Trade, Trade Policy and Poverty:
What are the Links?

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1.   Background

1.1   The Issue

Openness and trade liberalisation have been a major component of conventional

economic policy advice for the last fifteen years. Their advocates identify strong

benefits from them in terms of both resource allocation and economic growth. While

there remain some critics of such policies, there is widespread acceptance that in the

long run open economies fare better in aggregate than do closed ones, and that

relatively open policies contribute to long-run development. Many commentators fear,

however, that in the shorter run trade liberalisation puts great stress on certain actors

in the economy and that even in the longer run successful open regimes may leave

some behind in poverty. Others additionally argue that being open – rather than just

the process of opening up – exposes an economy to shocks that generate uncertainty,

cause it to operate with higher levels of poverty than would a less open economy and

undermine policy measures designed to alleviate poverty and redistribute income.

This paper attempts to take these concerns seriously; it asks how a developing

country's own trade liberalisation, could translate into increased poverty, and what

information would be required to identify whether it will do so[1]. A companion paper,

Winters (2000a), addresses the appropriate policy response to fears of liberalisation-

induced poverty and explores whether openness does indeed limit responses unduly. It

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[1] While we focus on trade liberalisation, the analysis largely generalises to cover other shocks such as commodity price booms and slumps and exchange rate changes.

also summarises two partial empirical exercises that have been carried out to exploit parts of this framework - CUTS (1999) on India and Oxfam - IDS (1999) on Africa.

1.2   The Approach

If trade liberalisation and poverty were both easily measured, and if there were many historical instances in which liberalisation could be identified as the main economic shock, it would be simple to derive simple empirical regularities linking the two. Unfortunately, none of these conditions is met, and so we are thrown back on fragmentary evidence on parts of the argument[2]. The key to applying this evidence to the effects of trade on poverty, as well as to designing policies to alleviate any ill effects, is to understand the channels through which such effects might operate. This is the main job of this paper. We will make some reference to the available empirical evidence, but do not make any claim to comprehensiveness.[3]

We will explore the static effects of trade policy on poverty via four broad groups of institutions: enterprises, distribution channels, government and households, schematically arranged in figure 1.

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[2] For example, the fact that trade liberalisation in South-East Asia was associated with great strides in alleviating poverty is not sufficient to show that it caused those strides; too much else was going on. Similarly, the (mixed) evidence that liberalisation has gone with increasing poverty in Latin America since 1980 is not sufficient to prove the opposite.

[3] A useful summary of the evidence, written for the DfID study is McKay, Milner, Kedir and Franco (1999) – MMKF. Killick (1999) also contains useful survey material, although oriented towards structural adjustment rather than trade liberalisation per se.

Figure 1: The Analytical Scheme
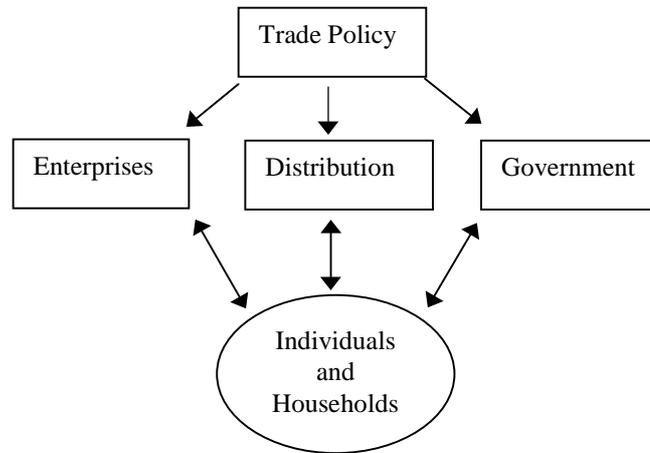
In addition, we will try to add some insight on both longer-term dynamics - economic growth - and shorter-term dynamics - adjustment stresses. None of the economic analysis for the individual institutions is very complex, but in each case we uncover both pro and anti-poor influences. Thus when we come to put them together, it will hardly be surprising that there are no general conclusions about whether trade liberalisation will increase or reduce poverty. We do, however, derive some results about the sort of circumstances under which the effects are likely to benign and, with them, the makings of a view about how liberalisation can be designed to foster poverty alleviation. One of the inevitable conclusions from our taxonomy is that the impacts on poverty will differ across countries. Thus great care is needed in generalising from one's experience to another, and policy positions for one country will be quite unsuitable for another.

Since poverty is a problem for individuals, or at most, for households, we start the analysis at that level. From there the paper considers the distribution sector (very broadly defined); the enterprise sector – especially the generation of incomes; the role

of government revenues and expenditure; the question of risk and vulnerability; economic growth and technology; and adjustment stresses and the transition to openness. Finally a section of 'Key Points' attempts to summarise our main findings from a policy point of view.

1.3   The Concept of Poverty

An important aspect of any analysis of poverty is the definition and measurement of the phenomenon itself. While recognising that there are many legitimate approaches to this, we implicitly adopt here an absolute consumption metric.[4] This entails that poverty is held to have fallen if fewer people fall below a fixed threshold in terms of their claims (entitlements) over goods and services. The threshold is not necessarily the same for all countries, although once we have to aggregate across countries – for example, to consider global effects or effects on subsets of developing countries - it becomes difficult to make the case for differences. In choosing this definition of poverty we are not denying the importance of other aspects based, for example, on social exclusion; we believe, however, that the first step towards understanding the effects of trade on poverty is to focus on the simplest and most directly observable aspects of the question. Besides, the different concepts of poverty are at least fairly well correlated.

There are many reasons why people are poor, and even within broad groups there are huge differences in circumstances between individual households. Thus the effects of many shocks will differ across 'the poor', and a crucial part of any practical analysis

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[4] Baulch (1996) offers a useful account of different poverty measures.

must be to identify different interests within that group. A first step towards this is a poverty profile, including information on the consumption and production (including employment) activities of the poor. We do not labour the point about heterogeneity below, but in truth it is hard to over-estimate its importance.

While poverty profiles are a necessary input to thinking about the links between trade and poverty, they should not lead us to believe that poverty is a static and unchanging state. There is, in fact, a fairly rapid turnover of families into and out of poverty, and the determinants of those transitions appear to be rather different from those turned up by studies of the static correlates of poverty – Baulch and McCulloch (1999). This is potentially an important insight for our purposes, for if trade affects the transition probabilities it could have significant effects on the stock of 'poor', while apparently having little to do with that stock directly. Understanding these transitions is also a crucial component in designing policy to mitigate any adverse trade or trade policy shocks. Unfortunately, this is not an issue that can be taken up directly at this stage – it depends on first completing the more prosaic static analysis that is the concern of this paper.

1.4   *Judging Policy*

Finally, if one is to enter the policy debate, one needs to think a little about the criterion for judging trade shocks. If the approach is to condemn any shock that causes even one individual to suffer a reduction in income, it is unnecessary to carry out any analysis. Given the heterogeneity of households and the strongly redistributive nature of trade policy and trade shocks, nearly any policy will fail this test. Even the

requirement that no household fall temporarily into poverty is likely to be extremely restrictive in poor countries. The more utilitarian view that the number of households (or persons) in poverty should not increase may be more appropriate. Moreover, one needs to remember that, for trade policy, it is easier to identify losers than potential gainers and that for this, and other reasons, losers will usually be better able to articulate their interests than gainers – see, for example, Krueger (1990a), Baldwin and Baldwin (1997). The volume of opinion is not a sufficient indicator of the relative strengths of the pluses and minuses of a policy change, although it may, of course, be an indicator of its political feasibility.

We do not seek to define to the appropriate metric for judging policies here, but it is important to be aware in considering the arguments below that all judgements ultimately have to be quantitative, not just qualitative.

2. The Individual and the Household

2.1 The basic household model

For convenience we start with a simple model of the farm household – see, for example, Singh, Squire and Strauss (1986). This is not to be taken literally as referring only to the rural poor, although they are the majority group, but to any household which potentially makes production as well as consumption decisions. By focussing on households we are, initially, consciously setting aside gender and intergenerational issues, but we will return to these very shortly.

In the simplest case, the household has an indirect utility function

$$u = V[p, T.w+m+r(p, w)] \qquad (1)$$

Utility, u, is expressed as a function of the vector of prices of all goods that the household faces and income. The latter is 'full income' comprising the value of the full complement of time at prevailing wage rate *(T.w)*, transfers and other non-earned income *(m)*, and profits from production decisions, *r(p, w)*. Non-earned income can include a wide range of elements such as remittances, official transfers, goods in kind, etc.

Equation (1) defines the variables that need to be assessed in order to calibrate the effects of an international trade shock on poverty. While all households will potentially be affected by any shock, we concentrate only on those households for which poverty is an issue.

It is not difficult to manipulate (1) to capture the welfare effect of a price change to good *i*– Deaton (1997):

$$\frac{\partial u}{\partial \ln p_i} = \frac{\partial V}{\partial \ln e}\left[\frac{p_i(q_i - c_i)}{e}\right] \qquad (2)$$

Where *e* is total expenditure, i.e. $_j\Sigma p_j c_j$,

c_j is consumption of good *j*, and

q_i is production of good *i*.

Thus to a first order approximation, the proportionate effect of a price change on household welfare is merely a function of its net supply position expressed at current prices as a proportion of total expenditure. The term $\partial V/\partial \ln e$ is the (proportional) marginal utility of income, which, although not immediately measurable, is assumed to be positive.

For finite price changes the household's responses influence the size of the welfare effect, but if we have full optimisation with full information, they will not reverse its sign. Responsiveness is particularly important when one considers the vulnerability aspects of poverty. Policies which reduce households' ability to adjust to or cope with negative shocks could have major implications for the translation of trade shocks into actual poverty. Moreover, fear of the consequences of not being able to cope with negative shocks might induce households to rule out activities that would raise mean income significantly. Responsiveness is also important in terms of spreading shocks from one market to the next. These factors are all considered below.

2.2 Generalising Equation (1)

Equation (1) hides some critical assumptions which need to be relaxed. They all concern the treatment of the factor endowment and production aspects of the household, however, and thus do not affect the fundamental insight of equation (2).

First, equation (1) assumes that the farm household can provide only a single form of labour. This can be simply generalised by allowing an endowment of several types of labour and writing both T and w as vectors.

Second, (1) assumes that (the vector) *w* contains one value per class of labour and is exogenously given to the household. This implies that household members are indifferent between working on the farm or outside, and the farm indifferent between 'home' and 'outside' workers. Essentially, the farm supplies labour to the labour market and buys it back at *w*. If this separability does not apply - for example, because of differential monitoring costs for family or non-family workers or transportation costs in reaching other employers - the model becomes more complicated, and we need to identify separate 'home farm' activities with endogenous virtual prices. This can be thought of as occuring within the *V*[ ] function.

Third, once labour can undertake more than one activity, we need a way of allocating time across alternatives. If prices are exogenous the choice is easy - take the activity for which the wage is highest - whereas if some prices are variable, time is allocated to equalise returns across activities (including leisure). This generalisation allows us to think about the phenomenon that poor households (individuals) earn income in a variety of different ways, and that the mix of these may change with trade shocks. Indeed, the ability to switch between activities will be an important aspect of adjusting to potentially impoverishing shocks.

A fourth generalisation arises out of the previous paragraph: some activities - and possibly some sales and purchases - may be quantity-constrained. Most obviously, some external jobs may only be available for either t or 0 hours a day - e.g. factory work or service activities such as transportation services. Particularly if trade policy flips some workers from t to 0 hours - vis. job losses - this could be the most

important of all poverty impacts. The loss of a job is probably the common proximate cause of households descending rapidly into poverty.[5]

Finally, the set of factors of production and associated returns (*T* and *w*) needs to be generalised to include land and other assets. While not getting into long-run dynamics at this stage we need to recognise that such assets generate incomes and thus affect poverty. The unequal distribution of land is an important contributory factor to poverty. Addressing it is not strictly a matter of trade policy but it clearly affects the outcomes of trade liberalisation if the latter affects the rate of return to land. As we noted above, if, for institutional reasons, an asset can not be hired out (very frequently true of land) its rate of return is endogenous.

2.3   *Genderising Equation (1)*

A key extension of the approach embodied in equation (1) is to recognise the importance of intra-household distribution. It is frequently argued that the costs of poverty fall disproportionately on women, children and the elderly. Two approaches seem possible: either use (1) to describe a household and add some analytics for intra-household distribution, or to define (1) for individuals and add some analytics to describe inter-personal transfers. The former is probably the more effective route.[6]

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[5] A very general observation is that major shocks to welfare are very commonly associated with 'corner solutions' such as this. Smooth quantitative adjustments from interior solutions need to be large to matter seriously (because of the envelop theorem), whereas at the corners small shocks can induce qualitative changes in life-style. Here we consider job loss, but below we encounter collapsing markets and changes in the sets of goods that are available.

[6] The fact that the majority of data and the bulk of interventions refer to households rather than individuals suggests that policy-makers and legislators see households as the fundamental unit.

The easiest approach is to assume separability between household activities generating and distributing welfare. With small modifications, equation (1) describes the former. For some distribution we would be able to write

$$u = u(u_1, u_2 \ldots u_K), \tag{3}$$

where household welfare, u, is written as a function of the welfare of the utility of its members u_k, k=1…K. The nature of u( ), i.e. the relative weights of individuals and their relative efficiency in translating household resources into welfare will determine the distributive shares of u_k in u (a_k). Ignoring issues of inter-personal comparisons we could then write

$$u_k = a_k\, u \tag{4}$$

and observe that if the determinants of a_k the distributional weights are not affected by trade policy, the welfare of each person in the household will vary in proportion to the whole in response to a trade shock. This would more or less remove gender and age from the picture and would be very convenient.

Unfortunately, however, separability is just not plausible, so we need to delve more deeply into the structure of the system defined by equations (3) and (4). First, the homotheticity required by separability is unlikely to hold. As households become richer, relative weights change - Kanbur and Haddad (1995). Second, for this approach to be useful we have to believe that transfers of goods and services within the household will be used to compensate individuals who, because of their non-transferable endowments (labour), bear the brunt of adverse shocks. If subsistence requirements or culture preclude this, the system is no longer separable and the effects of specific prices or factor shocks filter through to specific individuals. The distinction

between "male" and "female" crops or activities is an important link here. So too are the arguments that falling male wages and/or employment can reduce female welfare because females are obliged to increase their work outside the home, but receive little compensatory help with their traditional in-home activities. Clearly the same effects could arise if the outside price of female labour rose - e.g. because of improved export prospects for clothing. If pressure on female labour for cash crops reduces women's input to the family food crops, nutritional standards could also suffer: fieldwork on the DfID programme discovered some evidence of these kinds of problems in Southern Province, Zambia.[7]

Unfortunately while these arguments seem very plausible, they are very case-specific. Gender and intergenerational issues must be taken seriously, and the consumption and incomes of individual household members must enter (1) directly. Unfortunately, however, no robust and general approach to simplify the resulting function has emerged to date. Thus other than noting that, along with the points in the previous subsection, the gender / intergenerational issues call for attention and flexibility in the application of the basic results, it is difficult to specify how to proceed.

Moreover, information on intra-household distribution is difficult to obtain. Since it is almost impossible to disaggregate consumption across household members, it is likely that the best approach to these issues will call on physical indicators e.g. health or nutritional status, and time allocation data.

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[7] Elson (1991) and Haddad, Hodinott and Alderman (1994) provide useful overviews of these non-separabilities and their consequences. Fontana and Wood (1999) operationalize some of them in a CGE model.

3. Price Changes and the Transmission of Shocks

3.1 The direct effects of a price change: the distribution sector

We start by considering a change in the world price, tariff or exchange rate facing a single good. Figure 2 summarises the way in which such shocks might work through to the variables entering the indirect utility function in a target country. Schematically, it comprises for a household five columns of information. The elements concerning distribution lie in the middle of the figure where we plot the transmission of price shocks from world prices through to final consumers, and briefly describe the factors influencing the extent to which shocks at one stage are passed through to the next.

Consider the transmission of price shocks in pure accounting terms. For an import, the world price of a good, the tariff it faces and the exchange rate combine to define the post-tariff border price, p_b. Once inside the country, the good faces domestic taxes, distribution from the port to major distribution centres, various regulations which may add costs or control its price and the possibility of compulsory procurement by the authorities. The resulting price we term the wholesale price, p_w. From the distribution centre the good is sent out to more local distribution points, and potentially faces more taxes and regulations. In addition at this point, co-ops or other labour-managed enterprises may be involved. We distinguish these because their behaviour in the face of shocks could be significantly different from that of commercial firms. We term the resulting price the retail price, p_r, although of course market institutions may well not resemble retail outlets in the industrial economy sense. Finally, from the retail point, goods are distributed to households and individuals. Again co-operatives may be

involved, plus, of course, inputs from the household itself. More significantly, the translation of price signals into economic welfare depends on the household's endowments of time, skills, land, etc (whiche we loosely represent by vectors T_m and T_f), technology and random shocks such as weather (which are rolled into the $V()$ function). Anything that increases yields, for example, would permit a household greater welfare at any given price vector.

A corresponding taxonomy can be constructed for export goods, starting at the bottom of the column. An export good is produced, put into local marketing channels, aggregated into national supply of the good and finally sold abroad. At each stage the institutions involved incur costs and add mark-ups, all of which enter the final price. If the world price of the good is given, all such additions come off the farm-gate price that determines household welfare.

In determining the effects of world price or trade policy shocks on poor households it is vital to have a clear picture of these transmission channels and the behaviour of the agents and institutions comprising them. For example, monopsonistic buyers of export crops will respond differently to price shocks than will producers' marketing cooperatives. Regulations that fix market prices by fiat or by compensatory stock-piling can completely block the transmission of shocks to the household level.[8]

Even more important, all these various links must actually exist. If a trade liberalisation itself - or, more likely, the changes in domestic marketing arrangements that accompany it - lead to the disappearance of market institutions, households can

become completely isolated from the market and suffer substantial income losses. This is most obvious in the case of markets on which to sell cash crops, but can also afflict purchased inputs and credit. If official marketing boards provided credit for inputs and against future outputs, whereas post-liberalisation private agents do not, no increase in output prices will benefit farmers unless alternative borrowing arrangements can be made.

The importance of transmission mechanisms is well illustrated by the contrasting experience of the maize markets in Zambia and Zimbabwe during the 1990s (Oxfam - IDS, 1999). In Zambia, the government abolished the official purchasing monopsony; the activity became dominated by two private firms which probably colluded to keep prices low and which abandoned purchasing altogether in remote areas.[9] In Zimbabwe, three private buyers emerged after privatisation, including one owned by the farmers. Here the abolition of the government monopoly resulted in increased competition and prices and farm incomes rose appreciably. In a less extreme example Glewwe and de Tray (1989) show how transport and storage costs attenuated price changes of potatoes following liberalisation in Peru.

The discussion above prompts three comments. First, and blindingly obvious, is that the effects of liberalisation depends on where you set off from. If an import ban plus government monopoly subsidises remote farmers, the first round effects of

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[8] Lest this seem automatically a good thing, remember that many shocks are positive and that official bodies have a tendency to take a cut out of the price in return for providing the 'service' of insulation.
[9] Even if the latter was justified economically in the aggregate, it still left remote farmers with a huge problem. This was excerbated by the difficulties of their re-entering subsistence agriculture, given that the necessary seed stocks and practical knowledge had declined strongly during the (subsidised) cash-crop period.

liberalisation will be to hurt those groups.[10] An important example of this, based on the analysis of section 4 below, comes from Hanson and Harrison (1999). They suggest that Mexican trade liberalisation has not boosted the wages of unskilled workers as many had expected precisely because its initial pattern of protection was designed to protect that group. In short, the analysis of the poverty impact of trade liberalisation can be no more general than is the pattern of trade restrictions across countries.

Second, usually many goods are liberalised at once, so that the effects on individual households will be the sums of many individual shocks. When some of the goods affected are inputs into the production of others, the net effect is quite complex and it is important to consider the balance of forces. For example, Zambian liberalisation raised the selling price of maize in the 1990s, but even where purchasing arrangements continued, input prices rose by more as subsidised deliveries were abolished; as a result, maize output fell. (Oxfam - IDS, 1999).

3.2 Indirect effects and the domain of trade

Third, equation (2) strictly refers to infinitesimal changes, but significant changes are finite. Thus we need to know how the household will accommodate the price changes. This will first condition our view of how serious the shock is: an adverse shock may entail large losses of utility if no alternative activities exist, or relatively small losses if they do. Similarly positive shocks may deliver great benefits if households can switch their activities to take advantage of them.

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[10] Second round effects could, of course, be positive - see below.

An additional aspect of accommodating a shock is that it transmits the shock to other markets and sets off a whole series of second-round effects. A critical consideration in assessing these is the domain over which the 'second-round' goods are traded, because this defines the range of agents whose behaviour can be called upon to equilibrate the various markets. The trading domains are summarised on the far right of figure 2.

The price of a good that is traded internationally will be largely if not entirely determined by the world price. Hence putting aside endogenous adjustment in the various margins identified above, the prices of such goods will not change further as the market equilibrates to a shock. For goods that are traded on a national market, but not internationally, the second-round quantity shocks will be spread over the national economy and so will probably display sufficient flexibility to experience rather small resulting price changes. While small, however, the price changes will be widespread and through this mechanism shocks could be spread from one region of the target country to another. If goods are traded only locally – say because of transportation difficulties, or indeed, because they are services rather than goods proper – the trading domain is smaller still: the price adjustment will be larger than in the previous cases, but the impact more narrowly focussed geographically.

The literature on growth linkages - e.g. Timmer (1997), Delgado (1998) and Mellor and Gavian (1999) - argues that agricultural liberalisation and productivity growth are so effective at poverty alleviation because their demand spill-overs are heavily concentrated on relatively employment intensive and localised activities in which the poor have a large stake - for example, construction, personal servants and simple

manufactures. This literature assumes that developing country rural economies have excess labour and can deliver extra output by taking on more workers without price increases.[11] This, in turn, means that shocks have income multiplier effects. The basic idea, however, generalises to our situation. Positive shocks to the urban economy, on the other hand, result in more diffuse spill-overs, including to imports. In a fix-price world, imports are a lost opportunity for generating further employment, but where overall foreign exchange and factor constraints bite, imports generate spillovers in the export market, because they have to be paid for. If the factors used intensively in the export sector or in domestic sectors on which urban residents spend their income are not among the poorest, the spillover from urban shocks will not be particularly pro-poor.

Finally there are two sets of goods for which explicit prices are not observed: first, subsistence goods. Of course, by definition these are not subject to direct trade shocks, but they will still be affected by spillovers from goods that are. The indirect utility function is not a particularly convenient approach to modelling subsistence agriculture: it is easier to think of these spillovers in terms of inputs of labour and outputs of subsistence goods being impacted by tradable goods' prices. However, formally it can be incorporated into the analytical framework by imagining large wedges between the buying and selling prices of subsistence goods and it being more efficient to produce and consume them within the household than to trade them. As noted above, the gender dimension of adjustments in subsistence activities is very important.

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[11] See section 4.2 below for a discussion of whether such changes actually alleviate poverty.

The second set of goods for which we do not observe prices is those that are just not available. While conceptually simple to deal with in our schema – the price is infinity when they are not available - changes in the set create complex measurement problems.[12] They may be important, however, even for the poor, as Booth et al (1993) document in Tanzania. They may also be important from a policy perspective, as, for example, when regulation excludes certain goods from the market.[13]

In many cases shocks will be sufficiently specific and/or small for us to ignore these second-round effects, and we can focus just on the direct impacts described in column 2. However, the factors determining the degree of pass-through – column 3 – also depend on the trading domain. Agents' and institutions' willingness and ability to pass prices changes through will be partly determined by the domain of the market they serve. Thus the degree of tradability is important even in the simpler cases.

4.   Enterprises: profits, wages and employment

The left hand side of figure 2 describes a completely different and equally important link from trade to poverty – that arising through its effects on enterprises. 'Enterprises' includes any unit that produces and sells output and employs labour from outside its own immediate farm-household. Thus as well as registered firms proper, it includes some of the informal sector and larger farms that employ workers part-time or full-time. The important distinction is that outputs are sold and inputs

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[12] Feenstra (1994) has pioneered methods of approaching this problem, particularly in the context of the availability of inputs into production.
[13] Gisselquist and Harun-ar-Rashid (1998) discuss the restrictions on inputs into Bangladeshi agriculture and show how their relaxation greatly increased the availability of, for example, small tractors and water pumps to small farmers.

acquired through market transactions. Hence the link in the figure to border, wholesale and retail prices.

The links in the enterprise sector are set out in more detail in figure 3. It comprises three elements – demand, enterprises and factor markets. On the outer margins, demand for the output of home enterprises is determined by export, import and domestic prices, the last being endogenous, even if they are actually constrained always to equal one of the others. As noted above, domestic prices may be determined at any of several levels, but here we subsume this into one symbol and process. The figure describes only two different goods over which consumers can allocate expenditure – i and k - but, of course, there will actually be many. Some of them may be non-traded and so have only domestic prices.

The demand for the domestic good must be matched by supply, which stems from the second element – enterprises. These divide their output between home and export markets according to relative prices. They also determine total output (which possibly has to be represented as an index of home and export sales) according to the price of that output relative to costs.[14] Costs, in turn, depend on factor prices ($\underline{w}$) and factor input-output coefficients ($\underline{s}$), the latter of which depend on technology and again on factor prices. Factors and their returns need to be disaggregated by type, including caste, gender and home-working. If there are variable returns to scale, factor inputs also depend on total output – the vertical broken arrows in figure 3.

Given total output and the input-output coefficients, total factor demand is given, and this is confronted with total factor supply in the factor markets. They are equilibrated

by movements in factor prices, with the result that employment and wages – the two variables of most relevance to poverty - are determined. Implicit in this view is that the distribution of assets is given and that only factor rewards matter. Increasing asset stocks is an issue of economic growth, and perhaps public expenditure (for education and health), both of which we treat below. Redistributing them is a separate issue quite independent of trade policy.

4.1 'Trade Theory' – Inelastic Factor Supplies

Of course, all the processes described in the introduction to this section happen simultaneously, but the figure helps to explain some of the critical links. We start with traditional trade theory, in which factor supplies are exogenously fixed, wages are flexible and goods are homogeneous.

Price changes affect the incentives for enterprises to produce particular goods and the technologies they use. The simplest and most elegant analysis of these incentives – the Stolper-Samuelson Theorem (among the most powerful and elegant pieces of economic analysis on any subject) – generates very powerful results indeed. It proves that, under particular conditions, an increase in the price of the good that is labour-intensive in production will increase the real wage and decrease the real returns to capital.[15]

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[14] This characterisation depends on some separability assumptions, which could be relaxed at the cost of a few sentences.

[15] The Stolper-Samuelson Theorem is described in all International Economics textbooks - see, for example, Winters (1991) or, in more detail, Bowen, Hollander and Viaenne (1998). A full account appears in Deardorff and Stern (1994).

Unfortunately, for all its elegance, Stolper-Samuelson is not sufficient to answer questions of trade and poverty in the real world, and it must be supplemented by more heuristic but less specialised approaches– see box 'Why the Stolper-Samuelson Theorem can't analyse poverty'. Its basic insight, however, seems likely to hold under a very broad set of circumstances. An increase in the price of a good – exportable, importable or non-traded - will increase the incentive to produce it. This will raise the returns to factors of production specific to that good – e.g. labour with specific skill, specialist capital equipment – and, assuming that some increase in output is feasible, will also generally affect the returns to non-specific, or mobile, factors. Typically, the returns to at least one such factor will increase and those to at least one other fall. Presuming that the poor have only their labour to sell, the focus for poverty studies is on wage rates – usually on unskilled labour and wages.

Box 1:

Why the Stolper-Samuelson Theorem is not sufficient to analyse poverty

The Stolper-Samuelson (SS) Theorem, that an increase in the price of the labour-intensive good raises real labour incomes and reduces real returns to capital, is a hugely powerful result of direct and immediate relevance to the link between international trade and poverty. Like all theory, however, it is built on restrictive assumptions, and once these are violated its power and definitiveness are eroded. This erosion does not mean that the Theorem has nothing to say – indeed, it is still a vital part of economists' tool-kits – but it does mean that it needs to be supplemented with further, usually case-specific, analysis to draw concrete conclusions.

The basic SS mechanism is that as the price of the labour-intensive good rises, production of it increases, drawing factors of production away from the other, capital-intensive, sector. Since the labour intensive sector wishes to employ more labour per unit of capital than the capital intensive sector releases (by virtue of their factor intensities), this reallocation increases the demand for and the relative price of labour to capital. This change causes both industries to switch to less labour intensive production methods – i.e. to employ less labour per unit of capital – which, in turn, raises the marginal product of labour in both industries. If factors are paid their marginal products, labour receives a higher wage in terms of each good and so, a

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fortiori, has a higher real wage regardless of its consumption patterns. Similar reasoning shows why capital's real return falls.

The main assumptions in this chain of reasoning are described below, along with a brief indication of what happens when they are violated.

- *The functional distribution of income is not the same as the personal distribution of income:* the income of a given household is only indirectly linked to the returns to various factors of production. It depends on their ownership of the various factors, which is usually very difficult to ascertain empirically. Recently Lloyd (1998) has shown how to generalise SS to the personal distribution of income conditional on both households' endowments and their consumption patterns.

- *Dimensionality:* The very powerful SS result holds only in a *'2 x 2'* model, with 2 factors and 2 goods. Once we move beyond this the results are much weaker. In an *n x n* model each factor has a 'enemy' – a good whose price increases definitely hurt the factor – but not necessarily a 'friend'. In non-square models unambiguous results are even scarcer.

- *Mobility of labour:* independently of the number of different classes of labour distinguished, each is required to be perfectly mobile between all sectors and regions of the economy – i.e. there are perfect labour markets at the national level. If this is violated - i.e. labour markets are segmented - similar labourers in different markets must be treated as being different factors, and will fare differently from each other.

- *Diversified equilibrium:* to be sure of SS effects, the country must be producing all goods, both before and after the price change in question. If we distinguish many different goods at different levels of sophistication, this is unlikely. If countries do not produce all goods, the basic mechanism can break down and perverse results are possible - e.g. Davis (1996).

- *Differentiated goods:* SS is based on a model in which goods are homogeneous across foreign and domestic suppliers. Many argue that goods are better thought of as differentiated, in which case the critical issue is how closely domestic varieties are substitutable for the foreign varieties whose prices have changed. If the answer is 'rather little', the prices of domestic varieties will be only slightly affected by trade shocks but there will be little quantity response to the price increase for the imported variety, so the terms of trade losses from the price increase will be correspondingly unmitigated.

- *Constant returns to scale and smooth substitution between factors:* If industries are subject to economies of scale, the size of their responses to price shocks will tend to be larger than a CRS approach suggests. Also, under such circumstances it is possible for all factors to gain or lose together, which weakens the inter-factor rivalry aspect of SS. Similarly, if technology is endogenous or if labour can be substituted for other factors only in discreet steps, there may be discontinuities

- *Perfectly competitive goods and factor markets:* these are required for the direct and simple transmission of goods price shocks into factor price effects. Once there are economic rents in the system, transmission becomes more complex and difficult to predict.

- *Non-traded goods:* if some goods are non-traded their prices are no longer determined by world prices plus tariffs, but by the need to clear the domestic market. They will accommodate shocks through both price and quantity responses, rather than just the latter as for traded goods in a small country. This will tend to attenuate the rate at which tradable goods price shocks are translated into changes in the relative demands for different factors.

Broadly speaking, if the prices of unskilled-labour-intensive goods increase we would expect unskilled wages to increase. As these industries expand to meet increases in demand they absorb factors from other sectors. By definition, an unskilled-labour-intensive sector requires more unskilled labour per unit of other factors than do other sectors, and so this shift in the balance of production increases the net demand for unskilled labour and reduces it for other factors. If poor households depend largely on unskilled wage earners, poverty will be alleviated by the resulting wage increase (although head-count indices will vary only if the wage increase moves families from one side of the boundary to the other).

It is important to note that in the previous paragraph, the first-order effect is the total production effect, not any shift in factor proportions. A parallel analysis concerns technical progress. Increases in the general level of efficiency in an industry (i.e. increases in total factor productivity) will generally increase demand for the good concerned and thus for the factors that produce it. Factors specific to that sector will benefit, as will mobile factors that are used intensively in the sector. This effect could be offset if technical progress is heavily biased against one factor or another (the factor saved loses out), but if progress is concentrated on only a few sectors it is

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probably more important to know which and to know their factor intensities, than to know the factor-bias of the technical progress. If, on the other hand, technical progress is uniform across sectors, the composition effects largely cancel out and factor bias is key.[16]

In world terms developing countries are clearly labour-abundant, so that freer trade gravitates towards higher wages in general. However, within those countries it is not clear that the least-skilled workers, and thus the most likely to be poor, are the most intensively used factor in the production of tradable goods. Thus while, for example, the wages of workers with completed primary education may increase with trade liberalisation, those of illiterate workers may be left behind or even fall. One of the reasons that agriculture is such an important element in the forthcoming round of world trade talks is that for this sector we can be reasonably confident that very-low-skilled workers in rural areas – the majority group among the poor – will benefit through the production responses.

It is sometimes suggested - at least implicitly - that the factor intensity approach to the distributional effects of trade policy is refuted by the failure of Latin American liberalisation in the 1980s to alleviate poverty. Without denying the need for refinement in the argument, we would rather argue that the alleged surprise arose more from faulty premises than from theoretical failure. Thus, as Wood (1997) argues, by the 1980s Latin America was not obviously the unskilled-labour abundant region of the world economy: both China's 'arrival' in world markets and/or Latin America's abundant natural resources suggest otherwise. Similarly the growth of

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[16] "Largely" because if income elasticities are non-uniform, growth could twist consumption and hence

outsourcing, for which Northern firms do not find it most efficient to seek the lowest-grade labour, suggests that Mexican exports are intensive in labour that is relatively skilled by local standards - Feenstra and Hanson (1995). Finally, of course, it may take time for markets to clear. Thus Chile's liberalisations (trade and otherwise) were associated with worsening inequality over the 1980s, but inequality measures have now returned to pre-reform levels - and at vastly higher average income levels and lower poverty levels - World Bank (1997).

4.2 'Development Theory' – Infinitely Elastic Factor Supplies

One exception to the rule that an increase in the demand for a factor increases its wage (real return) is if the factor is available in perfectly elastic supply. Then the wage (return) will be fixed exogenously - e.g. by what the factor can earn elsewhere, which is assumed to be unaffected by the price shock we are considering - and the adjustment will take place in terms of employment.

First, suppose that labour is the elastically supplied factor. Most generally this will be because the formal sector can draw effectively infinite amounts of labour out of the informal sector or subsistence agriculture at the subsistence wage – Lewis (1954). Of course, if the formal wage is no more than the subsistence wage, this transfer will have very little effect on poverty. Poverty will only be alleviated if the loss of labour in subsistence agriculture allows the workers remaining in that sector to increase their 'wage', either because the sector begins to run out of labour (the case of successful

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output patterns. However, this does not seem likely to be a major consideration.

development) or because the workers had negative social product in that sector (e.g. overcrowding)

Another case where the supply of labour is effectively infinite is where the formal sector has an enforced minimum wage, at which there is excess supply. In this case we can presume that as labour transfers to the formal sector it earns a higher wage and that, as a result, some poverty is alleviated. If trade liberalisation raises the value of the marginal product of labour in the formal sector, it reduces the cost of the minimum wage enforcement and alleviates poverty. If, on the other hand, it reduces the value of the marginal product and thus reduces employment, it has adverse consequences.

One possibility that bears some thought is that trade could increase measured poverty precisely when it raises unskilled wages in the formal sector. If, following Harris and Todaro, workers equate the (unchanged) subsistence wage and the expected wage in the city, a rise in the actual city wage must be balanced by a higher probability of unemployment in the city. Thus although in expected value terms the trade shock would be beneficial (actually benfitting infra-marginal urban workers) and would impose no expected cost on migrants from the subsistence areas, it would lead to an increase in measured poverty *ex post*.

In fact, neither of the polar extremes is likely to be precisely true, and so in practical assessments of the effects of trade shocks on poverty, determining the elasticity of labour supply seems an important task. It is also necessary to know something of why it is non-zero, if that is the case.

A possible indicator of the relative importance of the sorts of effects comes from DfID's Indian Study (CUTS, 1999). Using the years 1987/8 to 1990/1 to reflect pre-liberalisation performance and 1991/2 to 1994/5 post-liberalsiation performance, CUTS finds formal manufacturing sector employment in India growing faster after liberalisation, and wages more slowly: employment at 3.8% and 9.4% and wages at 8.1% and 7.0% respectively. Research is now underway to check for similar effects in the informal manufacturing sector. CUTS also reports the same phenomenon for Bangladesh.

One interesting aspect of CUTS' Indian results is their sectoral dimension. There is a fairly marked positive correlation between wage and employment increases across sectors, which suggests that labour markets are rather segmented.[17] A similar conclusion derives from interview material in which sectors appeared to have different fortunes and workers appeared to identify their own fortunes very closely with those of their sector. If labour markets are segmented impacts tend to be larger in affected sectors, but less widespread. What this implies directly for poverty depends on where affected workers lie relative to the poverty line. In the long-run, however, segmented markets restrict the set of people who can gain from liberalisation.

Capital might also be available in infinite supply – e.g. say, from multinationals at the world rate of return. In this case the inflow of capital into the liberalised sector is likely to boost wages and/or employment, which will increase the welfare benefits and, if they exist, the poverty alleviation benefits, of a trade liberalisation. It is

important to remember, however, that if capital inflows make for larger effects when sectors gain from liberalisation, they are equally likely to increase them in sectors that lose.

The latter is not to say, however, that capital mobility causes otherwise avoidable losses from trade liberalisation. When capital has been attracted into a country by distortionary policies – e.g. tariff protection and tax holidays – the inflow could have been immiserising. Then, while the outflow resultant on reforming these policies will impinge directly on workers in the affected sector, the overall welfare effects taking account of spill-overs to other sectors will be positive - and larger than if there had been no immiserising investment to undo. If the distorted sector was particularly crucial in addressing poverty, however, then it might be that liberalisation worsens poverty, at least in the short-run until the affected workers have found alternative jobs and/or the government has diverted some of the gains elsewhere in the economy into poverty alleviation policies in the stricken sectors.

4.3 Differentiated Products

Of course, if our target country is not a price-taker in every good, developments in the enterprise sector will affect the prices faced by consumers and hence feed back into column 2 of figure 2. For tradable goods this is probably not a major consideration because few developing countries have significant market power over the medium and long terms, but for non-tradables it will be important. Given weak infrastructure and trading institutions, many goods and services will effectively be non-traded; their

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[17] This is consistent with the trade-off between wages and employment noted earlier if the latter reflects

prices will be determined by the need to equate local supply and demand and by the influence on supply of endogenous changes in factor prices.

An important distinction in the analysis of the enterprise sector is whether or not goods are homogeneous across foreign and domestic suppliers. Homogeneous goods must have the same prices, and so trade defines the prices of both internationally traded and domestic varieties. Trade prices essentially determine internal producer and consumer prices and analysis is straight-forward. The alternative view is that goods are differentiated, so that each variety faces its own downward-sloping demand curve, with links between goods depending on the substitutability between varieties. In this case the transmission of trade shocks to domestic prices is less direct, usually affecting more goods but being quantitatively less than in the homogeneous goods case. This typically also attenuates the shock to factor prices, because, as more goods are affected, the net shifts in the relative demands for different factors are less extreme. [As more goods are involved, the more likely are changes in factor demand to be off-setting.] The degree of substitutability between domestic varieties and those traded varieties that are affected by the trade shock becomes a critical parameter in this view of the world – see Falvey (1999): the higher it is the more the shock is focussed the related domestic varieties.

As we noted at the end of the preceding section, the trade shock will sometimes be sufficiently straight-forward that it will not be necessary to trace all the connections mentioned here, but rather focus on just a very few of them.

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differential expansion and contraction between sectors.

5.   Taxes and Spending

The right hand set of boxes in figure 2 illustrates our final major static link between trade and poverty: via taxes and government spending. The early stages of trade liberalisation entail converting quantitative restrictions and regulations into tariffs and reducing high tariff rates. Particularly if the latter is accompanied by a reduction in the scope of tariff exceptions and exemptions this stage is likely to increase tariff revenue, rather than reduce it – Pritchett and Sethi (1991) and Hood (1998). This increase in taxation will affect prices, and if, through the channels just discussed, it impinges heavily on the poor, it could worsen poverty even if it increases economic welfare overall - particularly if the government is not efficient in spending or targeting the revenue it collects.

Eventually, however, a trade liberalisation will reduce tariff rates so far that government revenue falls. This triggers the worry more commonly expressed about liberalisation and poverty – namely that the government, finding its revenue constrained, will curtail expenditure on social and other poverty alleviating policies and/or levy new taxes on staple and other goods consumed heavily by the poor. Given the association between stabilisation, liberalisation and poverty over the 1980s, these worries have some historical basis, but it would be mistaken to assume that the association is immutable. It is clear, however, that care and political focus are required to ensure that this indirect route does not lead to adverse effects on poverty.

A further question under this heading is whether trade liberalisation restricts a government's ability to manage spending and taxation in a way that impacts poverty.

To start again at the politically incorrect end of the question, a trade liberalisation bound at the WTO, or perhaps as part of a Bretton Woods package, makes the price-reducing effects of tariff cuts less reversible, constrains a government's (or its successor's) ability to manipulate policy in arbitrary ways. Given that such manipulation very often redistributes real income from the poor to the rich, and that uncertainty reduces the incentives to invest, the constraints are likely to be beneficial. Put more positively, WTO or the Bretton Woods organisation may allow governments to tie their own, or their successors', hands in ways that would otherwise be politically impossible.

Much more common is the fear that bindings and / or commitments at the WTO prevent governments from pursuing pro-poor interventions. For example, if price variability is a problem it is argued that the ban on variable levies, which stabilise the domestic prices of internationally traded goods, could hurt the poor by subjecting them to greater uncertainty. It is sometimes argued that the Uruguay Round Agreement on Subsidies precludes production subsidies that could stimulate output and development - see, for example, the positions of India and Korea during the Uruguay Round negotiations - Croome (1995, p201).[18] Finally, the agreement on levels of agricultural support may undermine food subsidy schemes if countries' nominal subsidy requirements have increased above low base year levels of support, and if direct consumption subsidies can not be substituted for production-based subsidies. But again, few developing countries face such constraints.

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[18] The Agreement does restrict production subsidies in principle but for developing countries the disciplines are very weak. A trading partner would have to demonstrate actual harm before acting against them, which seems very unlikely for the sort of subsidies that might help to alleviate poverty.

All these arguments are essentially specific examples of the analysis above: they are trade interventions whose direct effects can be traced via the distribution and enterprise sectors. In addition, however, they have systemic effects because they affect whole classes of policies. For example, even if some subsidies would be advantageous, given the difficulty of identifying these cases and preventing their capture by interest groups, a blanket ban may be advantageous. Alternatively if governments have established good reputations for using trade policy contingently to stabilise the real incomes of the poor, blanket bans may raise perceived uncertainty in sectors that have not, to date, been subject to intervention. Clearly making such determinations in practice is going to be very complex, and all one can do is plead that they be made on the basis of the evidence rather than the theoretical potential of government performance.

Finally, some have argued - e.g. Rodrik (1997) - that increased openness reduces governments' abilities to raise revenue because mobile factors can no longer be taxed. If so, social and redistributive expenditure could be under threat. In its direct form this argument applies only to factors that can move locations in response to taxation (or other) incentives, so international trade policy is only indirectly relevant. For example, the general reduction in trade barriers since the mid-1980s has made it easier to 'cut up the value chain', which presumably fosters capital mobility. On the trade side, increasing world competition makes it more costly for an individual country to tax exports in terms of both eroding the tax base and distorting production patterns. However, it is not clear that individual countries have ever had much scope for such taxes in manufactures, which is where trade barriers have come down most strongly in

recent decades. Note that in both these examples it is as much other countries' policies as one's own that matter.

An inability to tax capital is clearly a problem for governments intent on redistributive policies, and it clearly reduces the set of available options. It should not, however, be taken as precluding all possibilities. First, most countries collected only a small proportion of their revenues from capital taxation even when economies were very closed. Second, in fact, many governments subsidise inward investment rather than fret about not being able to tax it. Third, there are other redistributive policies which are not vulnerable to this difficulty. For example, for tackling poverty, Bowles (1999) lists land reform, re-assigning property rights implicit in use of the commons, public-brokered risk sharing, greater accountability in the provision of public services, and removing or reducing discrimination. None of these is easy, but they certainly show that taxing capital is not the only route to helping the poor.

6.   Shocks, Risks and Vulnerability

The static analysis compares two perfectly stable scenarios, but, in reality, the real world is full of shocks. Thus an ideal analysis should try to deal more directly with the effects of trade liberalisation on the chances of falling into poverty (or of emerging from it) in an uncertain world. Moreover we would also need to consider agents' responses to these probabilities, which may, in turn, feed back onto the static level effects.

The simplest analysis of risk supposes that both foreign and domestic economies are subject to independent random shocks. By increasing foreign exposure trade liberalisation increases the weight of foreign relative to domestic shocks in the determination of domestic welfare. [19] Simple risk spreading suggests that at low levels of trade, further trade liberalisation would tend to reduce risk exposure, but if foreign shocks are much greater than domestic ones, we could get the opposite effects. Similarly, the correlations between the two sets of shocks will influence the net effects of further openness.

The most obvious application of the independent risks model is if farmers produce a crop which is transformed from non-tradable to tradable status. Postponing consideration of changes in price stabilisation policies, this seems most likely to reduce variability since for most goods world markets will be more stable than local ones. Another possibility, however - observed quite frequently - is that liberalisation leads farmers to switch from crop x (subsistence food, say) to crop y (cash crop). Their risk then switches from var (x) to var (y), and thus could obviously increase. However, if this switch is made knowingly and has no external effects, it is not clear that it is welfare worsening, even if the variance increases. Thus, just as with the Harris-Todaro example above, higher expected welfare might be correlated with increasing observed poverty if farmers accept higher variance in order to reap higher mean rewards and periodically get unfortunate drawing from the distribution.

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[19] Foreign shocks are, of course, transmitted through the links discussed above. As above, they will pass through different amounts of the risk onto the poor according to the specifics of the case - e.g. much if a sector makes heavy use of casual labour. Thus sectors with apparently similar distributions of international shocks can have very different implications for the probability distribution of shocks facing the poor.

Of course, the switch from subsistence to cash crops may not be made knowingly (governments do not always convey information on risk accurately) and there may be important externalities. Oxfam - IDS (1999) report how, in rural Zambia, switches to maize as a cash crop eliminated the knowledge and seed supplies required for subsistence agriculture, preventing farmers from reverting to traditional methods when the cash crop market disappeared. Additionally, switches between crops may have serious implications for intra-household income distributions. If, for example, adult males receive the returns from cash crops but females and children bear the risks of failure in terms of nutrition or schooling, the decision to switch may not be welfare enhancing for the household overall. The important point, however, is that not every *ex post* descent into poverty is the result of an *ex ante* flawed response to trade liberalisation.

An alternative lens on the previous paragraph is the observation that the inability to bear the risks entailed in producing cash crops can explain the unwillingness to pursue higher mean returns created by trade. Farmers can not afford to be entrepreneurial - Morduch (1994). The policy implication of this is to call for serious consideration of whether the inability to bear risk reflects distortions in, for example, capital markets. Creating a guaranteed minimum level of real income through policies such as standing public employment schemes could increase the supply responses and income benefits of trade liberalisation significantly.

One fear is that, because trade liberalisation (especially in the context of a GATT Round) alters the set of feasible policies, it affects the ability of governments to operate price stabilisation policies. Thus, for example, if prior to liberalisation

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domestic food prices were stabilised by varying the restrictiveness of trade policy (e.g. variable levies, allowing imports only in periods of shortage), moving to a fixed tariff could increase instability. Thus the Uruguay Round constraints on variable levies or on export subsidies, for example, could, in principle, increase instability in certain economies even if they raise average incomes. If economies are inherently inflexible, increasing instability could increase the incidence of poverty.

Turning briefly to country-level data, there is a presumption that more open economies suffer more heavily from terms of trade shocks, e.g. Rodrik (1998). This question has at least two elements. First, if openness encourages specialisation one would expect the net barter terms of trade (NBTT - the ratio of import to export prices) to become more volatile with openness. In fact, this appears not to happen - see Lutz and Singer (1994), and also Easterly and Kraay (1999), who find very small countries have no worse volatility than larger ones. Second, a given volatility in the NTBB implies a greater volatility in national income the more open the economy, which we expect to increase, ceteris paribus, with trade liberalisation (and also as size falls). This second element does receive empirical support - Rodrik (1998) and Easterly and Kraay (1999). A possible third element is whether liberal economies generate larger or smaller domestic shocks, which could go either way. Krueger (1990b) for example, argues that openness encourages better policy positions all round. Rodrik suggests that open economies have greater income volatility overall, which suggests that the second element predominates, but, of course, this does not necessarily mean greater consumption volatility. Thus, overall, trade liberalisation has ambiguous implications for macro stability.

The connection between trade liberalisation and risk and vulnerability is clearly very important and yet is extremely poorly researched. One can certainly find examples in which adverse shocks have led to some people falling into poverty that they may have plausibly avoided in the absence of reform, but such observations alone do not constitute a case against liberalisation. As well as the trade-offs between individuals that we noted above in the static results, we need to consider the trade-offs for any individual over time and between states of nature. It may be rational (and voluntary) to increase the *ex ante* risk of poverty in return for higher expected returns.

7.   Economic Growth and Technology

Economic growth is the key to permanent poverty alleviation. It is also strongly related to contemporaneous reductions in poverty – see, for example, Bruno, Ravallion and Squire (1996) or Roemer and Gugerty (1997). Unless growth seriously worsens income distribution the numbers in poverty measured in any absolute way will fall as average incomes increase. The balance of the evidence seems to be that although growth can be associated with growing inequality (or economic decline with narrowing inequality), the effects on poverty tend to be dominated by the advantageous direct effects of growth - see, for example, Demery and Squire (1996) on Africa. This effect also appears to generalise to the very poor (below $1 per day) - Ravallion and Chen (1996) or Bruno, Ravallion and Squire (1996). However, at such very low levels of income, small shocks loom large and Demery and Squire (1996) find hints of contrary evidence in Africa. Possibly lying behind these results, but possibly independent of them, we should note that it is generally easier for the

government to raise the resources for poverty alleviating policies if incomes are higher and/or growing.

Overall, therefore, if there is any truth in the claims that openness enhances growth, we might reasonably expect it to have beneficial effects on poverty through that route alone. Certainly we would need strong case-specific information that a particular trade liberalisation seriously worsened income distribution before we adopted the contrary view. On the other hand, we should be aware that 'neutral' growth has to be strong if it is to stabilise the absolute number of poor in an expanding society. Each year it needs to keep pace with population growth and then to add some more to pull the incremental numbers of poor out of poverty. Thus relying on growth and the growth effects of trade liberalisation is probably not sufficient to address poverty problems over the medium term. Conscious policy is also required.

So what about trade liberalisation and growth? Controversy rages. There is evidence that, even allowing for adjustment strains, liberalisation typically boosts growth in the relatively near term - e.g. OED (1992), Greenaway et al (1998). Whether this reflects just a move closer to the production possibility frontier or an increase in the latter's rate of expansion is not clear, however. The former is still worth something, but it is the latter that really matters.

There is widespread belief that openness, fairly broadly defined, stimulates growth, although the most commonly cited studies - e.g. Dollar (1992), Sachs and Warner (1995), Edwards (1998) - have received pretty rough treatment recently from Rodriguez and Rodrik (1999). Moreover, these studies include open trade (the *result*

of trade liberalisation) as only one of several indicators of openness and one which generally seems to weigh rather lightly in the overall result - e.g. Harrison (1996). In part, I suspect, the weakness of the empirical link between liberal trade and growth reflects the extreme difficulties of measuring trade stances once one comes inside the boundary of near autarchy: for example, tariffs need to be aggregated, QRs assessed and then aggregated, the degree of credibility and negotiability represented, and the level of enforcement measured - see Winters (2000b). Overall, the fairest assessment of the evidence is that trade liberalisation alone has not been unambiguously linked to subsequent economic growth, but that it has certainly not been identified as a hindrance. Trade liberalisation does have a positive role, however, as part of a package of measures promoting greater use of the market, more stable and less arbitrary policy intervention, stronger competition and macro economic stability. With the exception of the last, an open trade regime is probably essential to the long-run achievement of these stances, and it probably helps with the last as well (Krueger 1990b). Thus trade liberalisation is a major contributory factor in economic development.

Any link from openness to growth probably operates at least partly by enhancing technical progress, for example by making new inputs, new technologies, or new management techniques available to local producers. Such flows could arise from trade – either imports or exports – or from direct flows of technology from abroad.

The evidence that access to imports enhances performance is quite strong Esfahani (1991) and Feenstra et al (1997), while that which postulates a link from exporting to technology is, surprisingly to some, weaker. While macro studies and case-studies

have suggested links, detailed and formal work based on enterprise data is doubtful: Collier et al (1999) find links for Africa, while Kraay (1998) is ambiguous for China and Tybout and Westbrook (1995) find nothing for Latin America. Similarly it is quite difficult to prove that FDI boosts efficiency e.g. Haddad and Harrison (1993). In both cases the problem is one of causation: efficiency and exporting are linked because efficient firms export, FDI and efficiency because investors choose efficient firms and sectors. While there is undoubtedly a connection between openness and the dynamism of an economy, it is more complex than economists sometimes choose to believe. Openness probably needs several concommitant policies or conditions before it will generate growth.

Of course technological flows need not depend just on trade or technology policies in a WTO-sense; they may arise autonomously or through direct interventions in research and development in favour of developing countries. An example of the latter might be the green revolution, which produced and disseminated high-yield varieties of grain in many parts of the developing world. While most commentators hold the green revolution to have been a significant step forward in poverty alleviation, the mechanisms identified are quite complex. For example, non-farmers have sometimes been major beneficiaries via increased demand for purchased inputs where local industries exist to satisfy the demand for consumption goods and equipment - Moseley (1999) - or where demand for local services has increased - Mellor (1999). Both are examples of significant inter-market spill-overs. Alternatively, income has been transferred from farmers to net buyers of food through policies that forced agricultural output to be domestically absorbed rather than exported - see Quizon and Binswanger (1986) on India.

A very sensitive issue in the area of openness and technology is intellectual property - TRIPs. The Uruguay Round TRIPs agreement certainly results in developing countries having to pay more for using certain technologies, and could, for that reason, curtail their use. On the other hand, the increased rewards may stimulate the flow of technology to developing countries, although, to date, firm evidence to that effect is lacking. The commercialisation of intellectual property may also bias it away from meeting the needs of the poor, since collectively they represent such a small market. Thus coterminus with the creation of intellectual property rights, serious attention should be paid to the older publicly funded sources of technology, and to ensuring that IPRs do not shut off routes for the cost-effective development of crop technologies and health products for the poor.

It seems impossible at present to make convincing generalisations about how technology and trade liberalisation might interact in their effects on poverty. However, we should re-iterate the warning in section 4 that the sectoral composition and factor intensities of the affected sectors will be major factors in determining those effects.

Growth does not appear explicitly in the analytical scheme of figure 2, but it should not be forgotten on that account. Growth will affect relative prices as well as the incomes generated by the enterprise sector both in terms of their average level and the number of people working in that sector. By generating greater demand, growth will assist government revenue raising. To the extent that growth is based on technological

improvements it will affect the incomes generated by the enterprise sector as well as increase the output that farm households generate at any given price level.

8. Short-term Adjustment

Trade liberalisation is generally held to have long-run benefits, but, as we teach our undergraduates, it more or less requires adjustment in a country's output bundle to achieve them. If adjustment is costly it could lead to periods of decline and / or poverty before things get better.

For assessments of the overall economic benefits of liberalisation, the distinction between the social and private costs of adjustment is critical. The former are net losses to society, through, for example, higher unemployment. The latter are private costs that are counterparts to private gains elsewhere - for example, the loss of jobs that existed only by virtue of subsidy or distortion. For our purposes, however, the distinction is less significant. Our question is just whether individuals or households slip temporarily into poverty as an economy adjusts to open trade, and what can be done to prevent this and help them if they do.

The most significant adjustment problem lies in factor markets, especially employment, and so we concentrate on that. There are two separate questions: how long do spells of unemployment / underemployment last and who suffers them. [It is the nature of adjustment or transition costs that they are temporary. Permanent losses are strictly the business of previous sections, although, of course, in practice it

requires great confidence in one's analytical and empirical tools to claim to be able to separate permanent from temporary job loss *ex ante*.]

Before answering these two questions directly, we consider another consequence of the difficulties of identifying the consequences of trade liberalisation. The losers from reform are identifiable, concrete and personified - Krueger (1990a) - whereas the gains are diffuse and appear merely prospective and theoretical. Only in a proportion of cases can one confidently identify the sectors that will gain (e.g. when large export taxes are removed), and even then, although one might identify capital or resource owners who stand to benefit, it is almost impossible *ex ante* to name the workers who will fill the new jobs and / or benefit from pay rises. Couple this with a natural tendency to place greater weight on (and hence to be more vocal about) declines in welfare than on equal increases, and it is easy to see how attitudes towards liberalisation policy are biased towards antipathy. This is not to say that all criticism of trade liberalisation is misguided and biased, but it is a warning against too simplistic a response to the fact that liberalisation typically generates complaints that it destroys jobs.

8.1 How long does unemployment last?

The key to answering this question lies in the speed of labour turnover and the flexibility of the labour market. Unfortunately, there is apparently very little research directly on labour turnover in developing countries - Matusz and Tarr (1998). The latter suggest that, in industrial countries where liberalisation more frequently means the contraction of a sector, not its demise, it is surprisingly rapid in most circumstances. If

so, unemployment of displaced workers will be relatively short-lived. In some cases workers displaced from low-paid jobs not only found new jobs quickly, but at higher wages - Jacobson (1978). In developing countries such benign effects are also a realistic possibility, although the evidence is based on aggregate employment data rather than surveys of workers. For example, Mauritius has successfully combined trade liberalisation with poverty reduction - see, for example, Milner and Wright (1998), who identify increasing unskilled and female wages as exports boomed, and English (1997) who finds sharp reductions in poverty following liberalisation. Panama is another case: a strong liberalisation of trade in 1996/7 and of domestic regulations in previous years led to a decrease in unemployment (16.2 to 13.2 in one year) and to reduced poverty as informal sector wages rose and poor workers entered formal employment. Harrison and Revenga (1998) find manufacturing employment increasing almost immediately after half the liberalisations they study; the other half are mostly transitional economies in which much more than trade liberalisation was happening and in which the general retrenchment created a very unfavourable environment for trade-displaced workers.

Not all is so rosy, however, even in "regular" (i.e. non-transition) liberalisations. Workers may suffer long-lived and deep losses of income if they have previously enjoyed very high levels of protection or if they had built up strong firm-specific human capital. For example, Jacobson et al (1993a,b) find that the US workers laid off after long job tenure earned 25% below their pre-dismissal wages after five years. Rama and MacIsaac (1996) find that employees displaced from the Ecuadorian Central Bank in 1994 had regained on average only 55% of their pre-dismissed salaries after 15 months despite generally low unemployment levels. Mills and Sahn

(1995) found that of Guinean public sector workers laid off over 1985-88, half of those who found new jobs increased their earnings. However, their average unemployment duration exceeded two years and fully 30% of them were still unemployed by 1992.

Where major reform is undertaken, it is frequently argued that things must get worse before they get better. Fiscal retrenchment is necessary immediately and the 'old ways of doing things' comprehensively dismantled in order to lend credibility to the claim that new ways will emerge. Under these circumstances it is hardly surprising that transitional unemployment occurs, and the key factor in its duration will be the institutional structures for new activity to grow. The latter include such things as the freedom to establish new firms, the ability to obtain service by utility companies, the security of property rights and the existence of credit markets. They do <u>not</u> include policies to delay change by protecting employment and existing employers except, possibly, in the very short run. Such delays undermine the credibility of reform and hinder the development of new activities, as, for example, we saw in Poland over 1990-91 (Winters and Wang, 1994) and India over the early nineties (CUTS, 1999).

There is a sequencing issue in all this: whether to delay necessary trade reform until these complementary policies are in place. As I argue elsewhere (Winters, 2000a, b) small delay may be warranted, but only in the context of a well planned and pre-announced sequence of reforms that credibly commit to reform. Waiting until everything is in place before commiting to liberalisation can mean waiting for ever.

The conclusion is, yet again, that it is difficult to generalise about how deep and how durable transition losses will be. One needs to know about the specific circumstances of the affected sectors. It does seem likely, however, that costs will be greater the more protected the sector originally was and the greater the shock. In particular, labour markets suffering very large shocks can become dysfunctional because even normal turn-over ceases as incumbents dare not resign for fear of not finding a new job. Thus major reforms - e.g. transition - or concentrated reforms - e.g. closing the only plant in a town - do seem more likely to generate transitional losses through unemployment than more diffuse reforms. On the other hand, it is precisely the sectors with highest protection or the economies with most widespread distortion that offer the greatest long-run returns to reform.

8.2   *Transitional unemployment and poverty*

Transitional unemployment (or declining rewards for skills) is unfortunate for anyone who suffers it, but it does not necessarily lead to poverty. Individuals who have lived beyond the reach of poverty for some time will generally have assets, or access to credit, with which to smooth consumption.[20] Thus for such individuals it is only longer shocks that fall within the remit of this paper. The poor, on the other hand, will have very few assets, and so will be unable to smooth over even short spells of unemployment. Hence, even switching from one unskilled informal sector job to another could cause severe hardship, especially if temporary stress led to permanent or semi-permanent consequences, such as losing one's place in the queue for rented

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[20] In case it seems callous to suggest consuming assets, recall that most precipitous declines in income result from losing public support - i.e. from being unable to continue to live comfortably on the proceeds of distortions or transfers that others finance.

housing or education services. This suggests that attention to transitional unemployment should mainly be focussed on those who were poor or near-poor initially. This is not always the case in practice, for typically the middle class will be more articulate and more influential politically than the poor.

One possibility worth noting is that there are transitory benefits. Many informal workers are under-employed, and so could devote some time to 'new' activities even before giving up the old. If the liberalisation stimulates sectors before old ones decline, there could be temporary *increases* in income - and almost certainly the perception that trade liberalisation is harmful when the situation of these workers returns to normal!

9. Key Points

The link between trade policy and poverty is evidently a very complex topic for which few generalisations are possible. Our analysis, however, suggests some important questions that should be posed about any prospective trade reform.

Will the effects of changed border prices be passed through to the rest of the economy?

Trade policy and shocks operate primarily via prices. If price changes are not transmitted, e.g. because governments continue to fix the internal prices of goods which they have ostensibly liberalised internationally, the most direct effects on poverty (positive or negative) will be nullified.

Is reform likely to destroy effective markets or create them and will it allow poor consumers to obtain new goods?

Perhaps the most direct effect of trade reform on poverty is via the prices of goods/services in which poor households have large net positions. The largest price shocks occur when either the initial or final price is finite and the other infinite (i.e. when there is no market). A shock that completely undermines an important market – e.g. for a cash crop or a form of labour - is likely to have major poverty implications. Similarly, bringing new opportunities, goods or services to the poor can greatly enhance welfare.

Is it likely to affect different household members differently?

Within a household, claims on particular goods and endowments of particular assets (labour) are typically unevenly distributed. This raises the possibility that poverty impacts are concentrated on particular members – usually females and children, who may lose personally even when the household in aggregate gains.

Will its spillovers be concentrated on areas / activities of relevance to the poor?

Sectors of an economy are interlinked and, if substitutability is high, a shock will be readily transmitted from one to another. Frequently the diffusion will be so broad that it has little effect on any particular locality or sector, but sometimes – e.g. where services are traded only very locally – the transmission is narrow but deep. Then it is

necessary to ask whether the second round effects have serious poverty implications. Agricultural stimuli can confer strong benefits on local economies via benign spillovers.

What factors are used intensively in the most affected sectors? What is their elasticity of supply, and why?

Changes in the prices of goods affect the functional distribution of income according to factor intensities. Predicting either the price effects or the factor intensities of affected sectors can be complex, as was seen with the Latin American reforms of the 1980s and 90s. In addition, if factor supplies show some elasticity, part of a trade shock will show up as changes in employment rather than in factor prices. In the limit, a perfectly elastically supplied factor will experience only employment effects. This is most pertinent for labour markets. If the prevailing wage is determined by subsistence levels, switching people from one activity to another has no perceptible effect on poverty. If, on the other hand, the trade-affected sector pays higher wages (because, say, it has an institutionally enforced minimum wage), increases in activity will tend to reduce poverty and declines increase it. The formal/informal divide is important in this respect.

In all this, it is important to remember the difference between the functional and the personal distribution of income. Falling unskilled wages generate poverty only to the extent that the poor depend disproportionately on such wages.

Will the reform <u>actually</u> affect government revenue strongly?

One's immediate reaction is that cutting tariffs will reduce government revenue. While in the limit this clearly true – zero tariffs entail zero revenue – many trade reforms actually have small or even positive revenue effects, especially if they convert NTBs into tariffs, remove exemptions and get tariff rates down to levels that significantly reduce smuggling. Even where revenue falls, it is not inevitable that expenditure on the poor will decline. That, ultimately, is a policy decision.

Will it lead to discontinuous switches in activities? If so, will the new activities be riskier than the old ones?

If a trade liberalisation merely changes the weights of a given set of outputs in total economic activity, it will most likely reduce risk: foreign markets are likely to be less variable than domestic ones and even if they are not, risk spreading is likely to reduce overall risk. If, however, trade reform leads to more or less complete changes in activities, there is a possibility that risk increases as the new activity is riskier than the old one.

Does the reform depend upon or affect the ability of poor people to take risks?

The very poor are likely to seriously risk averse. Because for them the consequences of even small negative shocks are so serious, they will tend not to welcome a change that raises mean income and increases their chances of higher incomes if at the same time it also increases their chances of lower ones. This might make them unwilling to adjust to seize opportunities that are beneficial in mean income terms and hence leave

them only with negative elements of a reform package. Similarly, if a reform makes it more difficult for the poor to continue their traditional insulation strategies, it may increase their vulnerability to poverty even if it increases mean incomes.

If the reform is broad and systemic, will any growth it stimulates be particularly unequalising?

Economic growth is the key to sustained poverty reduction. Only if it is very unequalising, will growth increase absolute poverty. One possible concern is if liberalisation strongly increases exports of minerals or plantation crops at the expense of other more labour intensive goods. Even here, however, while the initial impact of such a shock may hurt the poor, if it induces long-lived increases in economic activity, the demands for non-traded goods and services is likely eventually to trickle down into income growth for the poor. In such cases, however, there is a strong case for speeding up the redistribution through more direct measures such as social programmes.

Will the reform imply major shocks for particular localities?

Large shocks can create qualitatively different responses from smaller ones – for example, markets can seize up or disappear altogether. Thus if a reform implies very large shocks for particular localities mitigation in terms of phasing or, better, compensatory-complimentary policy could be called for. There is a trade-off, however, for typically larger shocks will reflect bigger shortfalls between current and potential performance and hence larger long-run gains from reform.

Will transitional unemployment be concentrated on the poor?

The non-poor will typically have assets that carry them through periods of adjustment. This might be unfortunate for them, but it is not poverty strictly defined. The poor, on the other hand, have few assets, so even relatively short periods of transition could induce descent into deep poverty. If the transition impinges on the poor there is a strong case for using some of the long-run benefits of a reform to ease their adjustment strains.

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Figure 2: Trade and Poverty - Potential Channels of Causation
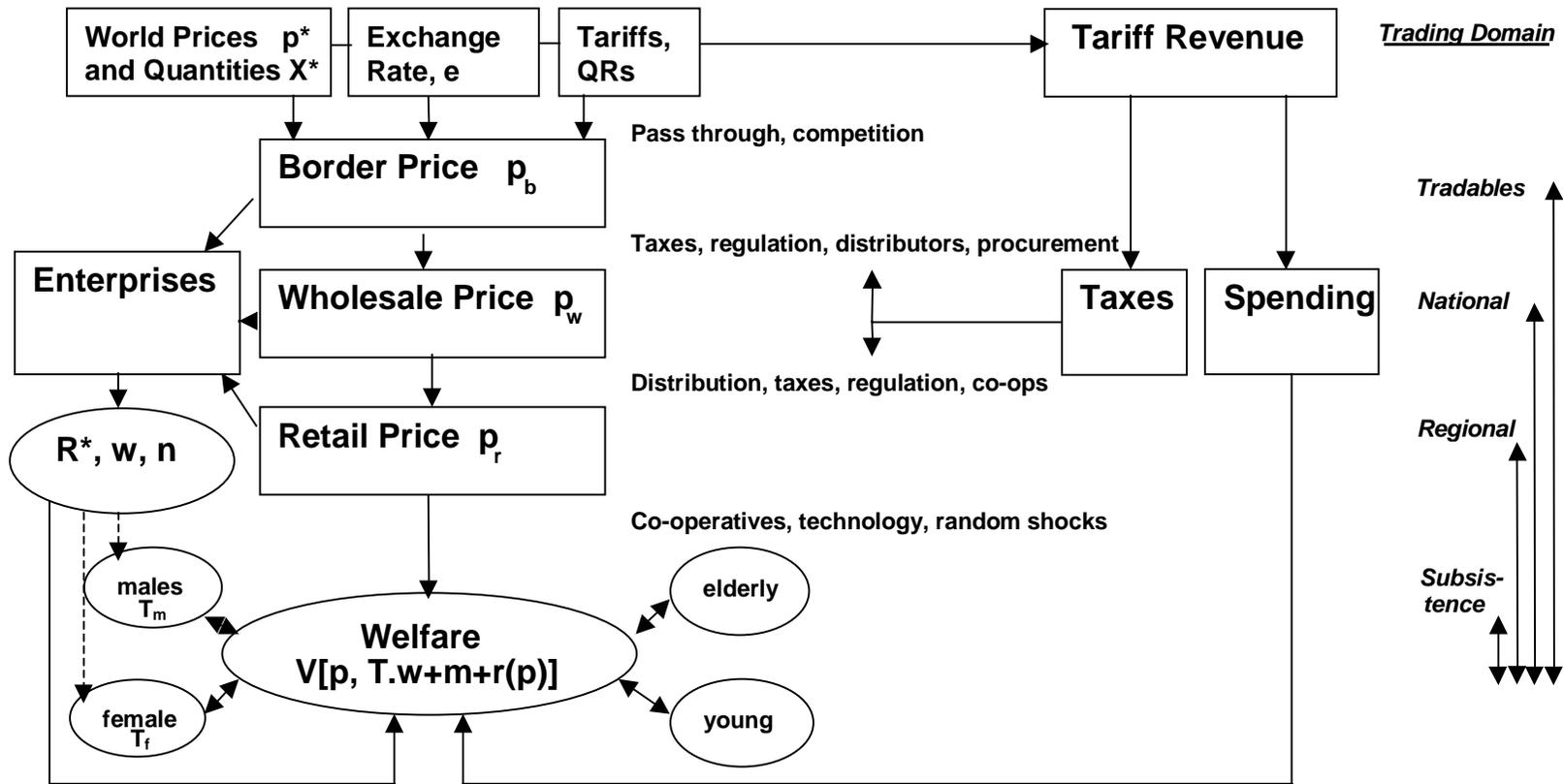
R* profits of enterprises distributed to households
n employment by factor
V utility or welfare of household
T total (time) endowments by factor
r profits from production activities by households

w factor rewards (wages)
p prices faced by households for goods and services, including liesure (the wage)
m household income in kind and transfers

Figure 3 Links in the Enterprise Sector

demand sector   firms   factor markets   firms   demand sector

Key:
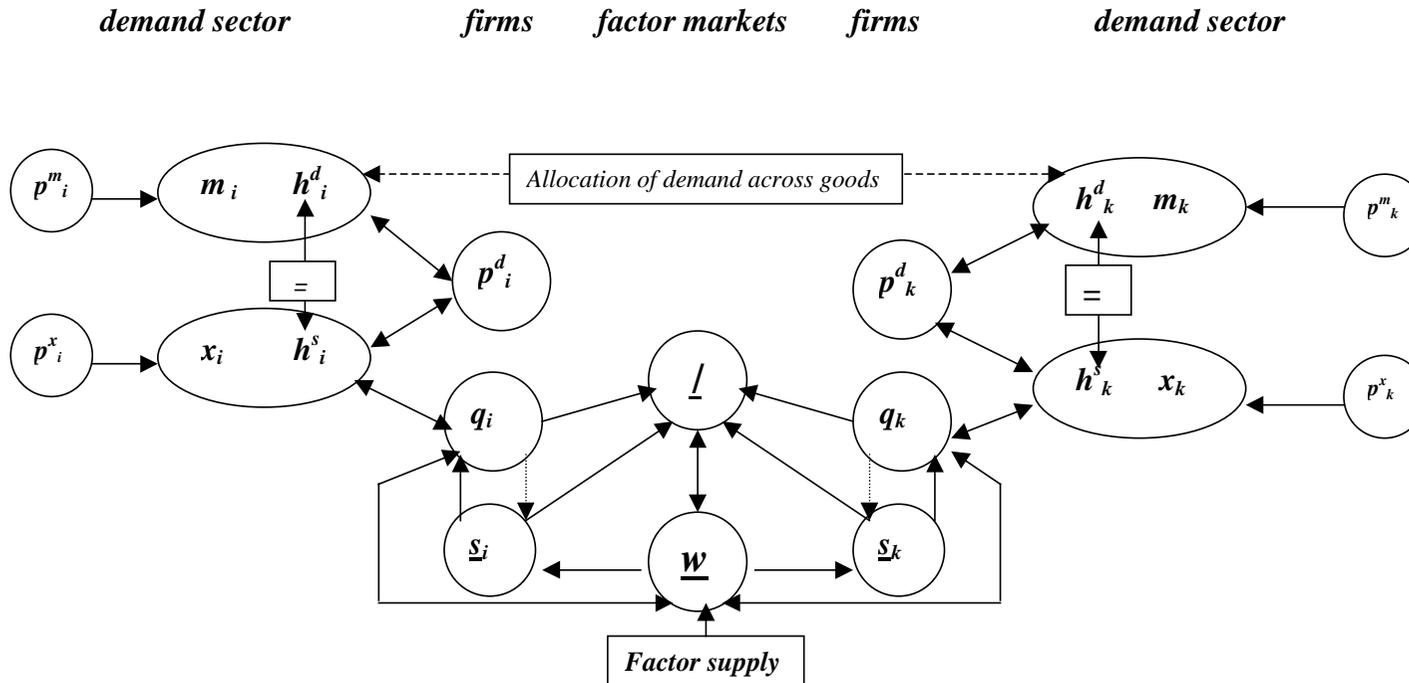
p^x_i export price of i; p^m_i import price of i;

h^d_i home demand for domestic variety; m_i home demand for imported variety (imports);

h^s_i home supply of domestic variety; x_i home supply of exported variety (exports)

p^d_i domestic price of domestic variety; q_i index of total home output – sometimes = $h^s_i + x_i$;

$\underline{w}$ vector of domestic factor returns (wages); $\underline{l}$ vector of employment levels for domestic factors;

$\underline{s_i}$ vector of factor input-output coefficients for good i;   i,k goods indices.