases, the type of analysis depends very much on the richness and quality of the data.

To be appropriate for the analysis of the effects of trade policy on household welfare, a survey should include, at a minimum, information on the income shares each household derives from the sale of labor and the sale of agricultural products. The most preferable surveys allow a detailed disaggregation of income sources and collect information on sources of income by, for example, employment sector (various services and manufacturing), agricultural activity (food crops, import-competing crops, exportable crops, livestock), and types of remittances (national or international), as well as data on public transfers. Many older surveys do not contain any information on income, and, in such cases, it would be more difficult to proceed beyond a cost-of-living analysis.

Detailed consumption data are also extremely useful, and most household surveys constructed for poverty analysis include these data. Empirical observations, however, suggest that households display less heterogeneity in consumption behavior than in income generation. Consumption baskets seem to be similar across households, allowing these baskets, in the extreme, to be approximated by way of a national or regional consumer price index, whereas the composition of incomes differs more markedly. In estimating the effects of trade on poverty, it is therefore more important to obtain precise information on income rather than on consumption.

Household surveys frequently also collect data on other topics valuable for an investigation into the links among trade, poverty, and the mechanisms that transmit price signals between the borders and local markets. For example, with some caution, data on regional prices can be inferred from household surveys. Similarly, household surveys sometimes gather data on the infrastructure and the functioning of the markets in the households' locations. Moreover, surveys often collect data on important features of poverty, such as child labor, health, subsistence, school dropout statistics, household risk management, and so on. These data are useful for investigations into poverty from a nonmonetary perspective.

In summary, microeconomic analyses have the advantage of requiring fewer assumptions, being more tractable, and producing more plausible results. In addition, the fact that these studies focus on the characteristics of poor households rather than on representative households and potential microeconomic mechanisms that may hinder the transmission of prices (rather than assuming perfect transmission) makes them powerful instruments for addressing multifaceted, heterogeneous phenomena such as poverty.

The key disadvantage of this approach is that price changes are normally estimated through a partial equilibrium model. Important indirect effects therefore may be overlooked. In addition, microeconomic studies rarely consider household behavioral responses.¹² Some studies have introduced substitution effects, and some have tried explicitly to model quantity responses. However, the data requirements and analytical complexity increase considerably in these instances, while the results may not be qualitatively different.¹³

A group of partial equilibrium multimarket analyses exists that takes seriously the limitation represented by the exclusion of indirect effects, but these analyses do not adopt the full general equilibrium approach. These studies examine the direct and indirect effects of policy changes on a small set of commodities (or factors) that exhibit strong links between supply and demand. Thus, the procedure is preferable to a simpler partial equilibrium analysis—

when the good directly affected by the reform is a close substitute or complement, on either the demand or supply side, with other goods [and] the transmission of the effects of the policy through these other markets is then an important component of policy evaluation (Arulpragasam and Conway 2003, 273).¹⁴

Macroeconomic techniques: Computable general equilibrium models

Computable general equilibrium (CGE) models capture macroeconomic features and the interdependence among agents in an economic system, such as households, government, and other domestic institutions, as well as the external sector.¹⁵ The core of a real-side static CGE model is the representation of the markets for products and factors and the equilibrating mechanisms of adjustments in relative prices on these markets.

CGE models may be generally regarded as a class of macro-meso model. CGE models are firmly rooted within a macroeconomic framework. Macroeconomic variables are an integral part of the model and are conditioned by macroeconomic closures (the rules that determine how external, capital, and government accounts are brought into balance). Similarly, on the meso side, the models explicitly focus on markets and depict the ways in which these markets close, with some degree of attention to the institutional structure of the economy.

The extent to which the key features of the meso economy are adequately captured by the model is important. This depends on three key

elements: (1) on the macro-meso framework underpinning the model, (2) on whether the model specification is representative of technology and behavior in the economy, and (3) on the quality and detail of the benchmark dataset used to calibrate the model. The benchmark dataset consists of a social accounting matrix (SAM), including other data on elasticities, population, the labor force, and household survey statistics.

To assess trade (and other) policy effects on individuals or household groups and, ultimately, on poverty, a further meso-micro interface must be introduced. The simplest approach is to assume a fixed variance among representative household groups. For each group, poverty changes are based exclusively on changes in the average income of the representative household, while income distribution variations are based uniquely on changes in average incomes among groups.

This approach was first suggested by Adelman and Robinson (1978) in a model for South Korea, later discussed by Dervis, de Melo, and Robinson (1982) and used in many subsequent applications.¹⁶ The methodology relies on defining parametrically a representation of the distribution of income for each household group in the model. In this representation, a shift in the group mean income arising from an exogenous shock is translated into a shift in the whole distribution.

A recent example of the approach is offered in Harrison, Rutherford, Tarr, and Gurgel (2003). They analyzed regional, unilateral, and global trade policy options for Brazil and their effects on poverty. From the policies considered, the authors concluded that the poorest households typically gain roughly three to four times the average gain for Brazil. This gain is due to the fact that tariff liberalization in Brazil shifts production toward labor-intensive manufacturing and agriculture. The wage rate of unskilled labor increases, and the primary determinant of the impact on the poor from trade liberalization is the wage rate of unskilled labor.

The main strength of the CGE-based approach is that the changes in prices likely to affect poor people are estimated within a consistent general equilibrium framework. Furthermore, trade-induced price changes can be perfectly identified when they are simulated in a CGE model, where specific shocks can be simulated one at a time. The CGE approach supplies the opportunity to experiment with different trade reform shocks, and this is a major advantage over *ex post* microeconomic analyses, which are applied to data that incorporate a lot of noise from a multitude of simultaneous shocks.¹⁷

The approach, however, presents several limitations. Results on poverty and income distribution depend critically on the choice of the household and factor classifications, the appropriateness of the macro-

economic closure rules selected, and the neglect of important variations within household groups. If the average behavior of households is not truly representative of all the households within a group, then the performance of the model is undermined. The issue is most clearly seen in the rural sector, in which subgroups of households may have quite different degrees of exposure to agricultural export markets. Some agricultural households produce and sell export crops, or the household members work on farms producing for export, while other households are composed of small landowners who are mainly subsistence farmers or net purchasers of food. Rural nonfarm economic activity also varies across households and household groups. Obviously, this variation means that each subgroup may be affected differently by exogenous shocks, and aggregating them likely leads to errors in the measurement of the effects of a particular shock.

Regarding the data requirements of the CGE models, SAMs provide a consistent framework that meets most of the sectoral and institutional information needs; supplementary parameters and elasticities are normally borrowed from econometric studies. SAMs present numerous advantages in addition to their role as a key ingredient in the CGE exercise. In Round's words—

A SAM is a particular representation of the macro and meso economic accounts of a socio-economic system, which capture the transactions and transfers between all economic agents in the system. . . . The main features of a SAM are threefold. First, the accounts are represented as a square matrix; where the incomings and outgoings for each account are shown as a corresponding row and column of the matrix. . . . Second, it is comprehensive, in the sense that it portrays all the economic activities of the system (consumption, production, accumulation and distribution), although not necessarily in equivalent detail. Thirdly, the SAM is flexible, in that . . . there is a large measure of flexibility both in the degree of disaggregation and in the emphasis placed on different parts of the economic system (2003, 303).

SAMs can readily be used to connect data from disparate sources, such as national accounts and household surveys, and, by highlighting data inconsistencies, they help to evaluate data validity and data gaps. The simple accounting framework for SAMs is also useful in displaying in an easy, direct way the interdependencies among sectors, factors, households, and other agents in an economy.

Combined micro-macro approaches

The major contribution of recent literature is to combine the details on household behavior offered by household surveys with the consistency and controlled experimental mode of the CGE model to form a new approach. Two main methodological developments can be distinguished in this new approach. The first is a direct development on the CGE model. The household survey is embedded into the model, that is, the number of household groups is expanded so that it equals the number of households in the survey. The second development links a fairly disaggregated CGE model and a microeconomic model in a sequence or adds a feedback loop. Each of these developments is now examined in turn.

Because of the greater computing power and improved efficiency in solution algorithms allowed by technical advances, large models can now be easily solved. CGE models based on thousands of households have thus become viable tools of analysis. Recent examples include Decaluwé, Patry, Savard, and Thorbecke (1999) on artificial data, Cockburn (2001) on Nepal, and Boccanfuso, Decaluwé, and Savard (2003) on Senegal. These models avoid the problem of reliance on a fixed variance among group incomes and leave the modeler free of the selection of groupings based on rather arbitrary criteria. Any group can be created based on accurate socioeconomic, demographic, or geographic criteria and employed with the relevant endogenous variables (income, consumption) before and after a shock to perform any decomposition of poverty and income distribution analysis.

As Savard points out, however—

The main disadvantages of this approach are the limits it imposes in terms of microeconomic household behaviors. As a matter of fact, the size of the model can quickly become a constraint and data reconciliation can be relatively difficult. On the first point, CGE modeling imposes that behavioral function respects certain conditions. [Furthermore], modeling that introduces switching regimes are not easily modeled with standard CGE modeling software. . . . Micro-econometric modeling provides much more flexibility in terms of the modeling structure used. . . . The data reconciliation process leads to changes in structure of either the income or expenditure of the households. This comes from the fact that both accounts need to be balanced as well as leveled to the national accounts' data found in the SAM. You will often find some under or over reporting for items in the household survey (2003, 4).

The second line of attack in the new literature is an extension of microsimulation methods initially developed by Orcutt in the 1960s. The extended method links key price variables and additional aggregates derived from a CGE model (or other macroeconomic model) with a household model that has been estimated microeconometrically. Examples of this approach are found in Bourguignon, Robilliard, and Robinson (2003) in an analysis of the financial crisis in Indonesia, Bussolo and Lay (2003) on trade policy in Colombia, and Ferreira and Leite (2003) on Brazil.

The advantage of the method is that the micromodel can incorporate fairly complex household behaviors, including discontinuities and regime-shifting that are normally not well-handled within a CGE framework. However, simple microaccounting models also can be used. In the latter case, some of the microeconomic techniques outlined above can be readily linked to general equilibrium price shocks. Thus, Ianchovichina, Nicita, and Soloaga (2001) estimate the impact of full trade liberalization in Mexico; Chen and Ravallion (2003) do a similar exercise for China; Ravallion and Lokshin (2004) apply the method to Morocco; and Bussolo and van der Mensbrugge (2003) estimate the poverty effects of the Free Trade Area of the Americas on Brazil, Chile, Colombia, and Mexico. A slightly more complex microaccounting model is found in Hertel and others (2002), who consider the effects of multilateral liberalization on seven countries and find reductions in poverty in four of them (Indonesia, the Philippines, Uganda, and Zambia) and increases in the other three (Brazil, Chile, and Thailand).

The main disadvantage of the combined approach is that full consistency between the macroeconomic and the microeconomic models is not guaranteed.

INSTITUTIONS, STAKEHOLDERS, AND THE POLITICAL ECONOMY OF TRADE POLICY REFORM

Why do countries choose to reduce their welfare (and potentially increase their poverty incidence) by imposing trade restrictions? This is one of the key questions in the vast literature on the political economy of trade policy. Among the various answers, two common themes emerge. First, trade policy is highly redistributive and can easily be captured by stakeholders and lobbies, who then normally favor a protectionist status quo. Second, governments have historically raised significant revenues by taxing trade, and policy makers have important stakes in the reform process.

This section considers these two themes in detail. It offers guidance for an analysis on the ways stakeholders and institutions interact to shape the poverty and social impacts of trade policy reform.

The redistributive outcomes of trade liberalization are much larger than the (static) efficiency gains. This results in an unfavorable cost benefit ratio for any policy maker. Rodrik (1997) provides a clear example of this ratio by showing the magnitudes of the effects of trade liberalization in a typical poor (African) developing country. In his scenario—

Trade restrictions are reduced from a tariff equivalent of 40 percent to a tariff equivalent of 10 percent. In this [case], urban employers incur a real income loss of 35 percent while recipients of trade rents suffer a loss of 41 percent! The gain to farmers is 20 percent. The net gain to the economy is 2.5 percent, which is an order of magnitude smaller than these distributional impacts (1997, 35).

The pie is, indeed, bigger after the liberalization; however, managing the severe redistribution involved in the policy is tricky. Implementing a set of transfers so that, after the shock, everyone is in a better or equal position is more an economist's thought experiment than a realistically applicable compensatory system.

The difficulty in dealing with these distributional consequences is one of the key reasons for the many incomplete implementations or reversals of trade policy reforms in developing countries, particularly in Africa. As reported in a World Bank study that focused on this region—

Reversal of reform has been frequent. In seven of the countries examined, either restrictions which were removed were reinstated, or some existing barriers were strengthened to offset reductions in others. Nigeria, though it eliminated most quantitative restrictions (quotas and licensing) increased dramatically the number of import bans. Ghana, which was the only country to make great strides in cutting formal tariffs, reversed this with the implementation of large special taxes on imports. Côte d'Ivoire raised tariffs significantly, after having reduced QRs [quantitative restrictions]. In some cases the motive for reversal appears to be pressure from import-competing industries as they begin to experience competition from abroad (e.g., Côte d'Ivoire, Ghana). In others, resurgence of foreign exchange shortages [has] slowed the liberalization of tariffs (Madagascar), or reversed the foreign exchange market reform itself (Kenya) (Dean, Desai, and Riedel 1994, 50).

Given these risks in the implementation and sustainability of trade policy reform, predictive analysis of the distributional effects is crucial, as

is the identification of winners and losers. The political economy literature offers two broad frameworks helpful in this context. In the first, political cleavages in trade policy are formed along factor lines and, in the second, along industry of employment. The first predicts that the distributional effects of tariff changes exclusively depend on the type of factor ownership, and these effects are a direct consequence of perfect factor mobility across sectors (the factor endowments model). In the second case, factors are considered immobile across industries so that their real return is linked directly to the sector-specific consequences of trade policy (the sector-specific factors model). Empirical evidence does not discard either of these two views, and the apparently contrasting findings can be rationalized by considering the time frame of the analyses. In the long term, individuals view themselves as more mobile and, thus, may express preferences consistent with the factor endowments model; in a short-term analysis, people perceive their chances to find other employment quite low, and thus their behavior is more in line with the sector-specific factors model.

More important than the resolution of the issue of the best model is the use of both models to isolate a set of economic and sociodemographic determinants that can be used to identify the potential supporters (winners) and detractors (losers) of trade policy reform. The following group of variables is usually significant in explaining the attitudes of individuals toward trade policy reform: (1) the levels of individual human capital relative to the national average (in an economy well endowed with skilled labor, skilled individuals would be pro-trade and unskilled individuals antitrade); (2) the trade exposure of the sector in which the individuals are employed (individuals in nontraded sectors are pro-trade, whereas those in import-competing industries are protectionists); and (3) noneconomic indicators normally included by researchers, such as age, gender, citizenship, years of education, area of residence (rural versus urban), self-reported social class, political party affiliation, trade union membership, and real income.

Household surveys may facilitate the grouping of individuals according to these variables. With the addition of information about the trade policy stance of industry associations, for example, this grouping may often be sufficient to characterize the *demand* side, namely, who will be for and who will be against trade policy reform. A complete political economy analysis of the reform should also consider the *supply* side and thus undertake an examination of preferences among policy makers and the institutional structure of the government (see Rodrik 1995).

It may often be the case that the supply side rather than the demand side is the major obstacle to a pro-poor policy reform and that the institutional setting may hinder the implementation of the reform.

Two authors, among others cited in Rodrik (1998), describe the disappointing situation in Africa. Bates (1981) was one of the first to argue that the purpose of the anti-export bias imposed on African agricultural exporters was to transfer wealth from politically unorganized rural groups to vocal urban groups. Bienen (1991) criticizes policy makers more openly:

Trade liberalization policies are often extremely hard to formulate and implement in Africa precisely because it is powerful officials (civilian and military) who benefit from the controls that have been established over imports and exports. It is government officials who ration and distribute scarce imports, including foreign exchange. They realize the rents which accrue from the systems they construct and control (76–77).

Edwards (2001) provides, through the situation in Colombia, an excellent analysis of the economics and politics of the transition to an open market economy. The Colombian case is particularly interesting because of the magnitude and the speed of the liberalization—Edwards qualifies it as “one of the most dramatic ever undertaken in a Latin American country” (72)—and the fact that several important institutions were involved, including the presidency (the executive branch), the congress (the legislative branch), and the central bank.

Partly to overcome the opposition of protected industries (the demand side), President Gaviria’s initial idea was to implement the reform through gradual tariff reductions and compensate for this lifting of protective measures through exchange rate depreciation. However, subsequent developments required a drastic change in the pace and size of the reform. Because the peso was already depreciated at historic levels and the central bank could not sustain a sterilization scheme aimed at offsetting speculative capital inflows, and because the timid initial tariff reductions were not credible and imports were not increasing, the government decided to eliminate import licensing and cut tariffs by more than 50 percent overnight. The political landscape and the sequence of the events that allowed this daring reform to occur may be peculiar to Colombia, but some important lessons can be learned from the case and generalizations can be made about other countries. According to Edwards, these lessons, which should help in devising strategies to minimize a distributional conflict, are as follows:

- Compensation schemes can help reduce the opposition to the reform effort. The reforms have profound effects on income distribution. Nat-

urally those groups hurt by the reform will oppose them. The use of broadly defined compensation schemes, that usually go beyond the economic sphere, can effectively help deflect this opposition.

- Sequencing matters. The order in which reforms are undertaken has economic and political consequences. It affects the nature of the distributive conflict, and the authorities' ability to implement effective compensation schemes.
- Speed matters. The speed at which the reforms are implemented has important political effects. There usually is, however, a trade-off between credibility and adjustment costs. Gradual reforms will have lower adjustment costs, but will tend to have a low degree of credibility. To the extent that there is a "honeymoon period" a more rapid reform during the initial months may be effective.
- Political institutions are important. The nature of political institutions matters. Some of the most important aspects are the degree of decentralization, the strength of the executive, and the degree of independence of the judiciary and the central bank.
- External support may be important at certain junctures. Support from the multilaterals . . . may help launch the reforms. In some cases technical advice can also be useful.
- Coalition building can ease the political costs of the transition. Forging a broad coalition—or a national project—around the reform effort will greatly reduce the political opposition and facilitate the transition. By their own nature, however, broad political coalitions are fragile and may break easily. This suggests that an effort should be made to make progress while the coalition holds in place (2001, 23).

The literature on the political economy of trade policy reform makes strong arguments that economically irrational distortions may play a key role in clearing political markets. Viewed through this lens, these distortions assume new meanings. More effective strategies for their successful removal, reduction, or replacement in favor of the poor can be devised.

CONCLUSIONS

The links between trade reform and poverty are complex and case specific. Indeed, similar trade policies may have widely varying results in different countries in terms of poverty. Because of this, the first step in reform impact analysis should be to focus on understanding the detailed pathways through which trade liberalization can affect poverty. The literature has

concentrated mainly on three pathways: price transmission, earnings, and government revenues and expenditure.

Often, the effects of a trade policy reform are not transmitted directly to households, or there are numerous shocks affecting households during the period of reform. This complicates the analysis. The peculiarities of the local and regional economies—the significance of the infrastructures involved, the quality of the institutions, the level of the development of markets, the competitiveness of markets, and the participation of households in market—can soften or amplify these effects. Therefore, in an empirical analysis of the impact of trade reform on poverty, it is important to identify the extent to which domestic markets are able to transmit the effects of trade reform, as well as associated policy changes (such as the steps required to replace lost tariff revenues) that may accompany the reform.

Empirical evidence shows that trade liberalization has an overall positive impact on household welfare, although most studies find that the benefits are distributed unevenly across households. Some household groups may be harmed. Furthermore, trade liberalization may disproportionately benefit urban areas relative to poorer rural areas, thereby increasing income inequality.

No bulletproof methodology exists, and, in a first-best situation, researchers should attempt to amass evidence on at least two fronts. On the one hand, microeconomic studies on households are valuable because poverty is ultimately measured at the household level, and the heterogeneity of households in terms of endowments, consumption behavior, location, employment sector, and other characteristics influences the final outcomes of reforms. On the other hand, these detailed studies should be complemented by macroeconomic approaches through which the indirect effects of a reform caused by the interactions of the supply and demand on all markets may be included and where real macroeconomic impacts, such as changes in the balance of government and external accounts, may be accurately gauged. This combination of microeconomic and macroeconomic approaches fosters a more precise picture of the consequences of reform. Finally, the addition of an analysis of the political economy of the reform will assist in identifying the stakeholders and gauging the political feasibility of the proposed changes. This may be the key ingredient in a complete poverty and social impact analysis exercise.

NOTES

1. See Rhee, Katterbach, and White (1990) and World Bank (1992) for early references. See also Madani (1999).

2. Rodríguez and Rodrik (2001) supply a careful review of these issues.
3. See Goldberg and Knetter (1997) for a review and Nicita (2004) for an application to trade liberalization.
4. The theory linking prices and factor returns is based on the Stolper-Samuelson theorem (Stolper and Samuelson 1941), which is a proposition of the Heckscher-Ohlin model. It states that a rise in the relative price of a good (1) raises the real wage of the factor used intensively in that industry and (2) lowers the real wage of the other factor.
5. Increased relative wages for skilled labor are observed in many developing countries abundantly endowed with unskilled labor. Slaughter and Swagel (1997) cited evidence for Mexico; Meller and Tokman (1996) studied the Chilean case; and Sanchez and Nuñez (1998) examined the Colombian case. See Davis (1992) and Wood (1997) for multicountry studies covering this issue.
6. For example, see Bussolo, Mizala, and Romaguera (2002) for a case study of Chile; see also Devarajan, Ghanem, and Thierfelder (1997) on Bangladesh.
7. Ebrill, Stotsky, and Gropp (1999), cited in Winters, McCulloch, and McKay (2004).
8. For a trade application, see Konan and Maskus (2000) and Harrison, Rutherford, and Tarr (2003). For a more general approach to tax incidence on the poor, see Bussolo and Round (forthcoming).
9. See Winters, McCulloch, and McKay (2004) for a thoughtful discussion of the issues raised in this section.
10. The technique is described by Deaton (1997).
11. The studies are cited in Winters, McCulloch, and McKay (2004).
12. The exceptions being Deaton (1989); Levinsohn, Berry, and Friedman (2003); and Nicita (2004), who take into account second-order effects in consumption.
13. Often, changes in the composition of the consumption basket can be overlooked or approximated without substantially altering the results. More important is the issue of the adjustment costs resulting from trade policies. This involves consideration of the changes in the composition of income sources and the movement of workers across sectors of employment. However, given the complexity of the estimation and the frequent paucity of the data, few studies have been attempted along these lines.
14. See Arulpragasam and Conway (2003) for empirical applications of this technique.
15. This section draws partly on Bussolo and Round (forthcoming).
16. See, for example, de Janvry, Fafchamps, and Sadoulet (1991); Chia, Wahba, and Whalley (1994); Decaluwé and others (1999); Bussolo and Round (forthcoming); and Agénor, Izquierdo, and Fofack (2003).
17. Winters, McCulloch, and McKay (2004) highlight these identification problems; see the citation recorded at the beginning of the section entitled "Trade and poverty: Transmission channels."

BIBLIOGRAPHY

- Adelman, Irma, and Sherman Robinson. 1978. *Income Distribution Policy: A Computable General Equilibrium Model of South Korea*. Stanford, CA: Stanford University Press.
- . 1988. “Macroeconomic Adjustment and Income Distribution: Alternative Models Applied to Two Economies.” *Journal of Development Economics* 29 (1): 23–24.
- Agénor, Pierre-Richard, Alejandro Izquierdo, and Hippolyte Fofack. 2003. “The Integrated Macroeconomic Model for Poverty Analysis: A Quantitative Macroeconomic Framework for the Analysis of Poverty Reduction Strategies.” Policy Research Working Paper 3092, World Bank, Washington, DC.
- Agénor, Pierre-Richard, Reynaldo Fernandes, Eduardo Haddad, and Dominique van der Mensbrugge. 2003. “Analyzing the Impact of Adjustment Policies on the Poor: An IMMPA Framework for Brazil.” World Bank, Washington, DC. Mimeo.
- Arndt, Channing, Henning Tarp Jensen, Sherman Robinson, and Finn Tarp. 2000. “Marketing Margins and Agricultural Technology in Mozambique.” *Journal of Development Studies* 37 (1): 121–37.
- Arulpragasam, Jehan, and Patrick Conway. 2003. “Partial Equilibrium Multi-market Analysis.” In François Bourguignon and Luiz A. Pereira da Silva, eds., *The Impact of Economic Policies on Poverty and Income Distribution: Evaluation Techniques and Tools*, 261–77. New York: World Bank and Oxford University Press.
- Ballard, C., D. Fullerton, J. Shoven, and J. Whalley. 1985. *A General Equilibrium Model for Tax Policy Evaluation*. Chicago: University of Chicago Press.
- Bates, Robert. 1981. *Markets and States in Tropical Africa*. Berkeley, CA: University of California Press.
- Bautista, Romeo M., and Marcelle Thomas. 1997. “Income Effects of Alternative Trade Policy Adjustments on Philippine Rural Households: A General Equilibrium Analysis.” IFPRI TMD Discussion Paper 22, International Food Policy Research Institute, Trade and Macroeconomics Division, Washington, DC.
- Bienen, Henry. 1991. “The Politics of Trade Liberalization.” In J. H. Frimpong-Ansah, S. M. R. Kanbur, and P. Svedberg, eds., *Trade and Development in Sub-Saharan Africa*. New York: Manchester University Press.
- Boccanfuso, Dorothée, Bernard Decaluwé, and Luc Savard. 2003. “Poverty, Income Distribution and CGE Modeling: Does the Functional Form of Distribution Matter?” CIRPEE Working Paper 03–32, Interuniversity Center on Risk, Economic Policy, and Employment, Montreal.
- Boccanfuso, Dorothée, F. Cabral, F. Cissé, A. Diagne, and Luc Savard. 2003. “Pauvreté et Distribution de Revenus au Sénégal: Une Approche par la Modélisation en Equilibre Général Calculable Micro-Simulé.” CIRPEE Working Paper 03–33, Interuniversity Center on Risk, Economic Policy, and Employment, Montreal.

- Bourguignon, François. 2003. "The Growth Elasticity of Poverty Reduction." In T. Eicher and S. Turnovsky, eds., *Inequality of Growth*. Cambridge, MA: MIT Press.
- . 2004. "The Poverty-Growth-Inequality Triangle." Paper prepared for the Indian Council for Research on International Economic Relations—World Bank Lecture, India Habitat Center, New Delhi, February 4.
- Bourguignon, François, and Christian Morrisson. 1989. *External Trade and Income Distribution*. Paris: Organisation for Economic Co-operation and Development.
- . 1992. *Adjustment and Equity in Developing Countries: A New Approach*. Paris: Organisation for Economic Co-operation and Development.
- Bourguignon, François, and Luiz A. Pereira da Silva, eds. 2003. *The Impact of Economic Policies on Poverty and Income Distribution: Evaluation Techniques and Tools*. New York: World Bank and Oxford University Press.
- Bourguignon, François, Jaime de Melo, and Christian Morrisson. 1991. "Poverty and Income Distribution during Adjustment: Issues and Evidence from the OECD Project." *World Development* 19 (11): 1,485–508.
- Bourguignon, François, Jaime de Melo, and Akiko Suwa. 1991. "Distributional Effects of Adjustment Policies: Simulations for Archetype Economies in Africa and Latin America." *World Bank Economic Review* 5 (2): 339–66.
- Bourguignon, François, Anne-Sophie Robilliard, and Sherman Robinson. 2003. "Representative Versus Real Households in the Macroeconomic Modeling of Inequality." Delta Working Papers 2003–05, Paris.
- . 2003. "Representative Versus Real Households in the Macroeconomic Modeling of Inequality." DIAL Working Paper DT2003-10, Développement et Insertion Internationale, Unité de Recherche Croissance, Inégalités, Population et Rôle de l'Etat, Paris.
- Bussolo, Maurizio, and Jann Lay. 2003. "Globalization and Poverty Changes in Colombia." Paper presented at the Annual Bank Conference on Development Economics in Europe, World Bank, Paris, May 15.
- Bussolo, Maurizio, and Jeffrey Round, eds. Forthcoming. *Globalization and Poverty: Channels and Policy Responses*. London: Routledge.
- Bussolo, Maurizio, and Dominique van der Mensbrugge. 2003. "A Preliminary Assessment of the Economic and Poverty Impacts of the Doha Agenda for Latin America." Paper presented at the Second Centre d'Etudes Prospectives et d'Informations Internationales—Inter-American Development Bank Conference, Economic Implications of the Doha Development Agenda for Latin America and the Caribbean, Washington, DC, October 6–7.
- Bussolo, Maurizio, Alejandra Mizala, and Pilar Romaguera. 2002. "Beyond Heckscher-Ohlin: Trade and Labour Market Interactions in a Case Study for Chile." *Journal of Policy Modeling* 24 (7–8): 639–66.
- Chen, Shaohua, and Martin Ravallion. 2000. "How Did the World's Poorest Fare in the 1990s?" Policy Research Working Paper 2409, World Bank, Development Research Group, Poverty and Human Resources, Washington, DC.

- . 2003. “Household Welfare Impacts of China’s Accession to the WTO.” In Deepak Bhattasali, Shantong Li, and Will Martin, eds., *China and the WTO: Accession, Policy Reform, and Poverty Reduction Strategies*. New York: Oxford University Press.
- Chia, Ngee-Choon, Sadek Wahba, and John Whalley. 1994. “Poverty Reduction Targeting Programmes: A General Equilibrium Approach.” *Journal of African Economies* 3 (2): 309–38.
- Cloutier, Marie-Hélène, John Cockburn, and Bernard Decaluwé. 2004. “Welfare, Poverty and Distributional Effects of Trade Liberalization: A Review of the CGE Literature.” CREFA, unpublished, Laval University, Department of Economics, Montreal.
- Cockburn, John. 2001. “Trade Liberalization and Poverty in Nepal: A Computable General Equilibrium Micro Simulation Analysis.” CREFA Working Paper 01–18, Laval University, Department of Economics, Research Center in Applied Economics and Finance, Montreal.
- Cogneau, Denis, and Anne-Sophie Robilliard. 2000. “Income Distribution, Poverty and Growth in Madagascar: Micro-Simulations in a General Equilibrium Framework.” IFPRI TMD Discussion Paper 61, International Food Policy Research Institute, Trade and Macroeconomics Division, Washington, DC.
- Davis, S. 1992. “Cross-Country Patterns of Changes in Relative Wages.” *NBER Macroeconomics Annual* 1992 7: 239–91. National Bureau of Economic Research, Cambridge, MA.
- Dean, Judith M., Seema Desai, and James Riedel. 1994. “Trade Policy Reform in Developing Countries since 1985: A Review of the Evidence.” World Bank Discussion Paper 267, World Bank, Washington, DC.
- Deaton, Angus. 1989. “Rice Prices and Income Distribution in Thailand: A Non-parametric Analysis.” *Economic Journal* 99 (395): 1–37.
- . 1997. *The Analysis of Household Surveys: A Microeconometric Approach to Development Policy*. Baltimore: Johns Hopkins University Press.
- . 2003. “Prices and Poverty in India, 1987–2000.” *Economic and Political Weekly* 25 (January): 362–68.
- Decaluwé, Bernard, Jean-Christophe Dumont, and Luc Savard. 1999. “Measuring Poverty and Inequality in a Computable General Equilibrium Model.” CREFA Working Paper 99–20, Laval University, Department of Economics, Research Center in Applied Economics and Finance, Montreal.
- Decaluwé, Bernard, A. Martens, and Luc Savard. 2001. *La Politique Economique du Développement et les Modèles d’Equilibre Général Calculable*. Montreal: Université Francophone–Presses de l’Université de Montréal.
- Decaluwé, Bernard, André Patry, Luc Savard, and Erik Thorbecke. 1999. “Poverty Analysis within a General Equilibrium Framework.” CREFA Working Paper 99–09, Laval University, Department of Economics, Research Center in Applied Economics and Finance, Montreal.
- de Janvry, Alain, and Elisabeth Sadoulet. 1995. “Poverty Alleviation, Income Redistribution and Growth during Adjustment.” In Nora Lustig, ed., *Coping*

- with *Austerity: Poverty and Inequality in Latin America*. Washington, DC: Brookings Institution.
- . 2001. "Growth, Poverty and Inequality in Latin America: A Causal Analysis, 1970–94." *Review of Income and Wealth* 46 (3): 267–87.
- de Janvry, Alain, Marcel Fafchamps, and Elisabeth Sadoulet. 1991. "Peasant Household Behavior with Missing Markets: Some Paradoxes Explained." *Economic Journal* 101 (409): 1,400–17.
- de Janvry, Alain, Marcel Fafchamps, Mohamed Raki, and Elisabeth Sadoulet. 1992. "Structural Adjustment and the Peasantry in Morocco: A Computable Household Model." *European Review of Agricultural Economics* 19 (4): 427–53.
- Dercon, Stephan. 2001. *The Impact of Economic Reforms on Households in Rural Ethiopia, 1989–1995*. New York: Oxford University Press.
- Dervis, Kemal, Jaime de Melo, and Sherman Robinson. 1982. *General Equilibrium Models for Development Policy*. Cambridge, UK: Cambridge University Press.
- Devarajan, Shantayanan, and Dominique van der Mensbrugge. 2000. "Trade Reform in South Africa: Impacts on Households." Paper presented at the Conference on Poverty and the International Economy, World Bank and Parliament of Sweden, Commission on Policy for Global Development, Stockholm, October 20–21.
- Devarajan, Shantayanan, Hafez Ghanem, and Karen Thierfelder. 1997. "Economic Reform and Labor Unions: A General-Equilibrium Analysis Applied to Bangladesh and Indonesia." *World Bank Economic Review* 11 (1): 145–70.
- . 1998. "Labor Market Regulations and Trade Liberalization: A General-Equilibrium Analysis of Bangladesh." *Journal of Policy Reform* 3 (1): 1–28.
- Dimaranan, Betina, Thomas W. Hertel, and Roman Keeney. 2003. "OECD Domestic Support and the Developing Countries." WIDER Discussion Paper 2003/32, United Nations University—World Institute for Development Economics Research, Helsinki.
- Dollar, David, and Aart Kraay. 2001. "Trade, Growth, and Poverty." *Finance and Development* 38 (3): 16–19.
- . 2002. "Growth is Good for the Poor." *Journal of Economic Growth* 7 (3): 195–225.
- Ebrill, Liam, Janet Stotsky, and Reint Gropp. 1999. "Revenue Implications of Trade Liberalization." IMF Occasional Paper 180. International Monetary Fund, Washington, DC.
- Edmonds, Eric V., and Nina Pavcnik. 2005. "The Effect of Trade Liberalization on Child Labor." *Journal of International Economics*. 65(2): 401–19.
- Edwards, Sebastian. 2001. "The Economics and Politics of Transition to an Open Market Economy: Colombia." *Development Centre Studies*. Paris: Organisation for Economic Co-operation and Development.
- Ferreira, Francisco H. G., and Phillippe G. Leite. 2003. "Policy Options for Meeting the Millennium Development Goals in Brazil: Can Micro-Simulations Help?" Policy Research Working Paper 2975, World Bank, Development Research Group, Poverty, Washington, DC.

- Frankel, Jeffrey A., David Parsley, and Shang-Jin Wei. 2005. "Slow Pass-Through around the World: A New Import for Developing Countries?" NBER Working Paper 11199, National Bureau of Economic Research, Cambridge, MA.
- Friedman, Jed, and James Levinsohn. 2002. "The Distributional Impacts of Indonesia's Financial Crisis on Household Welfare: A 'Rapid Response' Methodology." *World Bank Economic Review* 16 (3): 397–423.
- Goetz, Stephan J. 1992. "A Selectivity Model of Household Food Marketing Behavior in Sub-Saharan Africa." *American Journal of Agricultural Economics* 74 (2): 444–52.
- Goldberg, Pinolopi Koujianou, and Michael M. Knetter. 1997. "Goods Prices and Exchange Rates: What Have We Learned?" *Journal of Economic Literature* 35 (3): 1,243–72.
- Goldberg, Pinolopi Koujianou, and Nina Pavcnik. 2003. "The Response of the Informal Sector to Trade Liberalization." *Journal of Development Economics* 72 (2): 463–96.
- . 2004. "Trade, Inequality, and Poverty, What Do We Know? Evidence from Recent Trade Liberalization Episodes in Developing Countries." NBER Working Paper 10593, National Bureau of Economic Research, Cambridge, MA.
- Harrison, Glenn W., Thomas F. Rutherford, and David G. Tarr. 2003. "Trade Liberalization, Poverty and Efficient Equity." *Journal of Development Economics* 71 (1): 97–128.
- Harrison, Glenn W., Thomas F. Rutherford, David G. Tarr, and Angelo Gurgel. 2003. "Regional, Multilateral and Unilateral Trade Policies of Mercosur for Growth and Poverty Reduction in Brazil." Policy Research Working Paper 3051, World Bank, Development Economics Research Group, Trade, Washington, DC.
- Hertel, Thomas W., ed. 1997. *Global Trade Analysis: Modeling and Applications*. New York: Cambridge University Press.
- Hertel, Thomas W., and Will Martin. 2000. "Liberalizing Agriculture and Manufactures in a Millennium Round: Implications for Developing Countries." *The World Economy* 23 (4): 455–70.
- Hertel, Thomas W., Maros Ivanic, Paul V. Preckel, and John A. L. Cranfield. 2002. "Poverty Impacts of Multilateral Trade Liberalization." GTAP Working Paper 16, Center for Global Trade Analysis, Department of Agricultural Economics, Purdue University, Indiana.
- Hoekman, Bernard M., Aaditya Mattoo, and Philip English, eds. 2002. *Development, Trade, and the WTO: A Handbook*. Washington, DC: World Bank.
- Ianchovichina, Elena, Alessandro Nicita, and Isidro Soloaga. 2001. "Trade Reform and Poverty: The Case of Mexico." *The World Economy* 25 (7): 945–72.
- IFAD (International Fund for Agricultural Development). 2001. *Rural Poverty Report 2001: The Challenge of Ending Rural Poverty*. New York: Oxford University Press.
- Kanbur, Ravi. 2001. "Economic Policy, Distribution and Poverty: The Nature of Disagreements." *World Development* 29 (6): 1,083–94.

- Konan, Denise Eby, and Keith. E. Maskus. 2000. "Joint Trade Liberalization and Tax Reform in a Small Open Economy: The Case of Egypt." *Journal of Development Economics* 61 (2): 365–92.
- Levinsohn, James, Steven Berry, and Jed Friedman. 2003. "Impacts of the Indonesian Economic Crisis: Price Changes and the Poor." In Michael P. Dooley and Jeffrey A. Frankel, eds., *Managing Currency Crises in Emerging Markets*. Chicago: University of Chicago Press.
- Madani, Dorsati. 1999. "A Review of the Role and Impact of Export Processing Zones." Policy Research Working Paper 2238, World Bank, Development Economics Research Group, Trade, Washington, DC.
- McCulloch, Neil, and Michele Calandrino. 2003. "Vulnerability and Chronic Poverty in Rural Sichuan." *World Development* 31 (3): 611–28.
- McCulloch, Neil, L. Alan Winters, and Xavier Cicera. 2001. *Trade Liberalization and Poverty: A Handbook*. London: Center for Economic Policy Research.
- Meller, P., and A. Tokman. 1996. "Apertura Comercial y Diferencial Salarial en Chile." In P. Meller, ed., *El Modelo Exportador Chileno*. Santiago, Chile: Economic Research Corporation for Latin America.
- Minot, Nicholas W. 1998. "Distributional and Nutritional Impact of Devaluation in Rwanda." *Economic Development and Cultural Change* 46 (2): 379–402.
- Minot, Nicholas W., and Francesco Goletti. 2000. "Rice Market Liberalization and Poverty in Viet Nam." IFPRI Research Report 114, International Food Policy Research Institute, Washington, DC.
- Nicita, Alessandro. 2004. "Who Benefited from Trade Liberalization in Mexico? Measuring the Effects on Household Welfare." Policy Research Working Paper 3265, World Bank, Development Economics Research Group, Trade, Washington, DC.
- Nicita, Alessandro, and M. Olarreaga. 2003. "Trade and Poverty in Ethiopia." Background paper for the Ethiopia: Diagnostic Trade Integration Study. World Bank, Washington, DC. Mimeo.
- Nicita, Alessandro, and Susan Razzaz. 2003. "Who Benefits and How Much? How Gender Affects Welfare Impacts of a Booming Textile Industry." Policy Research Working Paper 3029, World Bank, Development Economics Research Group, Trade, Washington, DC.
- Oxfam and IDS (Institute of Development Studies). 1999. "Liberalization and Poverty." Final Report on an Oxfam—IDS Research Project, August. Department for International Development, London.
- Porto, Guido G. 2003a. "Trade Reforms, Market Access, and Poverty in Argentina." Policy Research Working Paper 3135, World Bank, Development Economics Research Group, Trade, Washington, DC.
- . 2003b. "Using Survey Data to Assess the Distributional Effects of Trade Policy." Policy Research Working Paper 3135, World Bank, Development Economics Research Group, Trade, Washington, DC.
- . Forthcoming. "Informal Export Barriers and Poverty." *Journal of International Economics*.

- Ravallion, Martin. 1990. "Rural Welfare Effects of Food Price Changes under Induced Wage Responses: Theory and Evidence for Bangladesh." *Oxford Economic Papers* 42 (3): 574–85.
- . 2001. "Growth, Inequality and Poverty: Looking beyond Averages." *World Development* 29 (11): 1,803–15.
- Ravallion, Martin, and Michael Lokshin. 2004. "Gainers and Losers from Trade Reform in Morocco." Policy Research Working Paper 3368, World Bank, Development Research Group, Poverty, Washington, DC.
- Ravallion, Martin, and Dominique van de Walle. 1991. "The Impact on Poverty of Food Pricing Reforms: A Welfare Analysis for Indonesia." *Journal of Policy Modeling* 13 (2): 281–99.
- Reimer, Jeffrey J. 2002. "Estimating the Poverty Impacts of Trade Liberalization." Policy Research Working Paper 2790, World Bank, Development Economics Research Group, Trade, Washington, DC.
- Rhee, Yung-Whee, Katharina Katterbach, and Janette White. 1990. "Free Trade Zones in Export Strategies." Industry Series Paper 36, World Bank, Industry and Energy Department, Washington, DC.
- Robilliard, Anne-Sophie, and Sherman Robinson. 2003. "Reconciling Household Surveys and National Accounts Data Using a Cross-Entropy Estimation Method." *Review of Income and Wealth* 49 (3): 395–406.
- Rodríguez, Francisco, and Dani Rodrik. 2001. "Trade Policy and Economic Growth: A Skeptic's Guide to the Cross-National Evidence." In Ben S. Bernanke and Kenneth S. Rogoff, eds., *NBER Macroeconomics Annual 2000*. Cambridge, MA: MIT Press.
- Rodrik, Dani. 1995. "The Political Economy of Trade Policy." Vol. 3 of Gene M. Grossman and Kenneth Rogoff, eds., *Handbook of International Economics*. Amsterdam: North-Holland.
- . 1997. "Trade Policy and Economic Performance in Sub-Saharan Africa." Paper prepared for the Ministry of Foreign Affairs, Department for International Development Cooperation, Expert Group on Development Issues, Stockholm. Mimeo.
- . 1998. "Trade Policy and Economic Performance in Sub-Saharan Africa." NBER Working Paper 6562, National Bureau of Economic Research, Cambridge, MA.
- Rodrik, Dani, and Anna Maria Mayda. Forthcoming. "Why Are Some Individuals (and Countries) More Protectionist than Others?" *European Economic Review*.
- Round, Jeffery. 2003. "Social Accounting Matrices and SAM-Based Multiplier Analysis." In François Bourguignon and Luiz A. Pereira da Silva, eds., *The Impact of Economic Policies on Poverty and Income Distribution: Evaluation Techniques and Tools*, 261–276. New York: World Bank and Oxford University Press.
- Sanchez, F., and J. Nuñez. 1998. "Educación y Salarios Relativos en Colombia, 1976–1995: Determinantes, Evolución e Implicaciones para la Distribución del Ingreso." In *La distribución del ingreso en Colombia: tendencias recientes y retos de la política pública*, Bogotá, Tercer Mundo Editores. *Archivo de Macroeconomía* 74.

- Savard, Luc. 2003. "Poverty and Income Distribution in a CGE-Household Micro-Simulation Model: A Top-Down/Bottom-Up Approach." CIRPEE Working Paper 03-43, Interuniversity Center on Risk, Economic Policy, and Employment, Montreal.
- Singh, I., L. Squire, and J. Strauss, eds. 1986. *Agricultural Household Models, Extensions, Applications, and Policy*. Baltimore: Johns Hopkins University Press.
- Slaughter, Matthew J. 1999. "Globalization and Wages: A Tale of Two Perspectives." *World Economy* 22 (5): 609-30.
- Slaughter, Matthew J., and Phillip Swagel. 1997. "The Effects of Globalization on Wages in Advanced Economies." IMF Working Paper 97/43, International Monetary Fund, Research Department, Washington, DC.
- Stolper, Wolfgang F., and Paul A. Samuelson. 1941. "Protection and Real Wages." *Review of Economic Studies* 9: 58-73.
- Winters, L. Alan. 2000. "Trade and Poverty: Is There a Connection?" In D. Ben-David, Håkan Nordström, and L. Alan Winters, "Trade, Income Disparity and Poverty." *WTO Special Study* 5. Geneva: World Trade Organization.
- Winters, L. Alan, Neil McCulloch, and Andrew McKay. 2004. "Trade Liberalization and Poverty: The Evidence So Far." *Journal of Economic Literature* 42 (1): 72-115.
- Wood, Adrian. 1995. "How Trade Hurt Unskilled Workers." *Journal of Economic Perspectives* 9 (3): 57-80.
- . 1997. "Openness and Wage Inequality in Developing Countries: The Latin American Challenge to Conventional Wisdom." *World Bank Economic Review* 11 (1): 33-57.
- World Bank. 1992. "Export Processing Zones." Policy and Research Series Paper 20, Industry and Energy Department, Washington, DC.
- . 2001. *Global Economic Prospects 2002: Making Trade Work for the World's Poor*. Washington, DC: Development Prospects Group.
- . 2003. *Global Economic Prospects 2004: Realizing the Development Promise of the Doha Agenda*. Washington, DC: Development Prospects Group.